24th Street Improvement Project



Traffic Analysis

BAKERSFIELD, KERN COUNTY, CALIFORNIA
DISTRICT 06- FRESNO
EA 06-493900 Caltrans ID: 0600000495
06-KER-58-51.7/51.8
06-KER-178-0.0/0.4
06-KER-99-24.9/25.7
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EXECUTIVE SUMMARY

The City of Bakersfield has proposed improvements to 24th Street between SR-99 and SR-178, which will help improve east-west mobility within the City and improve access to downtown Bakersfield.

This report provides traffic information and analysis related to the proposed project, including traffic counts, local land use and future travel demand forecasts. This report evaluates the proposed project design by assessing traffic operations with and without the proposed project and provides an assessment of regional benefits. This document is a companion to the 24th Street Improvement Project Environmental Document, and will be included in the environmental document as an appendix.

Traffic operations analysis has been prepared for existing, year 2035, and year 2015 conditions. The proposed project has been refined to provide improved or acceptable operations compared to No Build conditions. Comprehensive traffic analysis has been prepared concurrent with project design, and considerations of local circulation and parking within the study area have been reviewed.

INTRODUCTION

Report Overview

The City of Bakersfield has proposed improvements to 24th Street between State Route 99 (SR-99) and State Route 178 (SR-178), which will help improve east-west mobility within the City and improve access to downtown Bakersfield.

This report provides traffic information and analysis related to the proposed project, including traffic counts, local land use and future travel demand forecasts. This report evaluates the proposed project design by assessing traffic operations with and without the proposed project and provides an assessment of regional benefits.

Project Study Reports (PSRs) for the Oak Street Interchange project and SR-178 Widening project were completed in June, 2005. The PSRs utilized traffic data from the KERN Council of Governments (Kern COG) model developed in 1998. The Project Study Report (PSR) prepared in 2005 included the proposed widening of SR-178 between Oak Street and D Street in the City of Bakersfield. The PSR included a No Build Alternative, a Six Lane At-Grade Arterial, a Six Lane Depressed Arterial with Retaining Walls and a Six Lane Depressed Arterial without Retaining Walls.

The regional travel model has since been updated and recalibrated in 2007 based on 2006 data. The model was updated by Parsons, based on population and housing data obtained from the Kern County Assessor, employment data from the California Department of Economic Development, and traffic count data from Kern Council of Governments (COG), Caltrans, the City of Bakersfield and the County of Kern. Compared to the previous model, the updated model contains a more detailed level of traffic analysis zones (TAZ) and a refined highway network. The previous model also assumed the extension of Oak Street across the Kern River; however, the crossing of the river has since been removed from the current traffic model.

24th Street Project Level of Service Summary Table

Study Intersections	Existing Conditions		Forecast Year 2035 No Build		Forecast Year 2035 With Project		Forecast Year 2015 No Build		Forecast Year 2015 With Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS
Camino Del Rio Ct/Rosedale Hwy (SR-58) [1]	17.3 – B	**54.3 – D**	31.6 – C	***> 80.0 – F***	30.8 – C	***67.0 – E***	28.6 – C	***72.6 – E***	**35.0 – D**	***73.5 – E***
SR-99 SB Ramps/Rosedale Hwy (SR-58) [1]	**38.4 – D**	**44.2 – D**	***> 80.0 – F***	***> 80.0 – F***	30.0 – C	***77.4 – E***	**49.3 – D**	***78.6 – E***	13.4 – B	13.4 – B
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue[1]	28.4 – C	**40.5 – D**	***59.6 – E***	***68.9 – E***	**39.4 – D**	**49.0 – D**	***65.2 – E***	**44.6 – D**	**38.7 – D**	**44.5 – D**
Buck Owens Blvd-SR-99 NB Ramps/24th St (SR-178)	**48.0 – D**	***> 80.0 – F***	***> 80.0 – F***	***> 80.0 – F***	22.4 – C	**36.7 – D**	***65.0 – E***	***> 80.0 – F***	22.7 – C	**41.0 – D**
Oak St/24th St (SR-178)	***59.8 – E***	***66.1 – E***	***> 80.0 – F***	***> 80.0 – F***	30.3 – C	**41.5 – D**	***> 80.0 – F***	***> 80.0 – F***	26.2 – C	29.4 – C
Oak Street/21st Street[1]	13.1 – B	17.9 – B	14.3 – B	21.3 – C	15.9 – B	21.3 – C	13.9 – B	18.1 – B	13.9 – B	17.9 – B
Oak Street/19th Street[1]	7.7 – A	10.5 – B	5.9 – A	10.3 – B	5.5 – A	11.5 – B	6.9 – A	9.8 – A	5.4 – A	10.1 – B
Oak Street/18th Street[1]	7.1 – A	8.3 – A	15.3 – B	15.4 – B	11.6 – B	13.9 – B	11.1 – B	10.3 – B	6.6 – A	9.4 – A
Oak Street/Truxtun Avenue[1]	**50.4 – D**	***76.0 – E***	***> 80.0 – F***	***> 80.0 – F***	**44.7 – D**	**54.0 – D**	**49.4 – D**	***78.1 – E***	**39.5 – D**	**55.0 – D**
Olive St/24th St (SR-178)[2]	20.0 – C	24.4 – C	***42.4 – E***	***39.8 – E***	15.8 – C	15.3 – C	**28.1 – D**	**33.9 – D**	13.6 – B	14.4 – B
Elm St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	21.4 – C	23.4 – C	***> 50.0 – F***	***> 50.0 – F***	17.0 – C	21.0 – C
Beech St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	**28.3 – D**	24.8 – C	***> 50.0 – F***	***> 50.0 – F***	20.2 – C	21.9 – C
Myrtle St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	23.9 – C	**28.4 – D**	***> 50.0 – F***	***> 50.0 – F***	20.8 – C	22.4 – C
Spruce St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	23.5 – C	**27.0 – D**	***> 50.0 – F***	***> 50.0 – F***	20.4 – C	21.5 – C
Pine St/24th St (SR-178)[2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	24.3 – C	**33.9 – D**	***> 50.0 – F***	***> 50.0 – F***	21.0 – C	**25.1 – D**
Cedar St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	22.8 – C	**26.3 – D**	***> 50.0 – F***	***> 50.0 – F***	19.9 – C	21.0 – C
Alder St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	23.1 – C	**27.2 – D**	***> 50.0 – F***	***> 50.0 – F***	20.1 – C	21.5 – C
B St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	21.9 – C	20.4 – C	***> 50.0 – F***	***> 50.0 – F***	17.2 – C	18.7 – C
C St/24th St (SR-178) [2,3]	20.1 – C	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	16.6 – C	***> 50.0 – F***	**31.1 – D**	***> 50.0 – F***	14.5 – B	***> 50.0 – F***
D St/24th St (SR-178) [2,3]	24.9 – C	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***44.8 – E***	***> 50.0 – F***
E St/24th St (SR-178) [2,3]	24.5 – C	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***38.2 – E***	***> 50.0 – F***	***> 50.0 – F***	***43.2 – E***	**30.9 – D**
F St/24th St (SR-178)	11.6 – B	30.4 – C	***63.2 – E***	***56.5 – E***	26.0 – C	25.9 – C	14.7 – B	17.1 – B	11.5 – B	15.1 – B
G St/24th St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
H St/24th St (SR-178)	6.5 – A	10.8 – B	***65.4 – E***	30.1 – C	4.2 – A	6.6 – A	7.0 – A	15.9 – B	4.7 – A	8.3 – A
Eye St/24th St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
Chester St/24th St (SR-178)	11.3 – B	19.4 – B	***> 80.0 – F***	***59.0 – E***	25.3 – C	34.4 – C	**51.3 – D**	**42.6 – D**	13.8 – B	26.9 – C
K St/24th St (SR-178) [2,3]	**45.0 – E**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
L St/24th St (SR-178)[4,5]	4.8 – A	9.8 – A	**38.5 – D**	12.0 – B	2.9 – A	4.3 – A	12.1 – B	10.8 – B	2.0 – A	3.9 – A
M St/24th St (SR-178)[5]	24.6 – C	16.5 – B	***> 80.0 – F***	***41.0 – D***	17.2 – B	17.0 – B	***> 80.0 – F***	25.9 – C	16.0 – B	16.2 – B
D St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**47.4 – E**	***> 50.0 – F***	***> 50.0 – F***	16.9 – C	18.7 – C	***> 50.0 – F***	***> 50.0 – F***	15.4 – C	16.0 – C
E St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
F St/23rd St (SR-178)	29.7 – C	29.0 – C	***> 80.0 – F***	***> 80.0 – F***	34.4 – C	***58.7 – E***	**45.5 – D**	***> 80.0 – F***	18.3 – B	22.2 – C
G St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**47.1 – E**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
H St/23rd St (SR-178)	10.0 – B	16.6 – B	***72.4 – E***	***> 80.0 – F***	23.0 – C	21.6 – C	16.6 – B	**51.2 – D**	11.6 – B	15.0 – B
Eye St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
Chester St/23rd St (SR-178)	18.2 – B	19.3 – B	***> 80.0 – F***	***> 80.0 – F***	24.2 – C	32.6 – C	**44.2 – D**	***> 80.0 – F***	9.0 – A	16.2 – B
K St/23rd St (SR-178) [2,3]	**> 50.0 – F**	**> 50.0 – F**	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
L St/23rd St (SR-178)	10.3 – B	8.7 – A	29.2 – C	**> 80.0 – F**	9.0 – A	11.6 – B	10.0 – B	**38.3 – D**	9.7 – A	7.7 – A
M St/23rd St (SR-178)	13.1 – B	15.8 – B	30.6 – C	**> 80.0 – F**	4.1 – A	9.8 – A	11.8 – B	***79.5 – E***	5.3 – A	7.0 – A

Note: SB = southbound, NB = northbound. Delay shown in seconds; deficient intersection operation shown in **bold**.

1 = Delay results may change when comparing No Build to Build conditions where no geometric changes occur due to optimized traffic signal timing and phasing.

2 = LOS and delay for stop-controlled intersections are based worst case minor street approach.

3 = LOS analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.

4 = Counts at L Street/24th Street collected before intersection signalized in August 2009.

5 = Operation may be affected by queue spillback from downstream intersection.

LOS D LOS E or F

When accounting for land use and circulation changes incorporated into the regional travel model, the traffic volumes forecast on SR-178 in the project vicinity have lessened, however widening SR-178 between Elm Street and D Street from four lanes to consist of six lanes remains needed to reduce forecast traffic congestion.

This report summarizes existing and future conditions level of service (LOS) along the 24th Street Corridor in the City of Bakersfield. This analysis provides a review of baseline existing conditions, near-term and long range analysis of the 24th Street Corridor with and without the 24th Street Improvement Project. The City of Bakersfield (City), in cooperation with the California Department of Transportation (Caltrans), proposes to construct arterial widening and intersection/interchange improvements on State Route (SR-58) west of State Route 99 (SR-99), and on State Route 178 (SR-178) east of SR-99. This stretch of road is collectively referred to as 24th Street. Improvements are proposed on 24th Street from the southbound SR-99 off-ramp intersection to 0.2 miles (mi) east of M Street, for a distance of approximately 2.1 miles (mi), and on SR-99 northbound from 1,500 ft south of and to the Kern River Bridge in the City of Bakersfield (City), Kern County (County), California. 24th Street east of SR-99 is designated SR-178, and west of SR-99 is designated SR-58.

Project Background

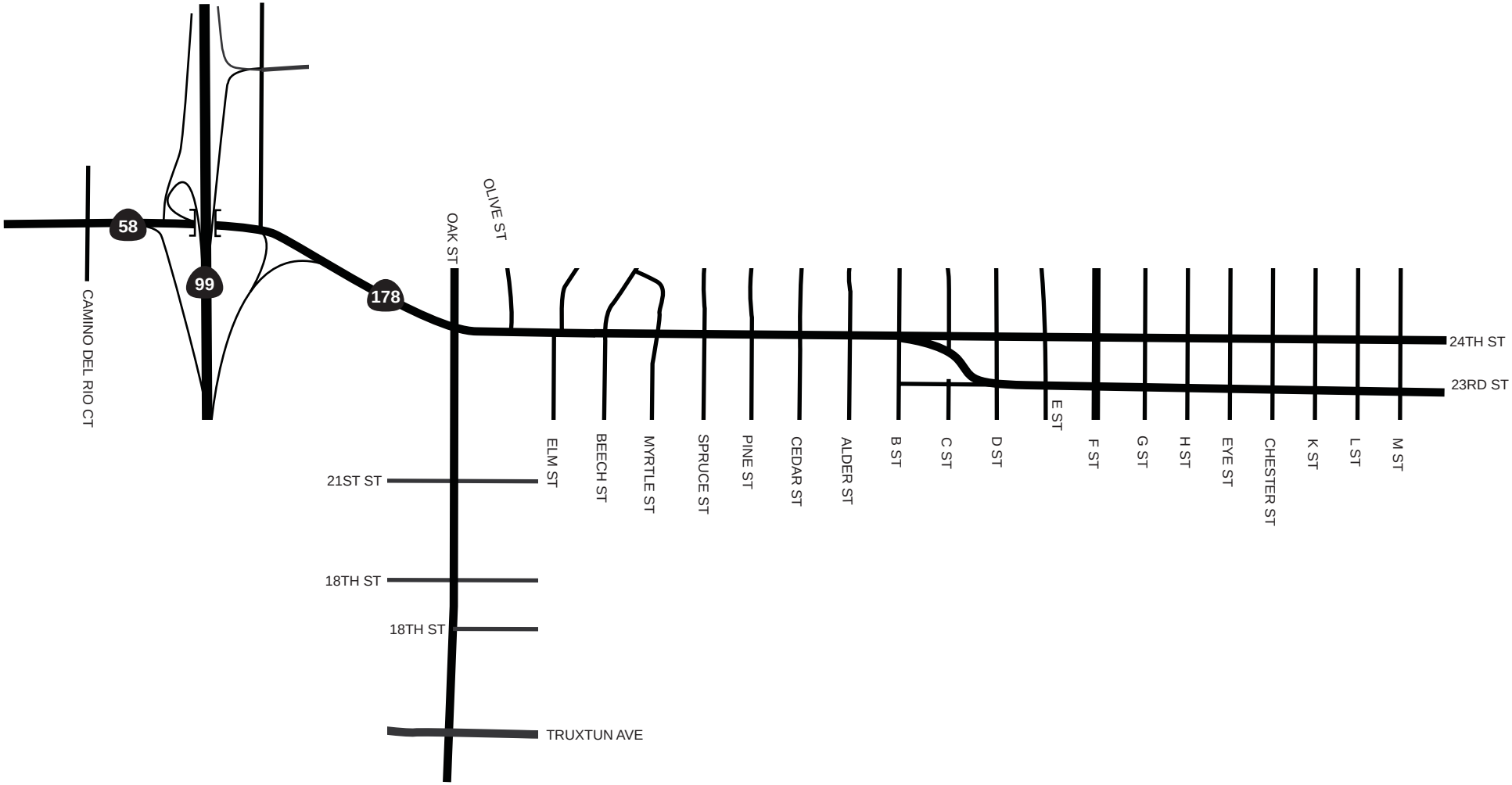
The City of Bakersfield proposes improvements to 24th Street from the southbound SR-99 off-ramp intersection to 0.2 miles east of M Street. For design purposes the improvements to 24th Street have been categorized into the following four segments:

- Segment A – Oak Street/24th Street intersection improvements;
- Segment B – 24th Street widening from Oak Street to the 24th Street/23rd Street couplet
- Segment C – 24th Street/23rd Street couplet widening to Union Street; and
- Segment D – SR-99/24th Street interchange improvements.

The project location is shown in Exhibit 1.

Potential improvements to the 24th Street Corridor were initially studied in 1985, and updated by a 1996 Major Investment Study. In 1999 a systems study was prepared, and a project study report (PSR) was completed for the area around the 24th Street/Oak Street intersection. Initially Oak Street was planned to be extended over the Kern River, but a downsizing of planned land use north of the river has lessened the need for a bridge over the Kern River. Key studies related to potential improvements of the 24th Street Corridor include the following:

- 1986 Route 178 Corridor Study (Barton Aschman Associates, Inc., Dec 1986);
- 1990 Route 178 Freeway Feasibility Report, Southern Alignment Alternative (Barton Aschman Associates, Inc., Jan 1990);
- 1997 Metro Bakersfield Investment Strategy, Moving Forward (Barton Aschman Associates, Inc Dec., 1997);
- 2002 Metropolitan Bakersfield Transportation Systems Study, Kern COG (URS, Dec 2002);



Not to Scale

RBF

Project Study Area

Exhibit 1

- 2005 Project Study Report for Interchange at Oak Street/24th Street and Project Study Report for Widening of 24th Street (Caltrans, Jun 2005); and
- 2005 Caltrans Transportation Concept Report (Caltrans, Jun 2005).

24th Street improvements are sponsored and supported by the City of Bakersfield. Kern COG and the County of Kern are both active proponents of the project, and Caltrans District 6 has been a continuous partner in the development of the project.

Study Area & Analysis Scenarios

The following thirty-nine (39) intersections along 24th Street and 23rd Street are contained in this analysis:

1. Camino Del Rio Court/Rosedale Highway (SR-58);
2. SR-99 Southbound Ramps/Rosedale Highway (SR-58);
3. Buck Owens Boulevard/SR-99 Northbound Ramps-Sillect Avenue;
4. Buck Owens Boulevard-SR-99 Northbound Ramps/24th Street (SR-178);
5. Oak Street/24th Street (SR-178);
6. Oak Street/21st Street;
7. Oak Street/19th Street;
8. Oak Street/18th Street;
9. Oak Street/Truxtun Avenue;
10. Olive Street/24th Street (SR-178);
11. Elm Street/24th Street (SR-178);
12. Beech Street/24th Street (SR-178);
13. Myrtle Street/24th Street (SR-178);
14. Spruce Street/24th Street (SR-178);
15. Pine Street/24th Street (SR-178);
16. Cedar Street/24th Street (SR-178);
17. Alder Street/24th Street (SR-178);
18. B Street/24th Street (SR-178);
19. C Street/24th Street (SR-178);
20. D Street/24th Street (SR-178);
21. E Street/24th Street (SR-178);
22. F Street/24th Street (SR-178);
23. G Street/24th Street (SR-178);
24. H Street/24th Street (SR-178);
25. Eye Street/24th Street (SR-178);
26. Chester Avenue/24th Street (SR-178);
27. K Street/24th Street (SR-178);
28. L Street/24th Street (SR-178);
29. M Street/24th Street (SR-178);
30. D Street/23rd Street (SR-178);
31. E Street/23rd Street (SR-178);
32. F Street/23rd Street (SR-178);
33. G Street/23rd Street (SR-178);
34. H Street/23rd Street (SR-178);
35. Eye Street/23rd Street (SR-178);
36. Chester Avenue/23rd Street (SR-178);
37. K Street/23rd Street (SR-178);

38. L Street/23rd Street (SR-178); and
39. M Street/23rd Street (SR-178).

Due to the length of the Corridor where intersections are analyzed, this traffic study groups intersections into three areas:

- Area 1 – 24th Street between Camino Del Rio Court and Oak Street;
- Area 2 – 24th Street between Olive Street and B Street; and
- Area 3 – 23rd Street and 24th Street couplet with one-way east-west roadways between C Street and M Street.

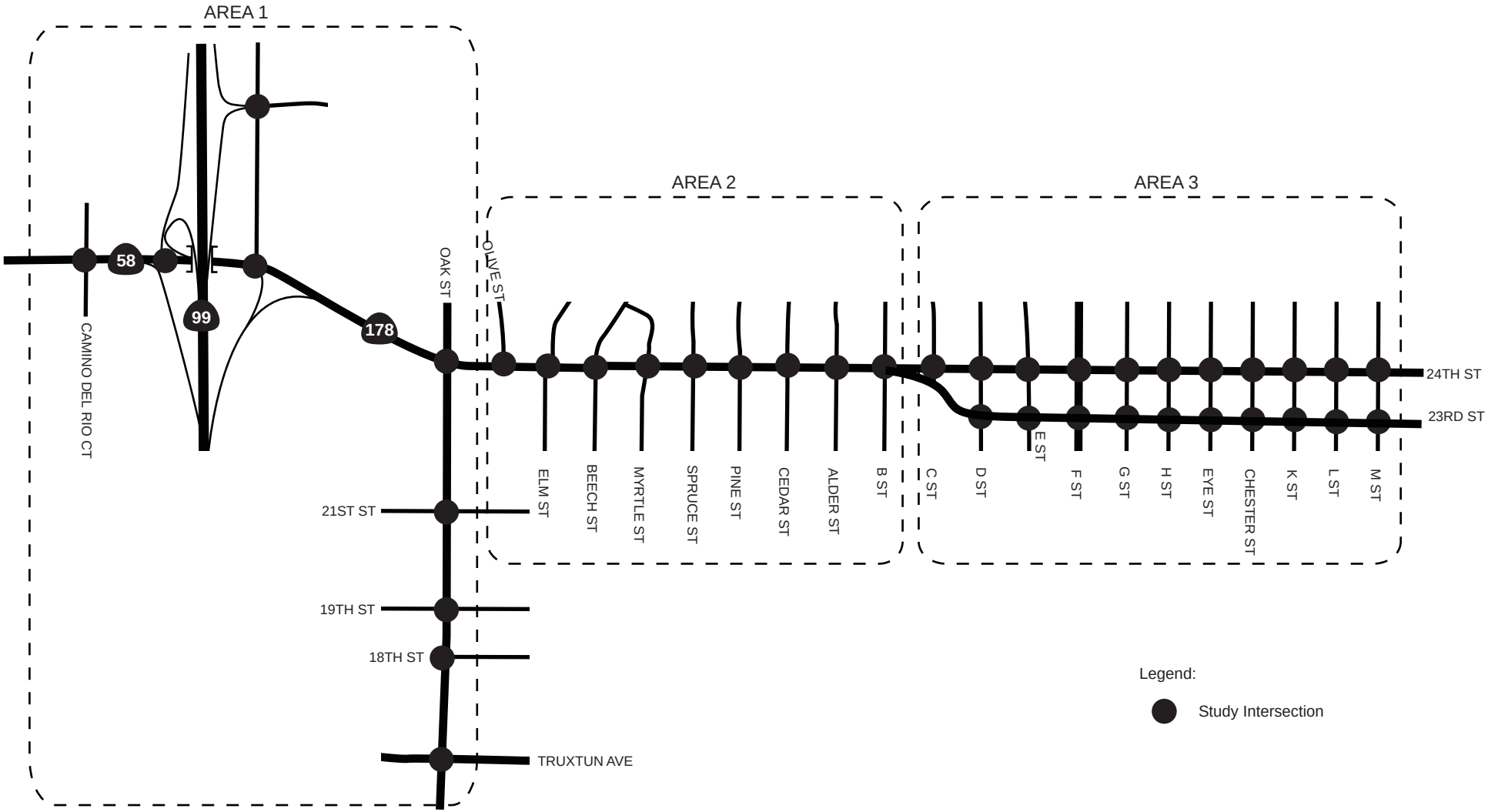
Traffic operations along 24th Street/23rd Street are governed by signalized intersections on the west (Area 1) and on the east (Area 2). Exhibit 2 shows the location of the study intersections, including areas 1, 2, and 3 utilized in graphics to present information at the thirty-nine study intersections.

Traffic analysis has been prepared for SR-99 mainline freeway in the project vicinity. For consistency with concurrent traffic analyses under preparation in the Bakersfield area, the SR-99 analysis has been provided by TRIP staff. The following segments have been analyzed:

- Northbound SR-99 between California Avenue On-Ramp and Rosedale Highway Off-Ramp;
- Northbound SR-99 between Buck Owens Boulevard On-Ramp and Airport Drive Off-Ramp;
- Southbound SR-99 between Airport Drive On-Ramp and Rosedale Highway Off-Ramp; and
- Southbound SR-99 between Rosedale Highway On-Ramp and California Avenue Off-Ramp.

Traffic analysis has been prepared for SR-99 ramps in the project vicinity. For consistency with concurrent traffic analyses under preparation in the Bakersfield area, the SR-99 ramp analysis has been provided by TRIP staff. The following ramps have been analyzed:

- Northbound SR-99 Off-Ramp to 24th Street (diverge);
- Northbound SR-99 Off-Ramp to Buck Owens Boulevard (diverge);
- Northbound SR-99 On-Ramp from Buck Owens Boulevard (merge);
- Southbound SR-99 Off-Ramp to Rosedale Highway (diverge);
- Southbound SR-99 Loop On-Ramp from Rosedale Highway (merge); and
- Southbound SR-99 Direct On-Ramp from Rosedale Highway (merge).



Not to Scale

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Study Intersection Locations

Exhibit 2

Environmental review of the 24th Street project includes two alternatives in the Westchester neighborhood; widening to the north, and widening to the south. Since the two widening alternatives do not substantially vary intersection or roadway traffic analysis, this study considers implementation of one "Build" scenario. Therefore, "With Project" analysis included in this report applies to both 24th Street widening alternatives under consideration. Consistent with *TRIP Traffic Analysis Guidelines (July 2, 2007)*, the following scenarios are analyzed:

- Existing Conditions;
- Forecast Year 2035 No Build Conditions;
- Forecast Year 2035 With Project Conditions;
- Forecast Year 2015 No Build Conditions; and
- Forecast Year 2015 With Project Conditions.

Forecast year 2035 conditions provide the basis for ultimate intersection/roadway design, while forecast year 2015 conditions analysis is provided to show interim conditions operations without governing geometric design.

The study intersections are evaluated for the following two time periods:

- Weekday a.m. 1-hour volumes from 7:00 a.m. to 8:00 a.m.; and
- Weekday p.m. 1-hour volumes from 4:00 p.m. to 5:00 p.m.

A uniform hour of analysis is prepared during the a.m. peak period and p.m. peak period based on discussions with City staff and to provide better balancing between study intersections.

Analysis Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the type of traffic control and experienced delay at the intersection. The *2000 Highway Capacity Manual (HCM)* analysis methodology for *Signalized Intersections* and *Unsignalized Intersections* is utilized in this analysis to determine the operating LOS of the study intersections.

The *2000 HCM* analysis methodology describes the operation of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding average stopped delay per vehicle for signalized and unsignalized intersections shown in Table 1.

Table 1
LOS & Delay Ranges

LOS	Delay (in seconds)	
	Signalized Intersections	**Unsignalized Intersections**
A	≤ 10.0	≤ 10.0
B	10.0 to ≤ 20.0	10.0 to ≤ 15.0
C	20.0 to ≤ 35.0	15.0 to ≤ 25.0
D	35.0 to ≤ 55.0	25.0 to ≤ 35.0
E	55.0 to ≤ 80.0	35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, *Highway Capacity Manual*, HCM2000 Edition (Washington D.C., 2000).

Level of service is based on the average stopped delay per vehicle for all movements of signalized intersections and all-way stop-controlled intersections; for one-way or two-way stop-controlled intersections, LOS is based on the worst stop-controlled approach.

The *2000 HCM* analysis methodology for *Multilane Highway* was considered for analysis of 24th Street between Olive Street and B Street (Area 2). Since 24th Street between Olive Street and B Street is 0.5 miles long, this segment is too short in length for the *HCM Multilane Highway* analysis methodology to apply.

The *2000 HCM* analysis methodology is utilized to analyze the operation of freeway segments. *HCM* analysis methodology describes the operation of a basic freeway segment using a range of LOS from LOS A to LOS F based on corresponding density (passenger cars/mile/lane) shown in Table 2.

Table 2
Freeway Segments LOS & Density Ranges

LOS	Density (pc/mi/ln)
A	≤ 10
B	> 11 ≤ 18
C	> 18 ≤ 26
D	> 26 ≤ 35
E	> 35 ≤ 45
F	> 45

Source: 2000 Highway Capacity Manual.
Note: pc/mi/ln = passenger cars per mile per lane.

The *2000 HCM* analysis methodology is utilized to analyze the operation of the freeway ramps merge and diverge locations, which evaluates ramp density (passenger cars/mile/lane) and identifies corresponding LOS. Table 3 summarizes the ramp density ranges and corresponding level of service.

Table 3
Ramp Merge/Diverge LOS & Delay Ranges

LOS	Density (pc/mi/ln)
A	≤10
B	> 10 ≤ 20
C	> 20 ≤ 28
D	> 28 ≤ 35
E	> 35
F	Demand Exceeds Capacity

Source: 2000 Highway Capacity Manual.
Note: pc/mi/ln = passenger cars per mile per lane.

Performance Criteria

The City of Bakersfield goal for peak hour intersection operation is LOS C or better.

As indicated in the *Caltrans Guide for the Preparation of Traffic Impact Studies (December 2002),* Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D. Therefore, a significant project impact occurs at a State Highway study facility when the addition of project-generated trips causes the peak hour level of service of the study intersection to change from acceptable operation (LOS A, B, or C) to deficient operation (LOS D, E, or F).

EXISTING CONDITIONS

Land Use and Demographic Conditions

The 8,200 square mile Kern County is the thirteenth most populated of California's 58 counties, with a population of over 800,000 in 2009. Between the 2000 US census and 2009, the population of Kern County grew by approximately 25 percent, and is one of the fastest growing counties in California. Table 4 shows estimated population and housing data for Kern County and its incorporated cities from 1980 to 2009.

Table 4
Population Growth in Kern County and Incorporated Cities, 1980-2009

		1980	1990	2000	2009
Kern County	Population	403,089	543,477	661,653	827,173
	Households	139,881	181,480	208,655	252,216
Arvin	Population	6,863	9,286	12,956	16,675
	Households	1,946	2,385	3,010	3,751
Bakersfield	Population	105,611	174,820	246,899	333,719
	Households	39,602	62,516	83,445	109,449
California City	Population	2,743	5,955	8,385	14,828
	Households	990	2,119	3,067	4,351
Delano	Population	16,491	22,762	39,499	53,972
	Households	4,912	6,236	8,411	10,366
Maricopa	Population	946	1,193	1,111	1,140
	Households	338	416	404	405
McFarland	Population	5,151	7,005	9,835	13,559
	Households	1,399	1,685	1,989	2,734
Ridgecrest	Population	15,929	28,295	24,927	28,353
	Households	5,762	10,349	9,826	10,932
Shafter	Population	7,010	8,409	12,731	15,812
	Households	2,284	2,558	3,292	4,000
Taft	Population	5,316	5,902	8,811	9,117
	Households	2,096	2,209	2,233	2,289
Tehachapi	Population	4,126	5,791	11,125	13,631
	Households	1,534	2,335	2,533	3,213
Wasco	Population	9,613	12,412	21,263	25,434
	Households	3,001	3m471	3,971	4,882
Unincorporated	Population	223,290	261,647	264,111	300,933
	Households	75,947	85,201	86,474	95,844

Source: *State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2000.* State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

In the past 10 years, growth in Kern County has been concentrated in metropolitan Bakersfield and the communities of Rosamond, greater Tehachapi and Frazier Park. The communities of California City, Delano, McFarland, Taft and Wasco experienced noticeable population growth due to the prison construction. Delano's population exceeded that of Ridgecrest in the 2000 census, making it the second largest city in the county.

In metropolitan Bakersfield, approximately 80 percent of new housing has been built on the west side of the city, split evenly north and south of the Kern River. The northeast sector has begun to see housing activity since completion of a new water delivery system.

The California Department of Finance estimates the population of Kern County grew by over 150,000 people between April 2000 and January 2009, a compounded annual rate of approximately 2.6 percent; a full percentage point higher than the rate of 1.6 percent for California as a whole. During the past decade the population of Kern County has increased, on average, by 19,000 people a year, which exceeded the annual growth rate of 12,000 people annually during the 1990s.

Table 5 shows the yearly increase in the estimated population for Kern County and the City of Bakersfield between 2000 and 2009. Growth in the City of Bakersfield ranged between 1.1 and 5.2 percent per year, while overall County growth ranged between 1.2 and 3.2 percent.

Table 5
Population Increase in Bakersfield and Kern County, 2000-2009

Increase	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Kern County	661,653	673,571	690,429	709,823	732,390	755,519	779,490	801,648	817,517	827,173
Population Change		11,918	16,858	19,394	22.567	23,129	23,971	22,158	15,869	9,656
Percent Change		1.8%	2.5%	2.8%	3.2%	3.2%	3.2%	2.8%	2.0%	1.2%
Bakersfield	246,899	249,619	258,659	269,146	282,182	296,846	312,087	323,213	328,692	333,719
Population Change		2,720	9,040	10,487	13,036	14,664	15,241	11,126	5,479	5,027
Percent Change		1.1%	3.6%	4.1%	4.8%	5.2%	5.1%	3.6%	1.7%	1.5%

Source: *State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2000.*

Between 1990 and 2003, construction or expansion of eight federal, sate and privately operated prison facilities in the outlying communities of Delano, California City, McFarland, Shafter, Taft, Tehachapi and Wasco was responsible for 11 percent of the County's population growth and increased the percentage of County residents living in group quarters from 3 percent to 5 percent of the total County population. Even accounting for the group quarters growth in outlying communities, growth in the Bakersfield planning area continues to outpace total county population growth.

Table 6 shows the number of housing units in Kern County and the City of Bakersfield.

Table 6
Housing Units in Kern County and Bakersfield

Date	Kern County	Bakersfield
4/1/2000	231,567	88,266
1/1/2001	234,059	88,271
1/1/2002	237,650	91,203
1/1/2003	242,231	94,175
1/1/2004	247,918	98,043
1/1/2005	254,415	102,584
1/1/2006	262,932	108,242
1/1/2007	270,620	112,106
1/1/2008	276,607	114,187
1/1/2009	279,769	115,775

Source: State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

Between 2000 and 2009, 48 thousand housing units were built in Kern County bringing the County's housing stock to 279,769 units, with an increase in vacancy rate from 8.6 to 9.9 percent during this time. Population growth in the County has been exceeding household growth, and the average person per occupied dwelling unit has increased from 2.92 in 1990 to 3.28 in 2009. This contrasts with the decade-to-decade drop in household size experienced by the nation overall.

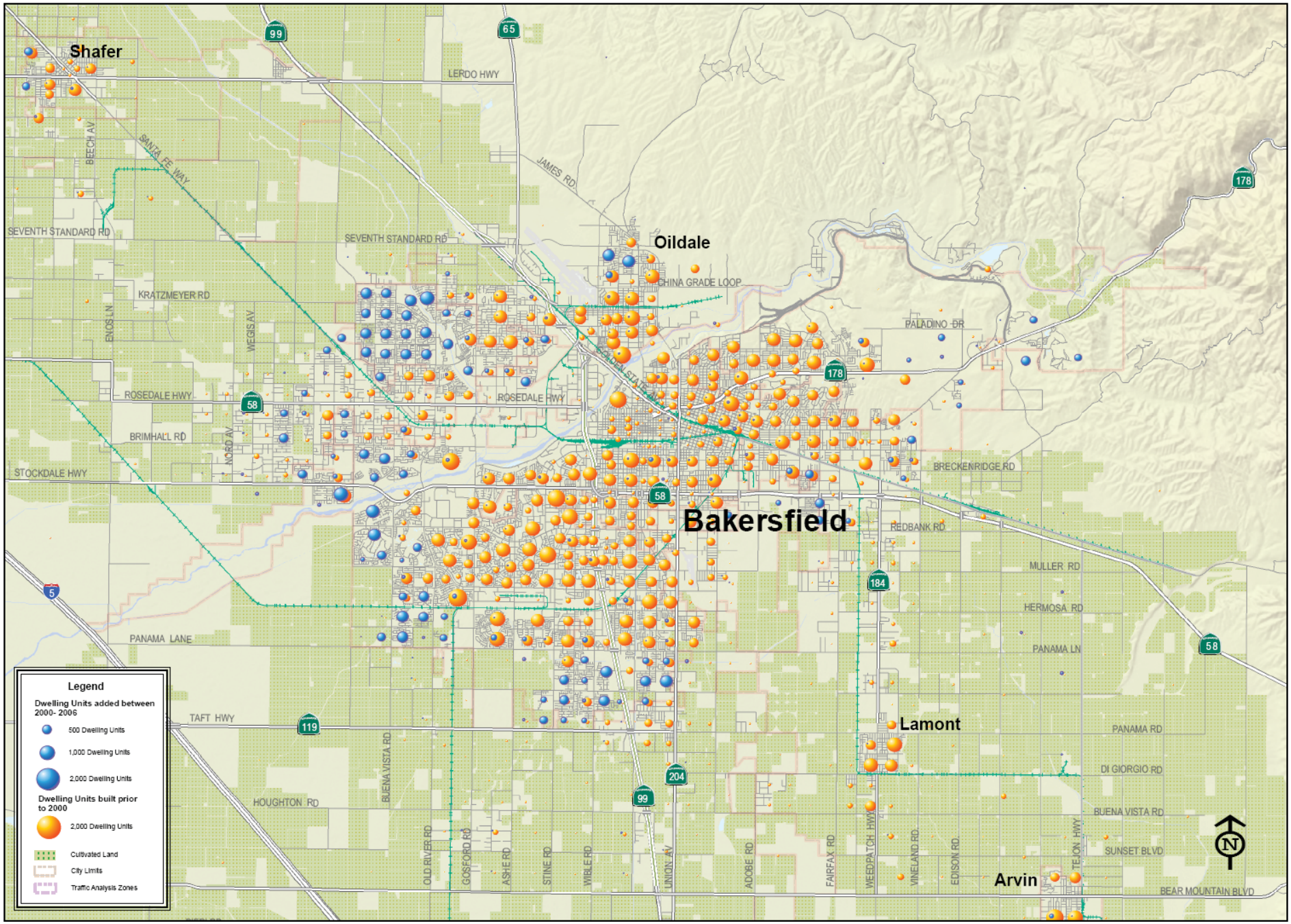
Existing land use in the Metropolitan Bakersfield area is characterized by sprawling, single-family residential development with dispersed employment opportunities throughout the area. This auto-oriented land use pattern encourages vehicle-based trips and longer trip lengths for all types of trips since residents typically do not live within walking distance to shopping, entertainment and recreational land uses.

Exhibit 3 shows the location of dwelling units in the metropolitan Bakersfield area. The blue and green dots represent dwelling units per traffic analysis zone (TAZ). Orange dots represent dwelling units built before December 1999, while the blue dots in the western and southern areas show new residential construction since January 2000. As shown in Exhibit 3, the density of dwelling units is generally consistent throughout the metropolitan area. Exhibit 4 shows the location of employment in the region in 2006.

Roadway Facilities

The characteristics of the roadway system in the vicinity of the project site are described below:

SR-99 provides regional access traversing most of the Central Valley in a north-south orientation. SR-99 originates northerly at Interstate 5 (I-5) in the City of Red Bluff and terminates at I-5 southerly of the City of Bakersfield. In the project study area, SR-99 is constructed as an eight-lane freeway facility with an interchange at 24th Street.

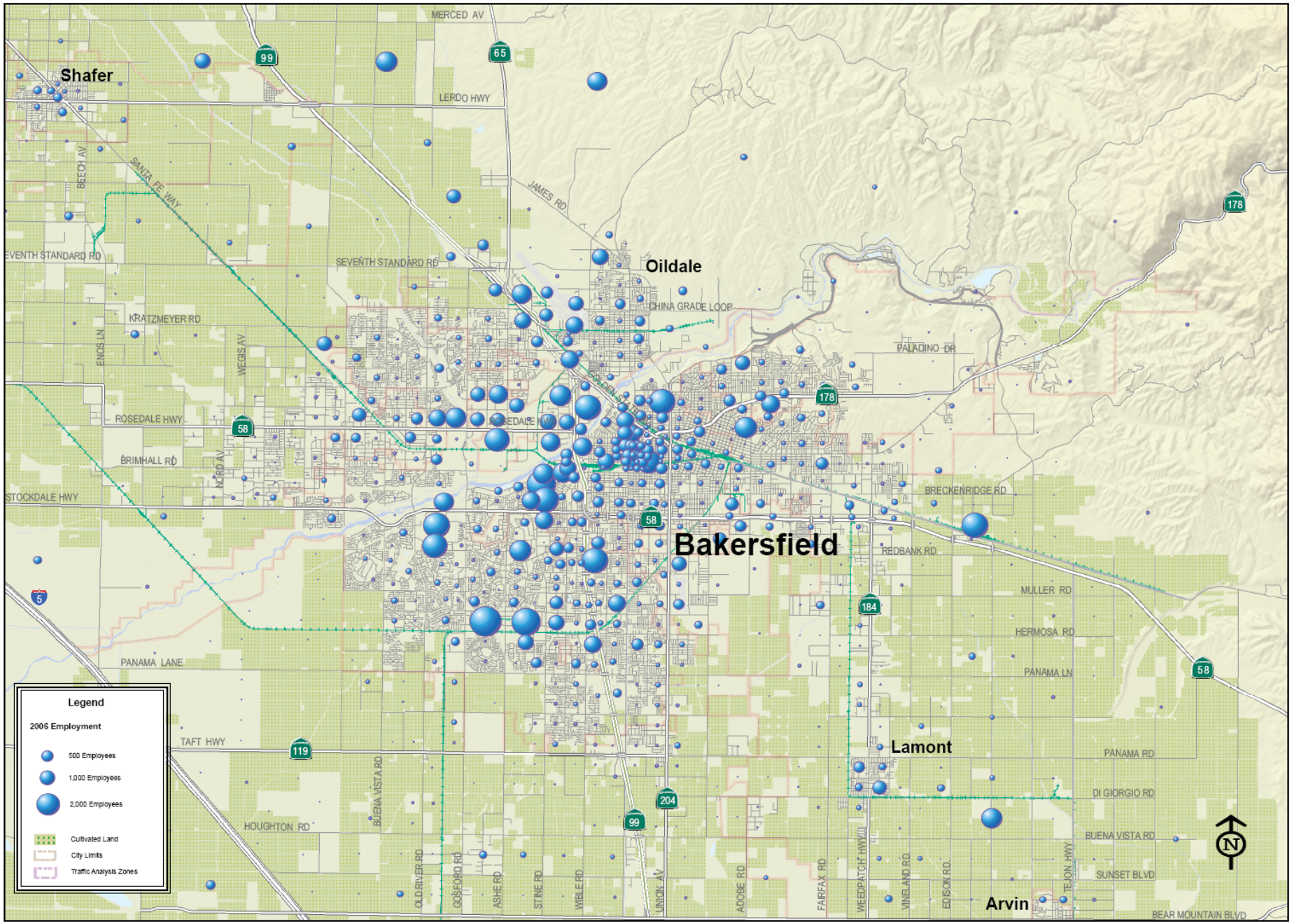


Source: PARSONS

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Existing Distribution of Dwelling Units in Metropolitan Bakersfield

Exhibit 3



Source: PARSONS

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Existing Distribution of Employment in Metropolitan Bakersfield

Exhibit 4

24th Street (SR-178) is a four-lane divided roadway trending in an east-west direction between Oak Street and B Street. Between B Street and the SR-178 freeway to the west, 24th Street is the westbound portion of the 24th Street/23rd Street couplet with three-lanes in the westbound direction. The posted speed limit on 24th Street is 40 miles per hour in the vicinity of Oak Street, and 35 miles per hour in the couplet. On-street parking is permitted in the couplet area.

23rd Street is a two-lane undivided roadway trending in an east-west direction between B Street and D Street. Between D Street and the SR-178 freeway to the east, 23rd Street is the eastbound portion of the 24th Street/23rd Street couplet with three-lanes in the eastbound direction. The posted speed limit on 23rd Street is 35 miles per hour in the couplet. On-street parking is permitted in the couplet area.

Camino Del Rio Court is a two-lane undivided roadway trending in a north-south direction. On-street parking is prohibited on Camino Del Rio Court in the study area. The posted speed limit on Camino Del Rio Court is 25 miles per hour.

Oak Street is a four-lane divided roadway trending in a north-south direction. On-street parking is prohibited on Oak Street in the study area. The posted speed limit on Oak Street is 40 miles per hour.

Olive Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Olive Street in the study area.

Elm Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Elm Street in the study area. The posted speed limit on Elm Street is 25 miles per hour.

Beech Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Beech Street in the study area. The posted speed limit on Beech Street is 25 miles per hour.

Myrtle Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Myrtle Street in the study area. The posted speed limit on Myrtle Street is 25 miles per hour.

Spruce Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Spruce Street in the study area.

Pine Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Pine Street in the study area.

Cedar Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Cedar Street in the study area. The posted speed limit on Cedar Street is 25 miles per hour.

A Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on A Street in the study area.

B Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on B Street in the study area.

C Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on C Street in the study area.

D Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on D Street in the study area.

E Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on E Street in the study area.

F Street is a four-lane divided roadway trending in a north-south direction. On-street parking is prohibited on F Street in the study area. The posted speed limit on F Street is 35 miles per hour north of 24th Street and 25 miles per hour south of 24th Street.

G Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on G Street in the study area.

H Street is a four-lane undivided roadway trending in a north-south direction. On-street parking is permitted on H Street in the study area. The posted speed limit on H Street is 35 miles per hour.

Eye Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on Eye Street in the study area.

Chester Street is a four-lane divided roadway trending in a north-south direction. On-street parking is permitted on Chester Street in the study area. The posted speed limit on Chester Street is 35 miles per hour.

K Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on K Street in the study area.

L Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on L Street in the study area. Between 24th Street and 23rd Street, L Street is a three-lane undivided roadway with two-lanes in the southbound direction and one lane in the northbound direction.

M Street is a two-lane undivided roadway trending in a north-south direction. On-street parking is permitted on M Street in the study area. The posted speed limit on M Street is 25 miles per hour.

Existing Traffic Volumes

To determine the existing operation of the study intersections, weekday a.m. peak period and weekday p.m. peak period intersection movement counts were collected in December 2007 and February 2008 while local schools were in session.

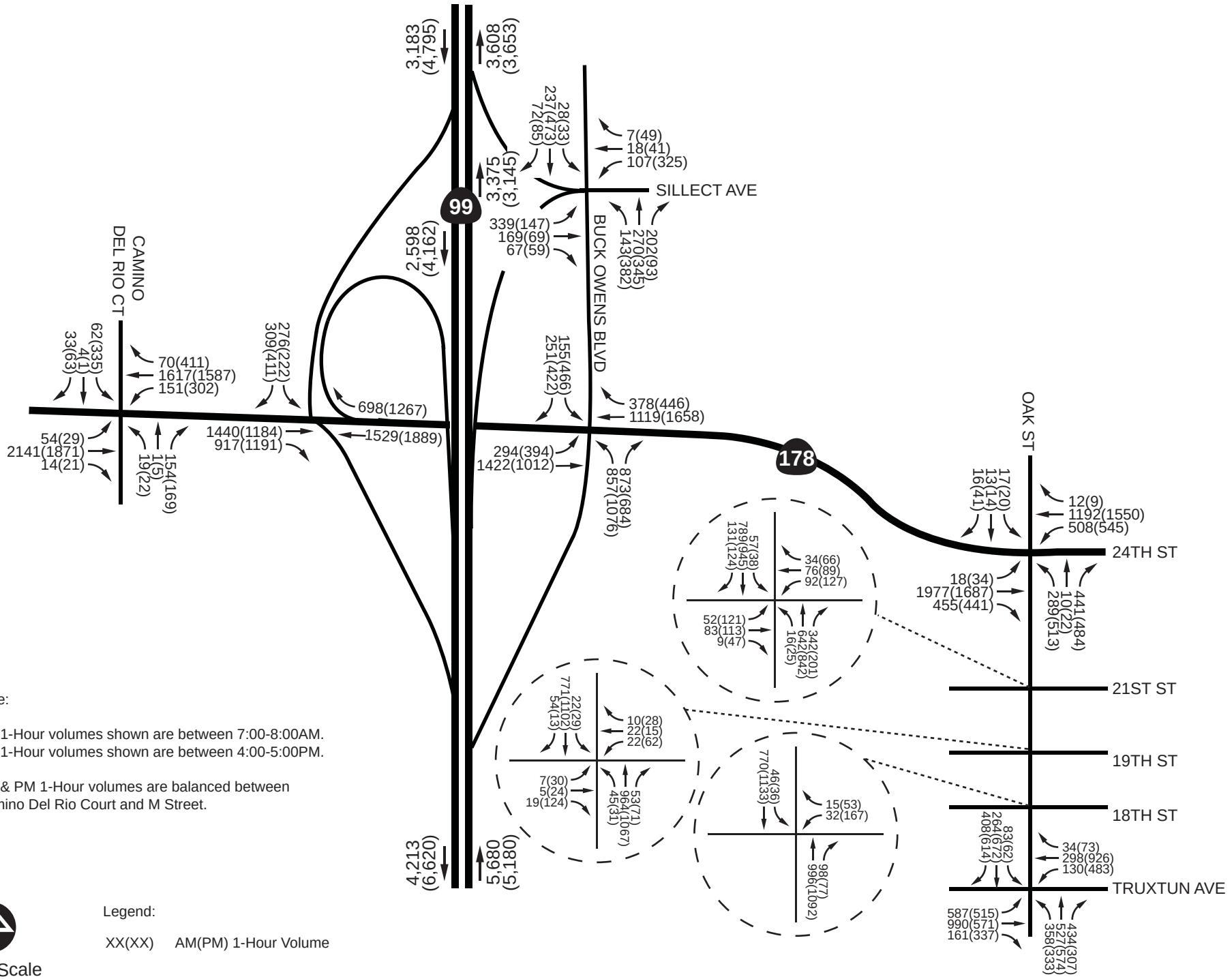
Weekday a.m. peak period intersection counts were collected from 7:00 a.m. to 9:00 a.m. and weekday p.m. peak period intersection counts were collected from 3:00 p.m. to 6:00 p.m. Based on City staff direction, the traffic volumes used in this analysis are 7:00 a.m. to 8:00 a.m. and 4:00 p.m. to 5:00 p.m. Detailed traffic count data is contained in Appendix A. The existing counts were balanced to allow approach volumes to equal departure volumes at roadway links and intersections. Detailed field observations of existing conditions geometry and operations is

contained in Appendix B. Study intersection traffic signal timing data provided by agency staff is contained in Appendix C.

Exhibits 5, 6 and 7 show existing conditions a.m. peak hour and p.m. peak hour volumes at the study intersections. Exhibits 8, 9 and 10 show existing conditions study area intersection geometry. Existing conditions intersection geometry and analysis accounts for the newly installed traffic signal at the L Street/24th Street intersection that went into operation on August 12, 2009.

Existing Conditions Traffic Operational Analysis

Table 7 summarizes existing conditions a.m. and p.m. 1-hour LOS of the study intersections; detailed HCM analysis sheets are contained in Appendix D.



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

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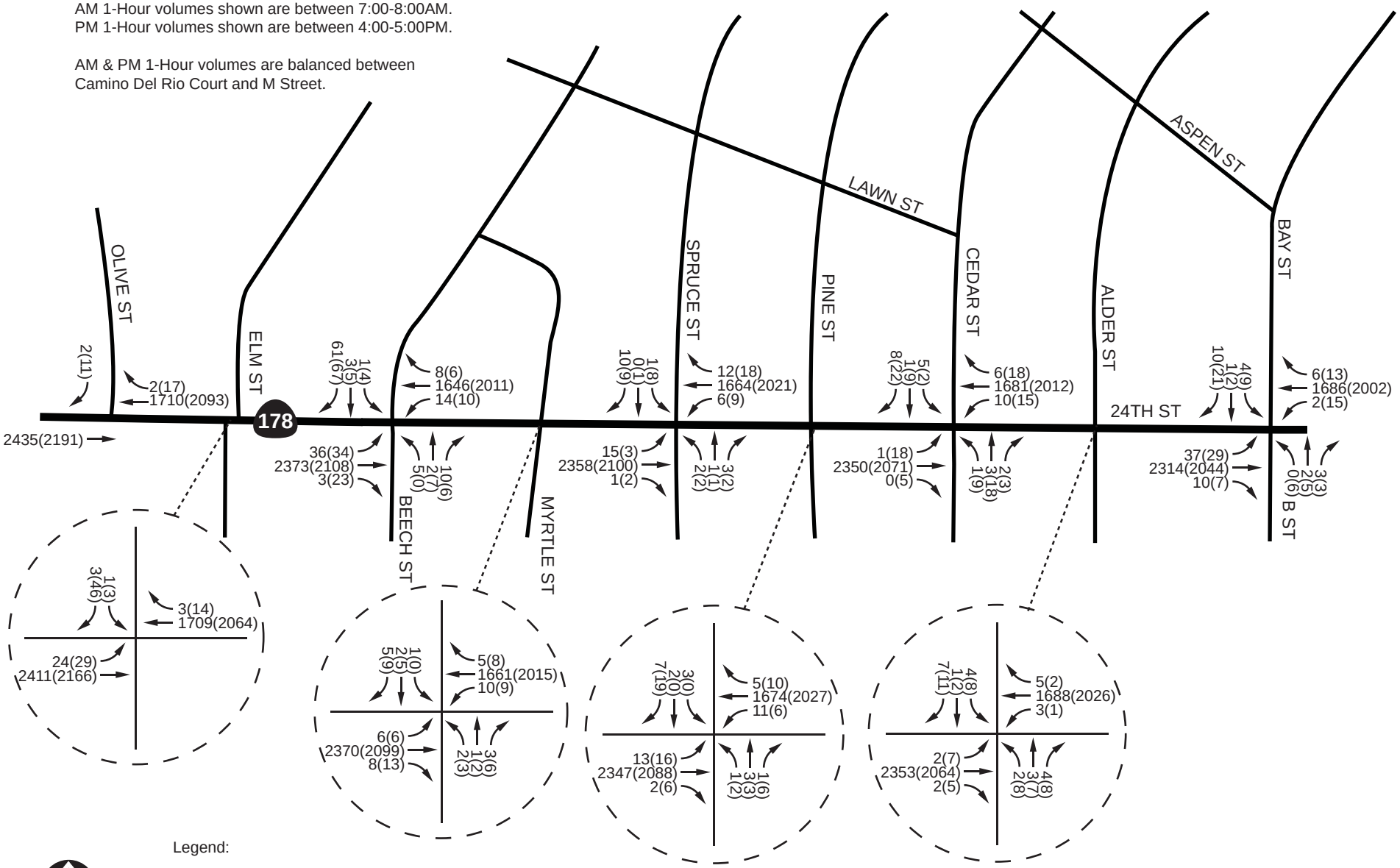
Existing 24th Street Volumes - Area 1

Exhibit 5

Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.



Legend:

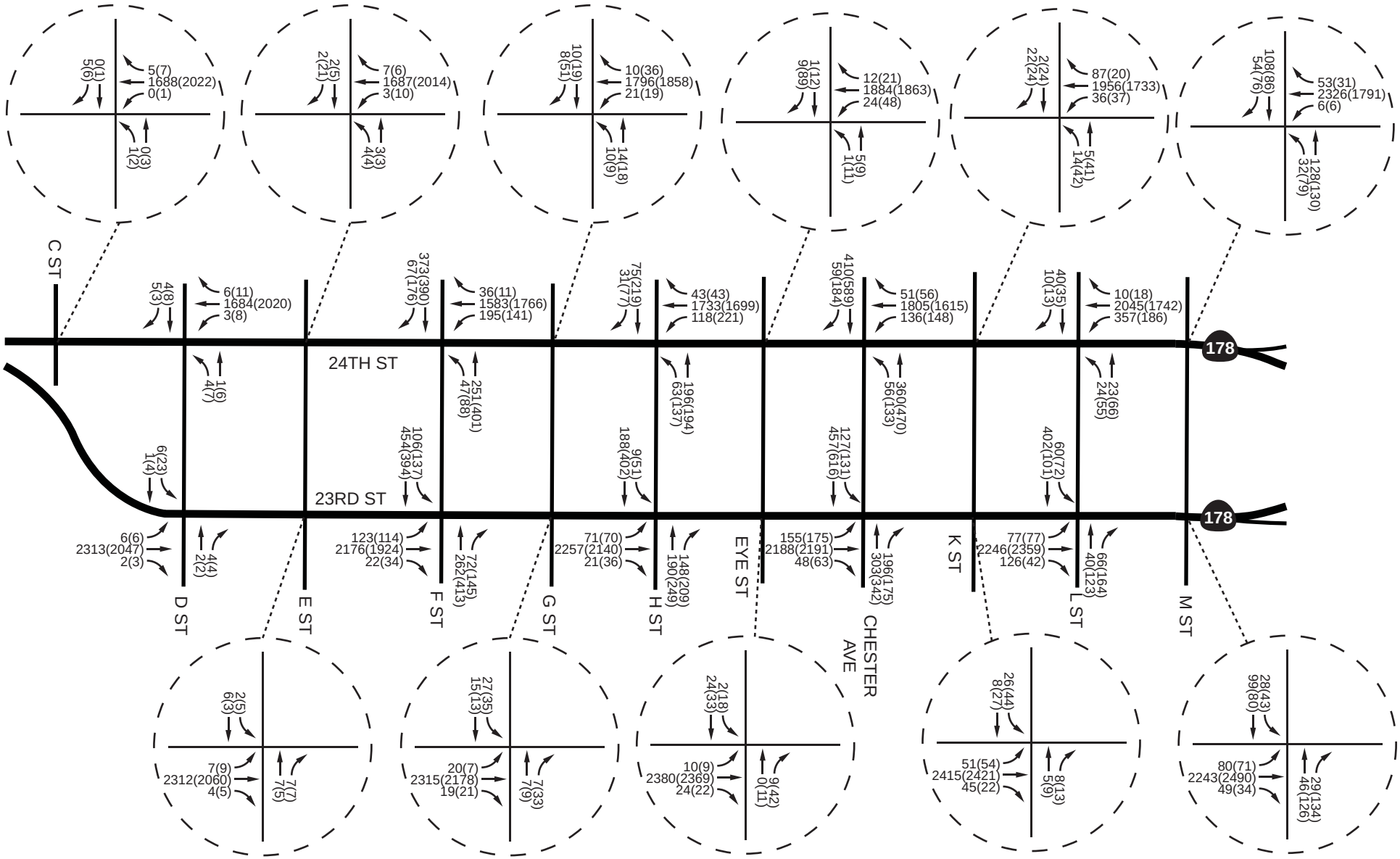
XX(XX) AM(PM) 1-Hour Volume

Not to Scale

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Existing 24th Street Volumes - Area 2

Exhibit 6



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

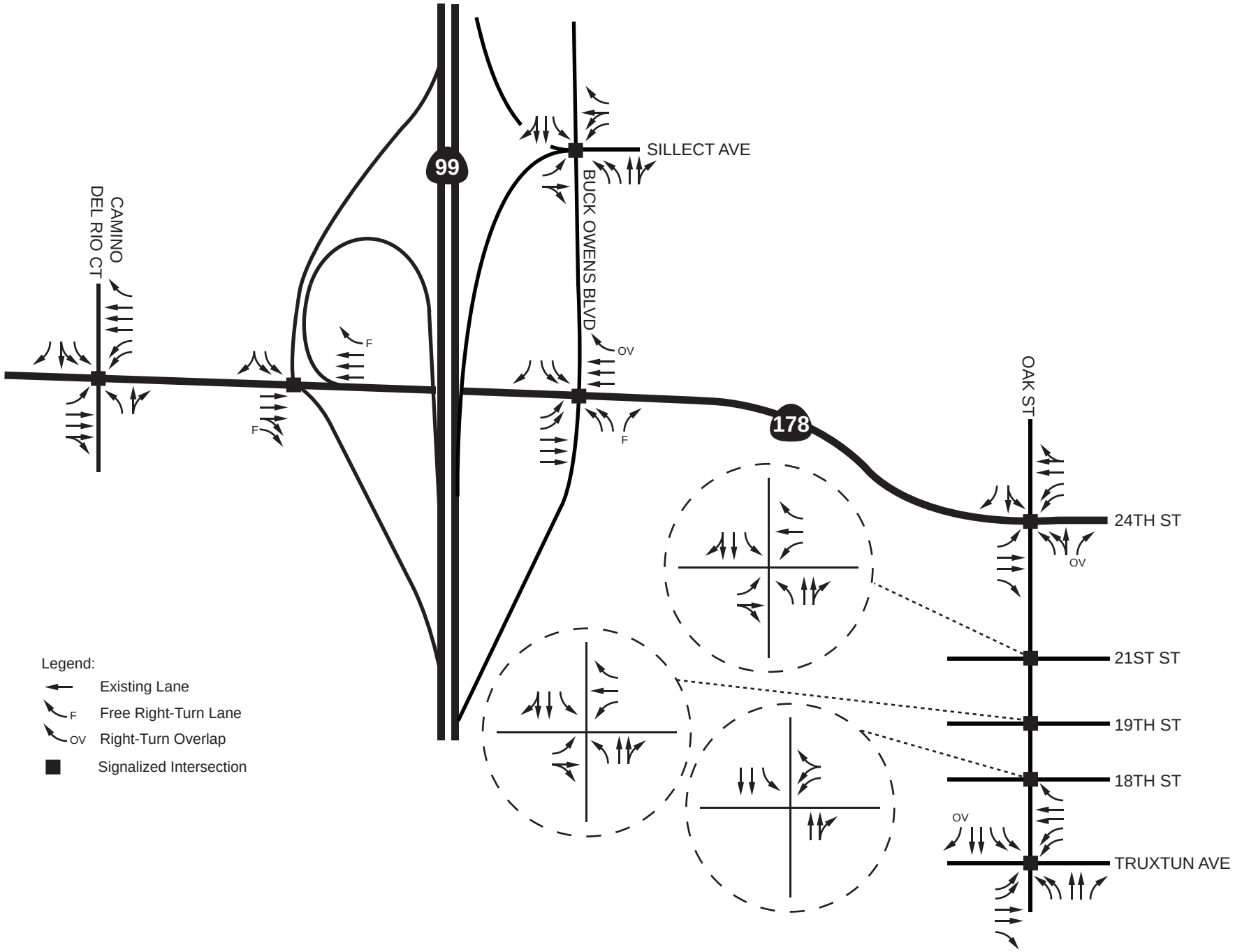
XX(XX) AM(PM) 1-Hour Volume

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Existing 24th Street Volumes - Area 3

Exhibit 7

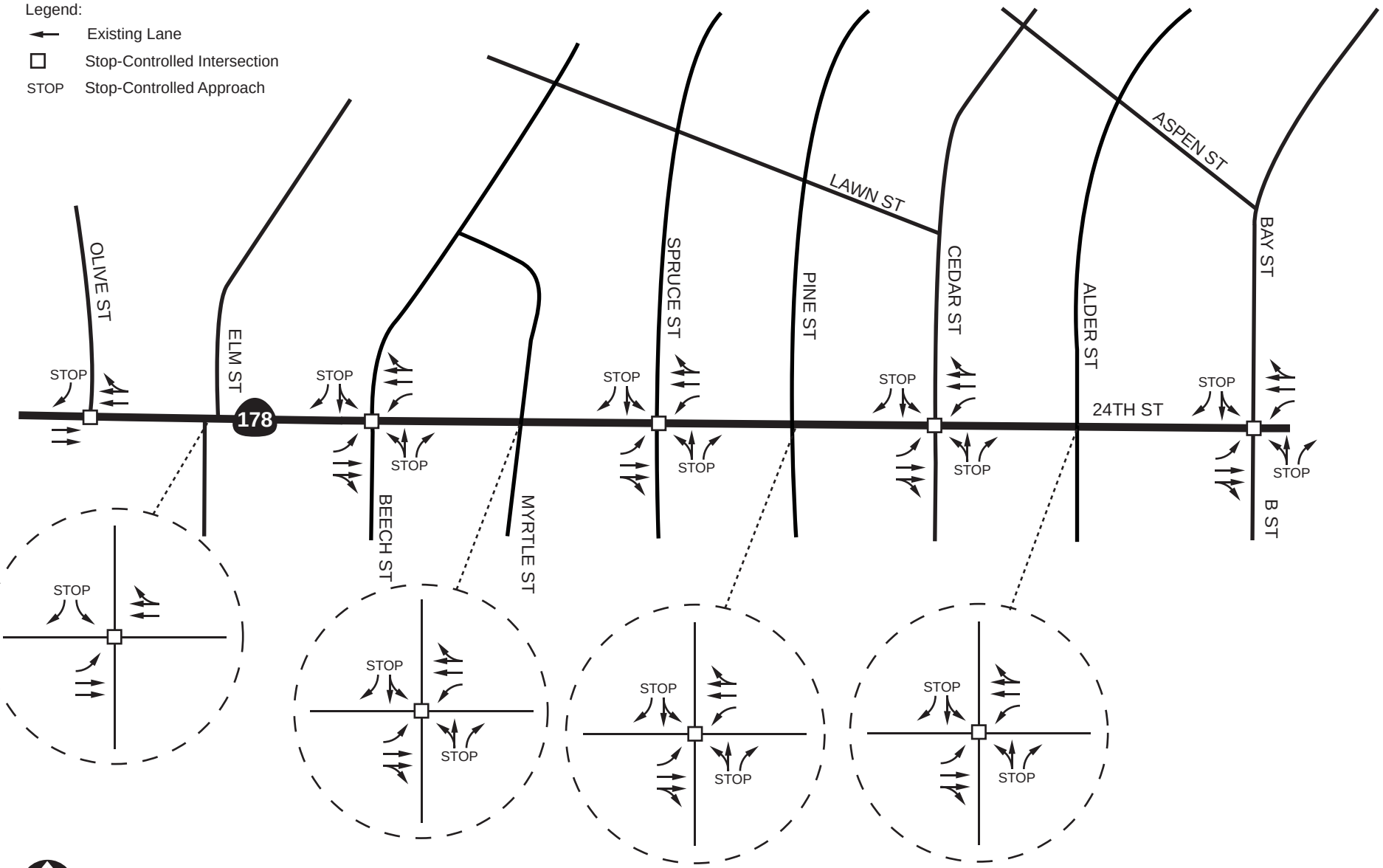


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Existing 24th Street Geometry- Area 1

Exhibit 8

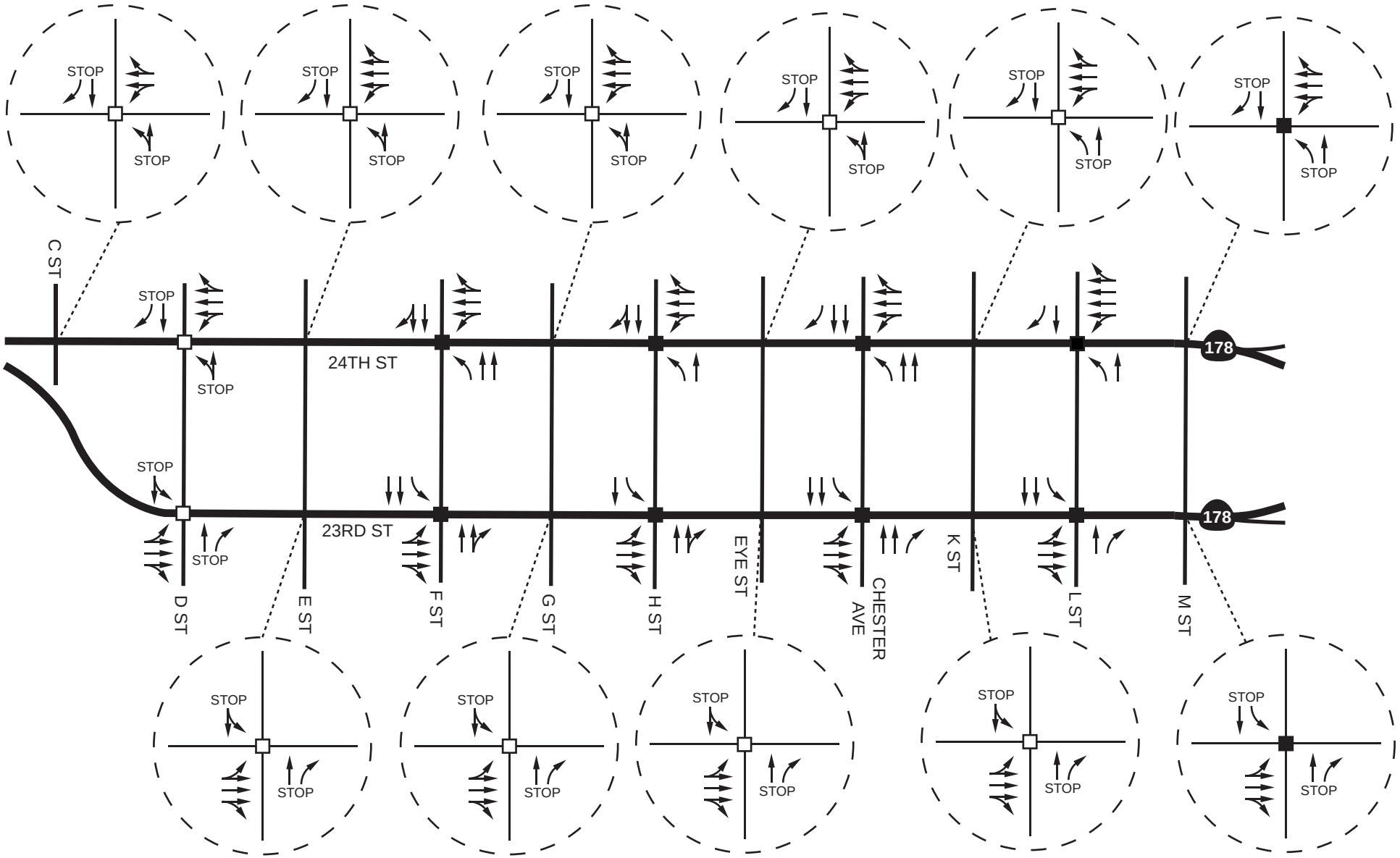


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Existing 24th Street Geometry- Area 2

Exhibit 9



Legend:

- Existing Lane
- Signalized Intersection
- Stop-Controlled Intersection
- STOP Stop-Controlled Approach

Not to Scale

RBF

Existing 24th Street Geometry- Area 3

Exhibit 10

Table 7
Existing Conditions AM & PM Peak Hour Intersection LOS

Study Intersection	AM Hour	PM Hour
	Delay – LOS	Delay – LOS
Camino Del Rio Ct/Rosedale Hwy (SR-58)	17.3 – B	**54.3 – D**
SR-99 SB Ramps/Rosedale Hwy (SR-58)	**38.4 – D**	**44.2 – D**
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	28.4 – C	**40.5 – D**
Buck Owens Blvd-SR-99 NB Ramps/24th St (SR-178)	**48.0 – D**	***> 80.0 – F***
Oak St/24th St (SR-178)	***59.8 – E***	***66.1 – E***
Oak Street/21st Street	13.1 – B	17.9 – B
Oak Street/19th Street	7.7 – A	10.5 – B
Oak Street/18th Street	7.1 – A	8.3 – A
Oak Street/Truxtun Avenue	**50.4 – D**	***76.0 – E***
Olive St/24th St (SR-178)[1]	20.0 – C	24.4 – C
Elm St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Beech St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Myrtle St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Spruce St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Pine St/24th St (SR-178)[1]	***> 50.0 – F***	***> 50.0 – F***
Cedar St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Alder St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
B St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
C St/24th St (SR-178)[1,2]	20.1 – C	***> 50.0 – F***
D St/24th St (SR-178)[1,2]	24.9 – C	***> 50.0 – F***
E St/24th St (SR-178)[1,2]	24.5 – C	***> 50.0 – F***
F St/24th St (SR-178)	11.6 – B	30.4 – C
G St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
H St/24th St (SR-178)	6.5 – A	10.8 – B
Eye St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Chester St/24th St (SR-178)	11.3 – B	19.4 – B
K St/24th St (SR-178)[1,2]	***45.0 – E***	***> 50.0 – F***
L St/24th St (SR-178)[3]	4.8 – A	9.8 – A
M St/24th St (SR-178)	24.6 – C	16.5 – B
D St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***47.4 – E***
E St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
F St/23rd St (SR-178)	29.7 – C	29.0 – C
G St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***47.1 – E***
H St/23rd St (SR-178)	10.0 – B	16.6 – B
Eye St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Chester St/23rd St (SR-178)	18.2 – B	19.3 – B
K St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
L St/23rd St (SR-178)	10.3 – B	8.7 – A
M St/23rd St (SR-178)	13.1 – B	15.8 – B

Note: SB = southbound, NB = northbound; delay shown in seconds; deficient intersection operation shown in **bold**.
1 = LOS and delay for stop-controlled intersections are based worst case minor street approach.
2 = LOS analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.
3 = Counts at L Street/24th Street collected before intersection signalized in August 2009.

LOS D

LOS E or F

As shown in Table 7, twenty-five (25) study intersections are currently operating at a deficient LOS according to agency performance criteria during one or both 1-hour analysis periods. Notable delay is identified at study intersections with minor street stop-sign control at 24th or 23rd Streets, typically located between signalized intersections. Visual observations at the stop-controlled intersections indicates the operation of the Corridor is governed by the signalized intersections and not the stop-controlled minor streets at Elm Street, Beech Street, Myrtle Street, Spruce Street, Pine Street, Cedar Street, Alder Street, B Street, C Street, D Street, E Street, G Street, Eye Street, K Street and L Street. While notable delay is shown at minor street crossings of 24th and 23rd Streets, negligible delay is experienced at minor street crossing by motorists traveling east/west on SR-178.

HCM 95th percentile queue analysis was prepared utilizing the Synchro analysis software at major signalized study intersections. Table 8 summarizes existing 95th percentile queue spillback at the study intersections during both the a.m. and p.m. peak hours; detailed queue spillback analysis sheets are provided in Appendix E.

Table 8
Existing Conditions Queuing Analysis

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Camino Del Rio Ct/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	230	1250	---	290	425	250	150	300	---	250[2]		50
	AM Queue	90[b]	850	---	100[b]	275[b]	0	50	**325[a]**	---	75		25
	PM Queue	50[b]	775	---	200[a,b]	200[b]	25[b]	50	**350[a]**	---	**300[a]**		**75**
SR-99 SB Ramps/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	---	450	450	---	750	---	---	---	---	450	---	1300
	AM Queue	---	0[b]	25[b]	---	75[b]	---	---	---	---	**525[a]**	---	625[a]
	PM Queue	---	125[b]	0[b]	---	300[b]	---	---	---	---	400[a]	---	825[a]
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	**Available Storage ft/ln**	925	1100	---	190	750	190	200	1000	---	115	1100	---
	AM Queue	300	200	---	100	100	25	75	150	---	50	125	---
	PM Queue	200	175	---	**225**	225	25	200	175	---	50	300	---
Buck Owens Blvd-SR-99 NB Ramps/ 24th St (SR-178)	**Available Storage ft/ln**	280[1]	625	---	---	1300	500	700	---	---	400	---	550
	AM Queue	200[b]	550[b]	---	---	450	200	575[a]	---	---	75	---	175
	PM Queue	**325[a,b]**	275[b]	---	---	650[a,b]	125[b]	**875[a]**	---	---	225	---	550[a]
Oak St/24th St (SR-178)	**Available Storage ft/ln**	200	1300	1000	300	675	---	900	---	280	---	175	50
	AM Queue	25[b]	1300[a]	0	**400[a]**	350	---	300[a]	---	**450[a]**	---	75	25
	PM Queue	75[a,b]	975	150	**425[a]**	500	---	525[a]	---	**675[a]**	---	75	25
Oak St/Truxtun Ave	**Available Storage ft/ln**	175	2500	175	275	600	275	160	1600	275	125	575	125
	AM Queue	**325[a]**	475[a]	125	75	150	50	**175**	225	**475[a]**	50	125	**200**
	PM Queue	**425[a]**	250	**275**	**300[a]**	475[a]	75	**200[a]**	225	250	50[b]	500[a]	**775[a]**
F St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	95	250	---	---	600	---
	AM Queue	---	---	---	---	25	---	50[b]	100[b]	---	---	175	---
	PM Queue	---	---	---	---	125	---	75[b]	150[b]	---	---	250[a]	---
H St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	55	250	---	---	300	---
	AM Queue	---	---	---	---	50	---	**75[b]**	175[b]	---	---	50	---
	PM Queue	---	---	---	---	100	---	**150[b]**	175[b]	---	---	100	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln – feet/lane. **Bold** = Queue exceeds capacity.
1 = Total queue storage of 560 feet in two turn lanes (average of 280 feet/ln)
2 = Total queue storage of 500 feet in two lanes (average of 250 feet/ln)
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.

Queue Exceeds Capacity

Table 8
Existing Conditions Queuing Analysis (continued)

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Chester Ave/ 24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	90	275	---	---	650	75
	AM Queue	---	---	---	---	100	---	75[b]	75[b]	---	---	150	25
	PM Queue	---	---	---	---	100	---	**175[a,b]**	100[b]	---	---	275[a]	**150**
L St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	275	---	125	325	---	---	650	50
	AM Queue	---	---	---	---	145[b]	---	25[b]	25[b]	---	---	50	25
	PM Queue	---	---	---	---	**425**	---	75[b]	75[b]	---	---	50	25
M St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	---	---	100	325	---	---	650	50
	AM Queue	---	---	---	---	525	---	25[b]	100[b]	---	---	75	50
	PM Queue	---	---	---	---	325	---	75[b]	125[b]	---	---	75	50
F St/23rdSt (SR-178)	**Available Storage ft/ln**	---	625	---	---	---	---	---	600	---	95	250	---
	AM Queue	---	625[a]	---	---	---	---	---	125	---	75[b]	150	---
	PM Queue	---	400	---	---	---	---	---	250[a]	---	**125[b]**	150[b]	---
H St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	---	100	250	---
	AM Queue	---	50[b]	---	---	---	---	---	125	---	0[b]	125[b]	---
	PM Queue	---	225[b]	---	---	---	---	---	150	---	50[b]	**325**	---
Chester Ave/ 23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	90	90	275	---
	AM Queue	---	425[a]	---	---	---	---	---	125	**175**	**150[a,b]**	125[b]	---
	PM Queue	---	150[a]	---	---	---	---	---	125	**150**	**100[b]**	175[b]	---
L St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	625	75	100	350	---
	AM Queue	---	125[b]	---	---	---	---	---	50	50	50	150	---
	PM Queue	---	125	---	---	---	---	---	100	**150**	75	50	---
M St/23rdSt (SR-178)	**Available Storage ft/ln**	---	275	---	---	---	---	---	625	75	100	325	---
	AM Queue	---	125	---	---	---	---	---	50	25	50[b]	125[b]	---
	PM Queue	---	**375**	---	---	---	---	---	100	**125**	50[b]	75	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.

Queue Exceeds Capacity

As shown in Table 8, adequate storage capacity is provided for existing conditions during the a.m. and p.m. peak hour with the exception of the following locations:

- **Camino Del Rio Court/Rosedale Highway (SR-58)**
  Northbound Through Lane;
  Southbound Shared Left-Turn/Through Lane; and
  Southbound Right-Turn Lane.
- **SR-99 Southbound Ramps/Rosedale Highway (SR-58)**
  Southbound Left-Turn Lane.
- **Buck Owens Boulevard/SR-99 Northbound Ramps – Sillect Avenue**
  Westbound Left-Turn Lane.
- **Buck Owens Boulevard – SR-99 Northbound Ramps/24th Street (SR-178)**
  Eastbound Left-Turn Lane; and
  Northbound Left-Turn Lane.
- **Oak Street/24th Street (SR-178)**
  Westbound Left-Turn Lane; and
  Northbound Right-Turn Lane.
- **Oak Street/Truxtun Avenue**
  Eastbound Left-Turn Lane;
  Eastbound Right-Turn Lane;
  Westbound Left-Turn Lane;
  Northbound Left-Turn Lane;
  Northbound Right-Turn Lane; and
  Southbound Right-Turn Lane.
- **H Street/24th Street (SR-178)**
  Northbound Left-Turn Lane.
- **Chester Avenue/24th Street (SR-178)**
  Northbound Left-Turn Lane; and
  Southbound Right-Turn Lane.
- **L Street/24th Street (SR-178)**
  Westbound Through Lane.
- **F Street/23rd Street (SR-178)**
  Southbound Left-Turn Lane.
- **H Street/23rd Street (SR-178)**
  Southbound Through Lane.

- **Chester Avenue/23rd Street (SR-178)**

  Northbound Right-Turn Lane; and

  Southbound Left-Turn Lane.

- **L Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane.

- **M Street/23rd Street (SR-178)**

  Eastbound Through Lane; and

  Northbound Right-Turn Lane.

The existing freeway segment peak hour LOS is shown in Table 9; detailed HCM freeway segment analysis sheets are provided in Appendix D.

Table 9
Existing Conditions Freeway Segment AM & PM Peak Hour LOS

Study Segment	AM Peak Hour	PM Peak Hour
	Density – LOS	Density – LOS
Northbound		
California Ave On-Ramp to Rosedale Hwy Off-Ramp	**26.1 – D**	23.5 – C
Buck Owens Blvd On-Ramp to Airport Dr Off-Ramp	17.2 – B	17.6 – B
Southbound		
Airport Dr On-Ramp to Rosedale Hwy Off-Ramp	15.2 – B	22.2 – C
Rosedale Hwy On-Ramp to California Ave Off-Ramp	19.4 – C	**30.0 – D**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient freeway segments shown in **bold.**
Source: TRIP Staff.

As shown in Table 9, two (2) study freeway segments are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for existing conditions.

The existing SR-99 ramp merge/diverge a.m. and p.m. peak hour LOS is shown in Table 10; detailed HCM freeway ramp analysis sheets are provided in Appendix D.

Table 10
Existing Conditions Ramp Merge/Diverge AM & PM Peak Hour LOS

Study Ramp	Type of Analysis	AM Peak Hour	PM Peak Hour
		Density – LOS	Density – LOS
Northbound			
24th St Off-Ramp	Diverge	**37.1 – E**	**35.1 – E**
Buck Owens Blvd Off-Ramp	Diverge	23.7 – C	19.6 – B
Buck Owens Blvd On-Ramp	Merge	17.9 – B	18.8 – B
Southbound			
Rosedale Hwy Off-Ramp	Diverge	21.3 – C	**28.1 – D**
Rosedale Hwy Loop On-Ramp	Merge	18.5 – B	**28.6 – D**
Rosedale Hwy Direct On-Ramp	Merge	22.5 – C	**32.1 – D**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient ramp shown in **bold.**
Source: TRIP Staff.

As shown in Table 10, four (4) study freeway ramps are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for existing conditions.

Traffic Accident Data

Table 11 shows three-year traffic accident data for 24th Street (SR-178) between SR-99 and SR-204. The data was obtained from TASAS Table B from January, 2005 to December 31, 2007.

Table 11
Traffic Accident Data for 24th/23rd Street Couplet and SR-178

Description	Accident Statistical Data			Actual Accident Rates			Average Accident Rates		
	Total	Fatal	Injury	FAT	F+I	Total	FAT	F+I	Total
24th St (SR-178) between SR-99 and B Street (PM 0.0-0.963)	48	1	36	0.015	0.55	0.72	0.020	1.81	3.89
Westbound 24th Street (SR-178) between B Street and N Street (PM 0.964-1.748)	52	0	26	0.000	1.05	2.09	0.017	1.32	2.46
Eastbound 23rd Street (SR-178) between B Street and O Street (PM 0.964-1.821)	49	1	34	0.035	1.22	1.71	0.015	1.18	2.29
24th Street (SR-178) between O Street and SR-204 (PM 1.821-2.0)	16	0	8	0.000	0.80	1.60	0.004	0.21	0.68
Source: California Highway Patrol, TASAS Table B data provided by Caltrans staff									

As shown in Table 11, the existing total accident rate for 24th Street (SR-178) between SR-99 and B Street is well below the statewide average accident rate for similar highway facilities. Between B Street and N Street in the westbound direction of the 24th Street couplet, the accident rate is slightly below the statewide average, while in the eastbound direction on 23rd Street the total accident rate is below the statewide average but the rate of fatal and injury accidents is slightly above the statewide average. Between O Street and SR-204 the accident rate is above the statewide average. Capacity and operational improvements associated with the proposed project are not expected to increase accident rates within the project study limits.

Table 12 shows detailed three-year traffic accident data for the S-Curve on 23rd Street between B Street and D Street. The data was obtained from TASAS Table B from April 1, 2005 to March 31, 2008. The S-Curve on 23rd Street (SR-178) starts at post mile 0.964 and ends at post mile 1.120.

Table 12
Traffic Accident Data for 23rd Street S-Curve (Post Mile 0.964 to 1.120)

Post mile	Type of Collision	Injury	Fatal	Weather	Lighting
0.980	Hit Object	Yes	No	Clear	Dark (Night)
1.000	Hit Object	Yes	No	Clear	Dark (Night)
1.070	Sideswipe	No	No	Clear	Dark (Night)
Source: California Highway Patrol, TASAS Table B					

As shown in Table 12, for the three years between April 1, 2005 and March 1, 2008 there were three accidents were recorded within the limits of the 23rd Street S-Curve.

TRAFFIC VOLUME FORECAST

Travel Forecast Model

Kern Council of Governments (Kern COG) maintains a travel demand forecast model for the Kern County region. The model is based on input variables such as population, households, employment, school enrollment, income, traffic counts, traffic speeds, intersection configuration, and planned roadway networks from a variety of sources such as locally approved General Plan land use entitlements, local planning department input, and state and federal data sources. The model forecasts the demand for future transportation infrastructure by prediction of future traffic patterns based on the input variables.

The Kern COG model was developed in 1998 and updated in 2007. The updated model was approved in February 2008 by the Kern Regional Transportation Modeling Committee, which consist of staff representatives from Kern COG, local entities, and Caltrans District 6. The 2007 model update was compiled by Kern COG, Dowling Associates, Inc. and Parsons Transportation Group using the standard “four-step” travel demand model. External trips were updated using the 2001 Caltrans Statewide Model, and time-of-day factors were recalibrated based on new survey data. The 2007 model update was calibrated to 2006 population, employment and traffic count data, and validated against 2003 socio-demographic data.

In late 2008/early 2009, the 2007 Model was updated to reflect minor refinements requested by Kern Regional Modeling Committee members. The refinements included:

- Subdivision of trip attraction rates for high, medium and low intensity retail land use generators;
- Subdivision of trip attraction rates for service-office and service-warehousing land use travel generators;
- Increased freeway ramp capacities for diamond on-ramps from 800 to 1,000 vehicles per hour per lane;
- Increased urban freeway freeflow speeds from 55 to 65 miles per hour; and
- Minor land use shifts between adjacent traffic analysis zones for future growth conditions.

These refinements, collectively known as the 2007 Kern COG Regional Traffic Model (Update 1) were approved by the Kern Regional Transportation modeling Committee in February 2009.

Land Use Assumptions

Population and employment projections are integral to the traffic model's evaluation of future transportation system needs. As discussed, the increasing population in Kern County is an important factor driving the need to develop and improve transportation facilities. The data utilized by the model is tied to the air quality conformity process, which must be completed before state and federal highway funds for project design and construction are released for use. In July 2005, the Kern COG Board adopted population projections after considering growth forecasts from various California sources, such as the California Department of Finance (DOF). The DOF's most recent 2007 forecasts expect the population of Kern County to reach 1.35 million by 2030 and 2.1 million by 2050. The DOF has been issuing population projections for over 40 years and their estimates are often used by local jurisdictions for planning future infrastructure needs. Kern COG uses the DOF estimates and the estimates of other sources as a guideline when making its own projections. As part of the Kern COG 2011 Regional Transportation Plan update, the Board took action in 2010 to re-adopt the previously-approved population projections through the year 2050.

Table 13 shows the various population projections prepared by the California DOF, California Economic Forecasts and the projections adopted by the Kern COG.

Table 13
Kern County Population Forecast Comparison

Year	CA Department of Finance (1)		California Economic Forecasts Report (2)				Kern COG (3)
	2004	2007	2005	2006	2007	2008	2005
1995	-	-	630,300	-	-	-	-
2000	664,694	665,519	665,367	665,373	-	-	-
2005	732,800	-	767,764	770,424	768,928	765,161	765,190
2010	808,808	871,728	886,417	895,263	885,176	853.486	845,155
2015	-	-	1,009,368	1,036,709	1,005,806	950,991	924,533
2020	950,112	1,086,113	1,132,743	1,185,769	1,128,324	1,057,804	1,010,823
2025	-	-	1,255,384	1,331,953	1,241,859	1,165,153	1,105,904
2030	1,114,878	1,352,627	-	1,474,471	1,347,635	1,272,081	1,208,209
2035	-	-	-	-	-	-	1,321,000
2040	1,325,648	1,707,239	-	-	-	-	1,444,100
2050	1,549,594	2,106,024	-	-	-	-	1,726,200

Sources:
1 = California Department of Finance, Demographic Research Unit, May 2004 and July 2007

2 = California Department of Transportation, county-level economic forecast reports, 2005-2008, prepared by California Economic Forecasts, Inc.

3 = Kern Council of Governments, Kern County Travel Demand Model Population Forecast, 2005

Exhibit 11 shows the various population projections in graphic format. All the sources of data projection expect a consistently regular population increase over the next 40 years. Population projections made in recent years have generally forecasted higher population growth in the county than older forecasts.

The travel forecast model incorporates general plan growth reflecting the KERN COG-adopted population forecasts, including land development proposals pending approval. The 2035 land use scenario is based on a county population of 1,321,000. While this estimate is lower than the most recent forecasts form the California DOF and the California Economic Forecast Report, Kern COG recommends keeping the current population projection because it most accurately reflects local and regional economic conditions.

Exhibit 12 shows the distribution of household growth in the County between 2006 and 2035, based on the currently adopted Metropolitan Bakersfield General Plan land use map. The distribution shown in Exhibit 12 considers all approved and pending project entitlements as of December 14, 2007 and minor shifts in housing units between adjacent traffic analysis zones as requested by the City of Bakersfield and Kern County. Exhibit 13 shows the distribution of employment growth in the county between 2006 and 2035. The distribution of population and employment growth was prepared by Kern COG based on local agency input and approved by the Kern Regional Transportation Modeling Committee in February 2008 and February 2009.

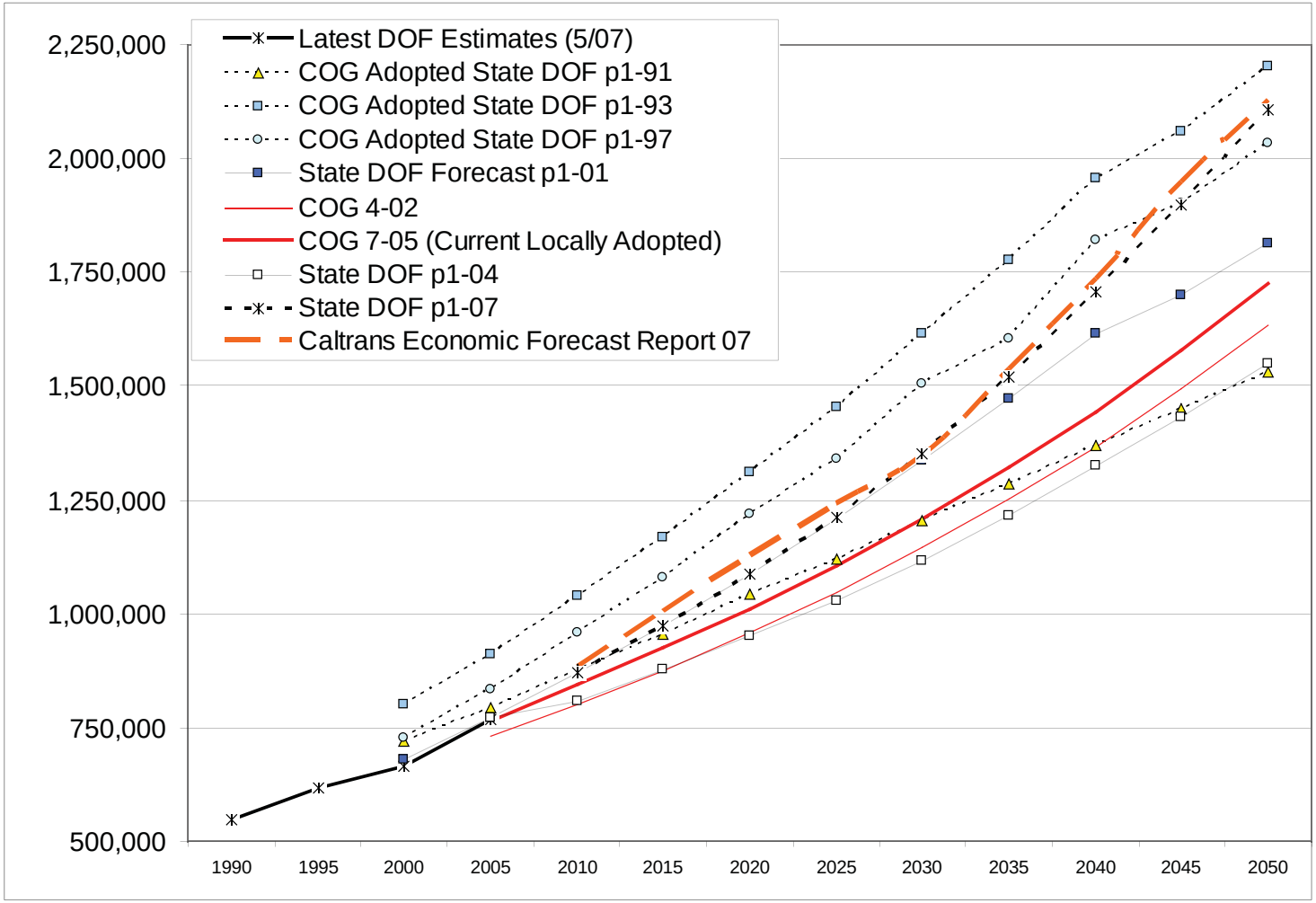
Roadway Network Assumptions

The planned highway system is defined by the locally approved and adopted Regional Transportation Plan (RTP) which is a long-range transportation plan covering a 20 plus year horizon. The most recent RTP in Kern County, *Destination 2030*, was adopted by the Kern COG Board on May 17, 2007 and covers the 2007 to 2030 planning horizon. The RTP responds to projected population and employment growth and is fiscally constrained by existing and projected revenue sources. The RTP ensures that project implementation of identified projects will attain air quality compliance.

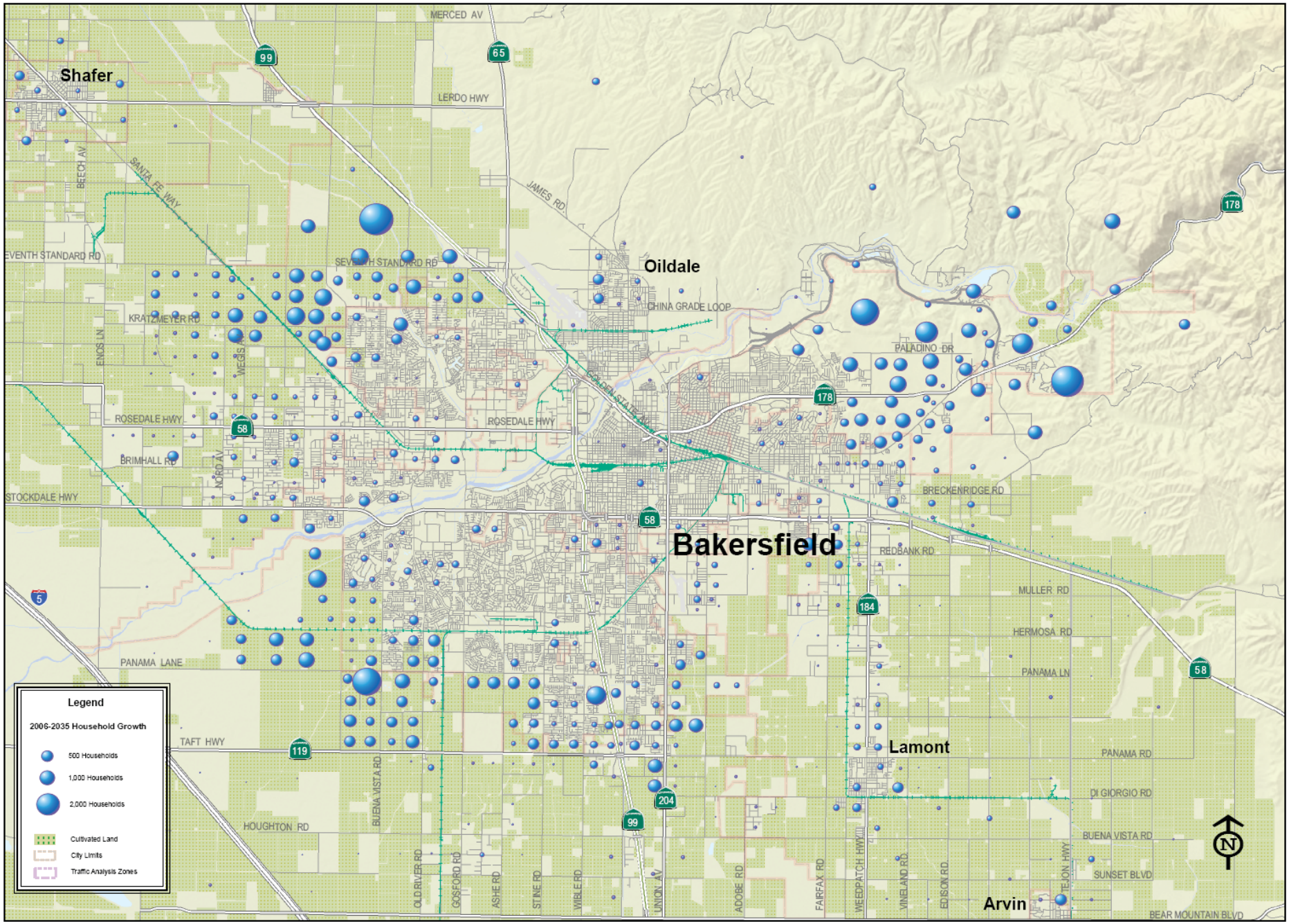
According to the latest RTP, multimodal facilities will be constructed, and transportation services implemented, on a level consistent with projected funding. Funding projections assume that current levels and sources of funding will continue throughout the planning horizon. Chapter 4 of the RTP discusses strategic investments. Table 4-1 in the RTP lists the Constrained Program of Projects, a complete list of planned improvements by mode. The projects on the RTP list have been evaluated according to the Clean Air Act Section 176(c) (42 U.S.C. 7506(c)) and U.S. Environmental Protection Agency (EPA) transportation conformity regulations and have been demonstrated to conform to the California State Implementation Plan. This analysis demonstrates that the criteria specified in the transportation conformity regulations for a conformity determination are satisfied by the 2007 RTP; a finding of conformity is therefore supported. Table 4-2 in the RTP identifies the unconstrained program of projects, which consists of projects that are important to the development of Kern County's transportation system, but for which funding has not been identified or is not available. The projects shown on the unconstrained program list are not included in the Air Quality Conformity model.

Consistency with Kern COG Regional and Federal Transportation Planning Documents

The Kern Council of Governments released 2007 RTP Amendment No. 1 and the associated environmental review documents in November 2008. In January 2009, the Kern Council of Governments adopted the 2007 RTP Amendment No. 1; federal and state approval occurred in



Source: PARSONS

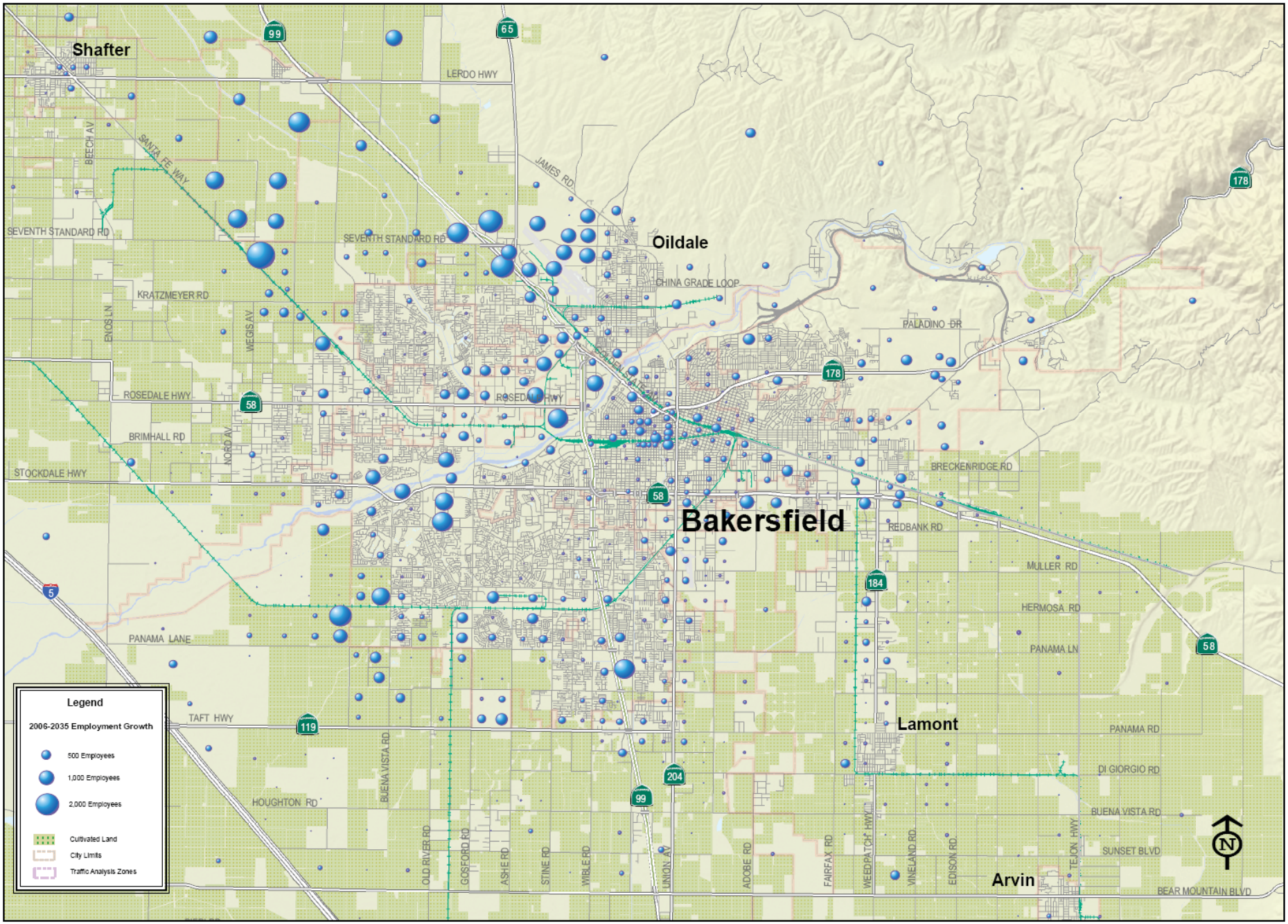


Source: PARSONS

RBF

Household Growth in Metropolitan Bakersfield 2006-2035

Exhibit 12



Source: PARSONS

RBF

Employment Growth in Metropolitan Bakersfield 2006-2035

Exhibit 13

February 2009. The amendment was needed in order to reflect projects that were not fully developed at the time the 2007 RTP was originally adopted, and to incorporate changes in funding assumptions that reflect current priorities. RTP Amendment No. 1 maintains essentially the same list of projects as the original 2007 RTP with minor changes, and the approved environmental documents are consistent in these project lists.

RTP Amendment No. 1 covers the 2007-2030 planning horizon and reflects a decrease in funding resources of $400 million for improvements from the previous document over a 23-year implementation timeframe. This amendment also provides updated year-of-expenditure cost estimates for roadway, interchange, and bridge construction components. As a consequence, the number of roadway projects included in the proposed Amendment No. 1 has been adjusted to reflect the anticipated funding for projects that will be constructed during this time frame.

Kern COG staff has developed 2007 RTP Amendment No. 2, which incorporates $2 billion of traffic impact fees, which will be used to fund additional projects. . Both the Kern COG travel demand forecast model and the air quality conformity model (minus the 2031 to 2035 timeframe project additions) use this regional roadway network to anticipate traffic volumes, levels of service and vehicle emission data.

As the result of geographical proximity, the 24th Street Improvement Project is closely connected with the Oak Street/24th Street Improvement Project. Although these projects are listed separately, the traffic reports, project study reports and environmental documents are being closely coordinated to ensure maximum roadway network benefit. The Kern COG transportation planning documents identify both of these projects individually.

To accommodate the design year traffic forecasts, the ultimate six/eight-lane facility for the 24th Street Improvements Project would be constructed by 2016 through the following two projects:

1. Oak St/24th Street, Bakersfield, SR 178 (24th St) and Oak St - construct improvements $19,100,000, KER08RTP012, Construction start: 2012.
2. 24th Street, Bakersfield, SR 178 SR-99 to M Street - widen to six/eight lanes, $34,000,000, KER08RTP014, Construction start: 2013.

These projects are identified in the Kern Council of Governments (Kern COG) 2007 Destination 2030 Regional Transportation Plan (RTP) Amendment #2, dated September 2009, which was approved by the Federal Highway Administration (FHWA) on November 3, 2009. The draft environmental document incorporates the improvements as identified in the Kern COG 2007 RTP Amendment #2, within the limits of this project.

In April 2010, Kern COG released the following documents for public review: the draft 2011 Destination 2035 Regional Transportation Plan, the draft 2011 Federal Transportation Improvement Plan, draft Air Quality Conformity Analysis and draft Subsequent Environmental Impact Report. Kern COG plans to adopt the final versions of these documents in July 2010; FWHA approval is expected by December 2010.The references in these documents to the projects associated with the 24th Street Widening project are identical as Kern COG 2007 RTP Amendment No. 2.

These projects are also identified in the Kern COG 2009 Federal Transportation Improvement Program (FTIP), Amendment #8 and the draft Kern COG 2011 FTIP. Because these projects are included in the constrained list of projects in current and proposed RTP and FTIP

documents, and funded through the final construction phase, they are considered "fully-funded" according to staff at the Kern Council of Governments.

As noted above, funding projections for the 2007 Destination 2030 RTP were based on the assumption that current levels and sources of funding would continue throughout the planning timeframe. To address the reduction in state and federal funding assumed by the proposed Amendment No. 1 and increased costs of construction, the City of Bakersfield and Kern County have updated the Metropolitan Bakersfield Transportation Impact Fee program to address these funding shortfalls.

Metropolitan Bakersfield Transportation Impact Fee Program

The Metropolitan Bakersfield Transportation Impact Fee (TIF) was originally adopted by the City Council and County Board of Supervisors in 1992. The impact fee is a development fee as described in the State of California Government Code Section 66000. The fee program consists of an ordinance implementing a fee on new development, a resolution adopting the regional transportation facilities list, and a Transportation Impact Fee schedule. The TIF pays for construction of both regional and local facilities that are required to maintain level of service C. The TIF program has been updated since its inception, with the last revision occurring in 2007-2008 after a period of rapid growth. The 2007-2008 update included the following steps:

- Responds to projected population and employment growth;
- Socioeconomic data updated for the base year of 2006 and horizon year 2035;
- Kern COG model updated and validated for the new horizon year and growth projections;
- Based on the results of the model, the transportation facilities necessary to support growth with a level of service C were determined; and
- The cost of the final TIF facilities network was determined.

The Traffic Impact Fee (Phase IV) regional transportation facilities list and transportation impact fee schedule have been finalized and were adopted by the Kern County Board of Supervisors and the Bakersfield City Council in May and July 2009, respectively. The facilities list and impact fee funding will restore revenues for regional and local roadways needed to maintain traffic level of service "C" conditions and to fully fund the 2007 RTP Amendment 2 and the draft 2011 Kern COG RTP Constrained Program of Projects.

Peak Hour and Daily Traffic Volumes

Forecast year 2015 and 2035 traffic volumes are based on post-processed Kern COG model runs provided by Thomas Roads Improvement Program (TRIP) staff. Daily, AM and PM peak-period link volume forecasts were provided by TRIP staff for the base year (2006) and forecast years 2015 and 2035 based on the land use assumptions, demographics and highway network discussed in prior sections. The Kern COG model was first developed and calibrated in 1998, and has been monitored for accuracy and updated periodically since that time. In 2007, a comprehensive recalibration of the model based on year 2006 information occurred.

The Kern COG model provides peak period and off-peak traffic volumes of varying lengths depending on the time of day. For the a.m. peak period, a 2-hour forecast is computed representing 7:00 a.m. to 9:00 a.m. For the p.m. peak period, a 3-hour forecast is computed representing 3:00 p.m. to 6:00 p.m. To convert the a.m. peak period forecast to a single hour, a factor of 55 percent was applied to all link volume forecasts, and to convert the p.m. peak period forecast to a single hour, a factor of 35 percent was applied. The factors to derive peak hour link volumes from the Kern COG model were determined by comparing existing measured count data to the model baseline peak period and calculating the percentage of the peak period that occurs in the peak hour. This method and subsequent results were reviewed and approved by City/TRIP staff and is consistent with other area studies.

Post-processing of the model data to provide peak hour intersection volumes was conducted in accordance with TRIP traffic model post-processing guidelines, utilizing TurnsW32 software. Further refinement of the post-processed forecast year 2015 and 2035 peak hour traffic volumes was conducted based on field observations and field data, refinement to reflect existing travel behavior since the Kern COG model does not include every street included in the analysis, and collaboration with Caltrans and TRIP staff to determine final forecast year 2015 and 2035 peak hour traffic volumes.

It is worth noting the forecast 2015 and 2035 traffic volumes are demand volumes assuming the circulation system is unconstrained. Since the traffic demand is forecast based on anticipated regional population and employment growth, the “no build” and “with project” traffic volumes are the unchanged relative to the implementation of improvements on 24th Street. If circulation improvements such as the 24th Street Improvement Project are not implemented, traffic congestion shown forecast for “no build” conditions would increase the likelihood of traffic diversion through neighborhood streets and onto parallel facilities and would spread the peak period during both the morning and evening due to the constrained ability of the circulation system to accommodate the forecast demand.

Analysis of forecast year 2015 and 2035 conditions utilizes peak hour factors recommended by the SYNCHRO Software based on approach volumes. Approach volumes consist of the addition of the left-turn volume, through volume, and right-turn volume at a leg of an intersection. Table 14 shows the peak hour factors utilized in the analysis based on total approach volumes.

Table 14
Synchro 6 Software Peak Hour Factors

Total Approach Volume	Peak Hour Factor
2,000 vehicles/hour	0.95
1,000 vehicles/hour	0.93
500 vehicles/hour	0.92
200 vehicles/hour	0.87
100 vehicles/hour	0.83
50 vehicles/hour	0.78

Source: Synchro 6 User Guide, Copyright 1993-2004

As indicated, the peak hour factors listed in Table 14 are based on approach volumes, and are utilized for 2015 and 2035 conditions for both "No Build" and "Build" conditions.

FORECAST YEAR 2035 NO BUILD CONDITIONS

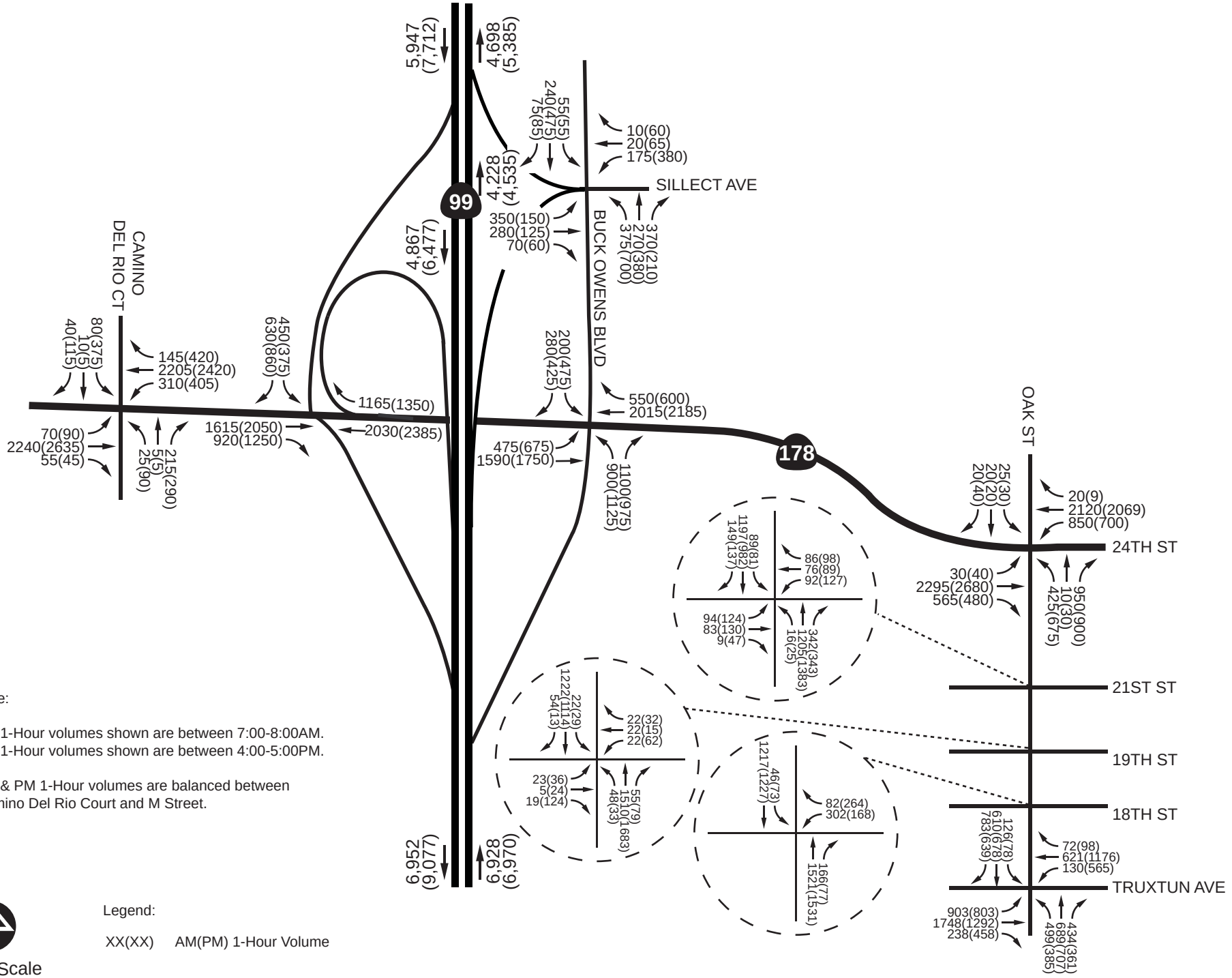
This section analyzes the impact of long-range, cumulative growth along the 24th Street Corridor. Forecast year 2035 traffic volumes are based on post-processed Kern COG model runs provided by Thomas Roads Improvement Program (TRIP) staff.

Forecast Year 2035 no build conditions assume no geometric changes from existing conditions with the exception of planned widening of Truxtun Avenue from four-lanes to six-lanes, including dedicated right-turn lanes.

Exhibits 14, 15 and 16 show forecast year 2035 no build conditions a.m. peak hour and p.m. peak hour traffic volumes at the study intersections. Traffic volumes on the SR-99 shown in Exhibits 14, 15 and 16 are based on information provided by TRIP staff to ensure consistency between analyses by different consultants on other TRIP projects.

Forecast Year 2035 No Build Conditions Traffic Operational Analysis

Table 15 summarizes forecast year 2035 no build conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets are contained in Appendix D.



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

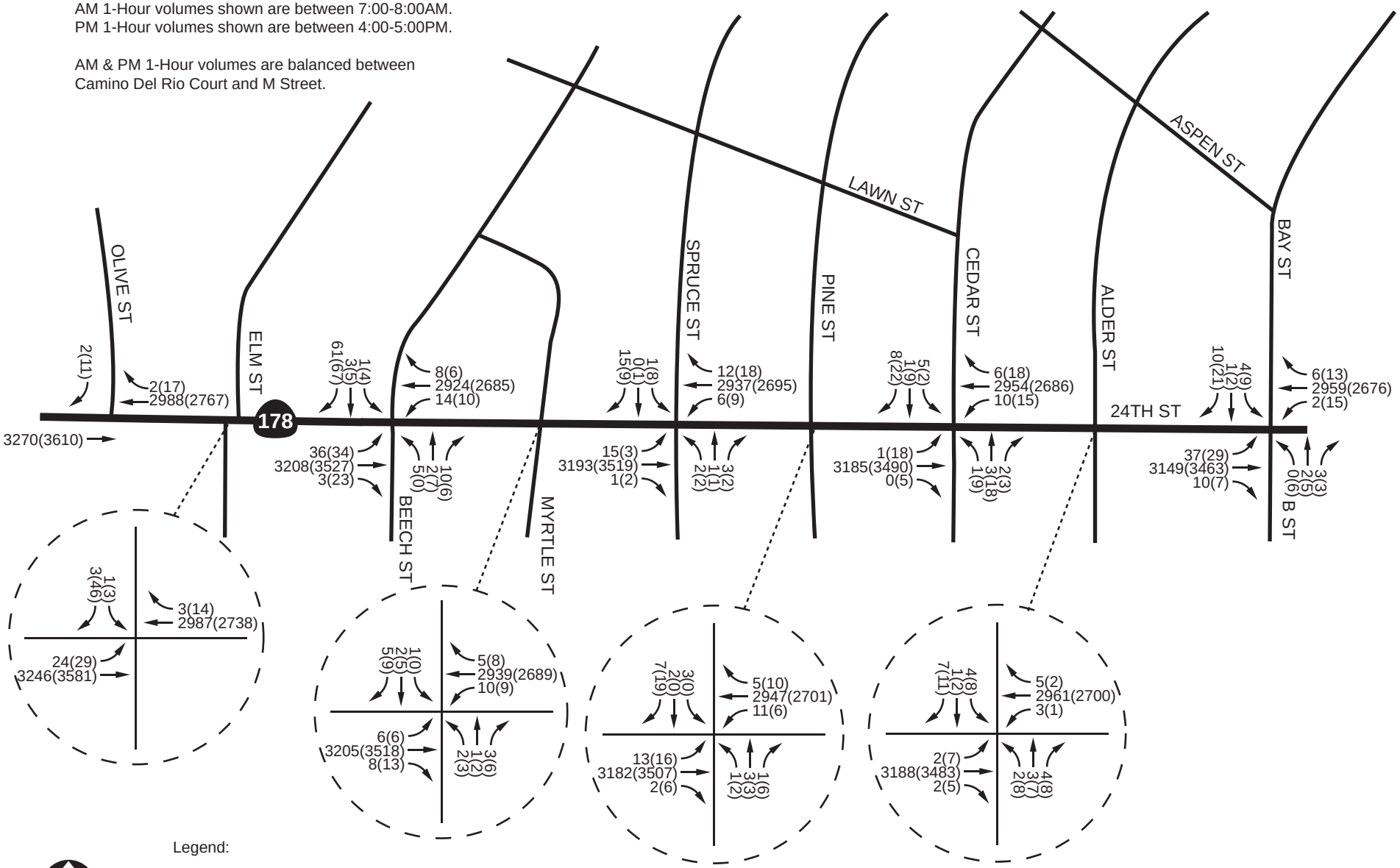
Forecast Year 2035 No Build AM/PM Peak Hour Intersection Volumes - Area 1

Exhibit 14

Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.



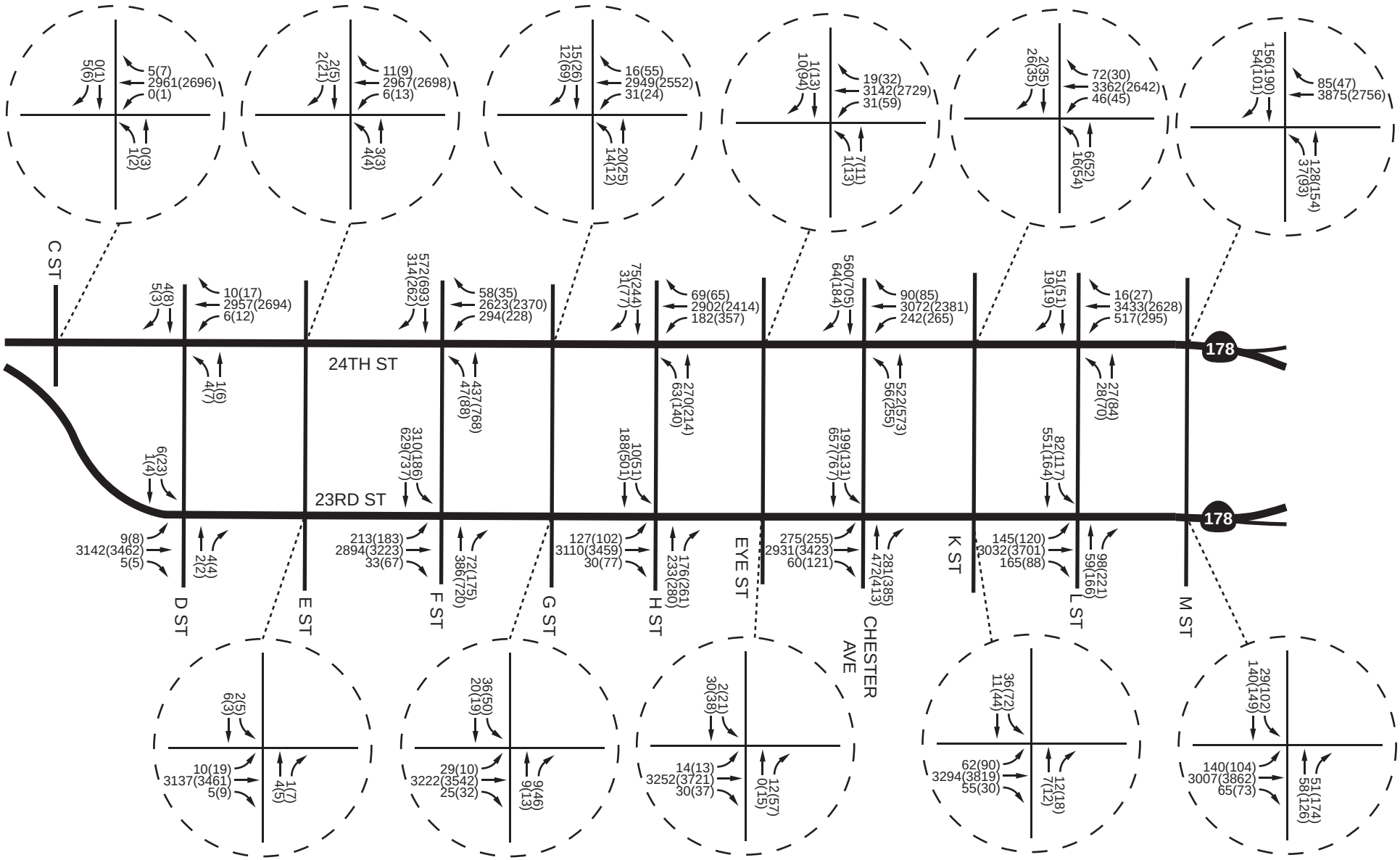
Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

Forecast Year 2035 No Build AM/PM Peak Hour Intersection Volumes - Area 2

Exhibit 15



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

Forecast Year 2035 No Build AM/PM Peak Hour Intersection Volumes - Area 3

Exhibit 16

Table 15
Forecast Year 2035 No Build Conditions AM & PM Peak Hour Intersection LOS

Study Intersection	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS
Camino Del Rio Ct/Rosedale Hwy (SR-58)	31.6 – C	***> 80.0 – F***
SR-99 SB Ramps/Rosedale Hwy (SR-58)	***> 80.0 – F***	***> 80.0 – F***
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	***59.6 – E***	***68.9 – E***
Buck Owens Blvd-SR-99 NB Ramps/24th St (SR-178)	***> 80.0 – F***	***> 80.0 – F***
Oak St/24th St (SR-178)	***> 80.0 – F***	***> 80.0 – F***
Oak Street/21st Street	14.3 – B	21.3 – C
Oak Street/19th Street	5.9 – A	10.3 – B
Oak Street/18th Street	15.3 – B	15.4 – B
Oak Street/Truxtun Avenue	***> 80.0 – F***	***> 80.0 – F***
Olive St/24th St (SR-178)[1]	***42.4 – E***	***39.8 – E***
Elm St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Beech St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Myrtle St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Spruce St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Pine St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Cedar St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Alder St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
B St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
C St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
D St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
E St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
F St/24th St (SR-178)	***63.2 – E***	***56.5 – E***
G St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
H St/24th St (SR-178)	***65.4 – E***	30.1 – C
Eye St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Chester St/24th St (SR-178)	***> 80.0 – F***	***59.0 – E***
K St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
L St/24th St (SR-178)[3,4]	**38.5 – D**	12.0 – B
M St/24th St (SR-178)[4]	***> 80.0 – F***	***41.0 – D***
D St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
E St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
F St/23rd St (SR-178)	***> 80.0 – F***	***> 80.0 – F***
G St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
H St/23rd St (SR-178)	***72.4 – E***	***> 80.0 – F***
Eye St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Chester St/23rd St (SR-178)	***> 80.0 – F***	***> 80.0 – F***
K St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
L St/23rd St (SR-178)	29.2 – C	***> 80.0 – F***
M St/23rd St (SR-178)	30.6 – C	***> 80.0 – F***

Note: SB = southbound, NB = northbound. Delay shown in seconds; deficient intersection operation shown in **bold**.
1 = LOS and delay for stop-controlled intersections are based worst case minor street approach.
2 = LOS analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.
3 = Counts at L Street/24th Street collected before intersection signalized in August 2009.
4 = Operation may be affected by queue spillback from downstream intersection.

LOS D

LOS E or F

As shown in Table 15, thirty-six (36) study intersections are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2035 no build conditions.

While notable delay is shown at minor street crossings of 24th and 23rd Streets, negligible delay is experienced by motorists traveling east/west on 24th Street.

While the upstream and downstream intersections are forecast to operate deficiently, acceptable operations are forecast at the signalized L Street/24th Street intersection due to relatively lower cross-street traffic volumes than at adjacent intersections.

HCM 95th percentile queue analysis was prepared utilizing the Synchro analysis software at major signalized study intersections. Table 16 summarizes forecast year 2035 no build 95th percentile queue spillback at the study intersections during both the a.m. and p.m. peak hours; detailed queue spillback analysis sheets are provided in Appendix E.

Table 16
Forecast Year 2035 No Build Conditions Queuing Analysis

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Camino Del Rio Ct/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	230	1250	---	290	425	250	150	300	---	250[2]		50
	AM Demand	100[a]	900	---	175[a,b]	**525[b]**	25[b]	50	**500[a]**	---	75		25
	PM Demand	200[a]	1150[a]	---	250[a,b]	**450[b]**	25[b]	150	**650[a]**	---	**350**		**125**
SR-99 SB Ramps/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	---	450	450	---	750	---	---	---	---	450	---	1300
	AM Demand	---	0[b]	0[b]	---	100[b]	---	---	---	---	**900[a]**	---	**1325[a]**
	PM Demand	---	150[b]	0[b]	---	300[b]	---	---	---	---	**725[a]**	---	**1775[a]**
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	**Available Storage ft/ln**	925	1100	---	190	750	190	200	1000	---	115	1100	---
	AM Demand	350	325	---	125	125	25	**300[a]**	200	---	100[a]	150	---
	PM Demand	200	250[a]	---	**275**	275	50	**500[a]**	250	---	100[a]	300	---
Buck Owens Blvd- SR-99 NB Ramps/ 24th St (SR-178)	**Available Storage ft/ln**	280[1]	625	---	---	1300	500	700	---	---	400	---	550
	AM Demand	**350[a,b]**	525[b]	---	---	950[a,b]	225[b]	600[a]	---	---	75	---	225[a]
	PM Demand	**600[a,b]**	425[b]	---	---	850[a,b]	150[b]	**875[a]**	---	---	225	---	**550[a]**
Oak St/24th St (SR-178)	**Available Storage ft/ln**	200	1300	1000	300	675	---	900	---	280	---	175	50
	AM Demand	50[b]	**1525[a]**	75	**725[a]**	**1050**	---	450[a]	---	**1750[a]**	---	100[a]	25
	PM Demand	50[b]	**1975[a]**	300	**600[a]**	**975**	---	750[a]	---	**1625[a]**	---	100[a]	25
Oak St/Truxtun Ave	**Available Storage ft/ln**	170	2500	---	260	600	---	150	1600	275	100	575	120
	AM Demand	**575[a]**	600[a]	---	75	200	---	**250**	300	**450[a]**	75[b]	350[a]	**1025[a]**
	PM Demand	**700[a]**	425[a]	---	**375[a]**	350	---	**275[a]**	325	**350[a]**	50[b]	500[a]	**625[a]**
F St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	95	250	---	---	600	---
	AM Demand	---	---	---	---	25[b]	---	25[b]	150[b]	---	---	475[a]	---
	PM Demand	---	---	---	---	75[b]	---	50[b]	200[b]	---	---	550[a]	---
H St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	55	250	---	---	300	---
	AM Queue	---	---	---	---	25[b]	---	50[b]	200[b]	---	---	50	---
	PM Queue	---	---	---	---	200[b]	---	**125[b]**	175[b]	---	---	100	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
1 = Total queue storage of 560 feet in two turn lanes (average of 280 feet/ln)
2 = Total queue storage of 500 feet in two lanes (average of 250 feet/ln)
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.
Queue Exceeds Capacity

Table 16
Forecast Year 2035 No Build Conditions Queuing Analysis (continued)

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Chester Ave/ 24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	90	275	---	---	650	75
	AM Demand	---	---	---	---	**875[a,b]**	---	50[b]	100[b]	---	---	250[a]	50
	PM Demand	---	---	---	---	**725[a]**	---	**325[a,b]**	100[b]	---	---	350[a]	**175**
L St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	275	---	125	325	---	---	650	50
	AM Demand[3]	---	---	---	---	**650[b]**	---	25[b]	25[b]	---	---	50	25
	PM Demand[3]	---	---	---	---	**650[b]**	---	75[b]	75[b]	---	---	50	25
M St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	---	---	100	325	---	---	650	50
	AM Demand[3]	---	---	---	---	1250[a]	---	25[b]	75[b]	---	---	125	50
	PM Demand[3]	---	---	---	---	750[a]	---	75[b]	100[b]	---	---	150	**75**
F St/23rdSt (SR-178)	**Available Storage ft/ln**	---	625	---	---	---	---	---	600	---	95	250	---
	AM Demand	---	**950[a]**	---	---	---	---	---	200	---	**250[a,b]**	150[b]	---
	PM Demand	---	**1100[a]**	---	---	---	---	---	500[a]	---	**100[a,b]**	200[b]	---
H St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	---	100	250	---
	AM Queue	---	100[b]	---	---	---	---	---	150	---	0[b]	100[b]	---
	PM Queue	---	100[b]	---	---	---	---	---	200	---	25[b]	**325[a,b]**	---
Chester Ave/ 23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	90	90	275	---
	AM Demand	---	**675[a,b]**	---	---	---	---	---	200	**300[a]**	**200[a,b]**	175[b]	---
	PM Demand	---	**775[a,b]**	---	---	---	---	---	175	**450[a]**	75[b]	175[b]	---
L St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	625	75	100	350	---
	AM Demand	---	225[b]	---	---	---	---	---	50	**100**	50[b]	175	---
	PM Demand	---	425[b]	---	---	---	---	---	150	**200**	100[b]	75[b]	---
M St/23rdSt (SR-178)	**Available Storage ft/ln**	---	275	---	---	---	---	---	625	75	100	325	---
	AM Demand	---	**725[a,b]**	---	---	---	---	---	50	50	50	150	---
	PM Demand	---	**875[a,b]**	---	---	---	---	---	100	**150**	125	150	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
3 = Operation may be affected by queue spillback from downstream intersection.
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.

Queue Exceeds Capacity

As shown in Table 16, adequate storage capacity is provided for forecast year 2035 no build conditions during the a.m. and p.m. peak hour with the exception of the following locations:

- **Camino Del Rio Court/Rosedale Highway (SR-58)**
  Westbound Through Lane;
  Northbound Through Lane;
  Southbound Shared Left-Turn/Through Lane; and
  Southbound Right-Turn Lane.
- **SR-99 Southbound Ramps/Rosedale Highway (SR-58)**
  Southbound Left-Turn Lane; and
  Southbound Right-Turn Lane.
- **Buck Owens Boulevard/SR-99 Northbound Ramps – Sillect Avenue**
  Westbound Left-Turn Lane; and
  Northbound Left-Turn Lane.
- **Buck Owens Boulevard – SR-99 Northbound Ramps/24th Street (SR-178)**
  Eastbound Left-Turn Lane;
  Northbound Left-Turn Lane; and
  Southbound Right-Turn Lane.
- **Oak Street/24th Street (SR-178)**
  Eastbound Through Lane;
  Westbound Left-Turn Lane;
  Westbound Through Lane; and
  Northbound Right-Turn Lane.
- **Oak Street/Truxtun Avenue**
  Eastbound Left-Turn Lane;
  Westbound Left-Turn Lane;
  Northbound Left-Turn Lane;
  Northbound Right-Turn Lane; and
  Southbound Right-Turn Lane.
- **H Street/24th Street (SR-178)**
  Northbound Left-Turn Lane.
- **Chester Avenue/24th Street (SR-178)**
  Westbound Through Lane;
  Northbound Left-Turn Lane; and
  Southbound Right-Turn Lane.

- **L Street/24th Street (SR-178)**

  Westbound Through Lane.

- **M Street/24th Street (SR-178)**

  Southbound Right-Turn Lane.

- **F Street/23rd Street (SR-178)**

  Eastbound Through Lane; and

  Southbound Left-Turn Lane.

- **H Street/23rd Street (SR-178)**

  Southbound Through Lane.

- **Chester Avenue/23rd Street (SR-178)**

  Eastbound Through Lane;

  Northbound Right-Turn Lane; and

  Southbound Left-Turn Lane.

- **L Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane.

- **M Street/23rd Street (SR-178)**

  Eastbound Through Lane;

  Northbound Right-Turn Lane.

Forecast year 2035 no build conditions assume the same freeway cross-section geometry as analyzed for existing conditions. Table 17 summarizes forecast year 2035 no build project conditions a.m. and p.m. peak hour LOS of study freeway segments; detailed HCM freeway segment analysis sheets are provided in Appendix D.

Table 17
Forecast Year 2035 No Build
Conditions Freeway Segment AM & PM Peak Hour LOS

Study Segment	AM Peak Hour	PM Peak Hour
	Density – LOS	Density – LOS
Northbound		
California Ave On-Ramp to Rosedale Hwy Off-Ramp	**34.4 – D**	**34.2 – D**
Buck Owens Blvd On-Ramp to Airport Dr Off-Ramp	22.5 – C	**26.2 – D**
Southbound		
Airport Dr On-Ramp to Rosedale Hwy Off-Ramp	**26.3 – D**	**36.5 – E**
Rosedale Hwy On-Ramp to California Ave Off-Ramp	**31.0 – D**	**>45.0 – F**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient freeway segments shown in **bold.**
Source: TRIP Staff.

As shown in Table 17, all four (4) study freeway segments are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2035 no build conditions.

Forecast year 2035 no build project conditions assume the same ramp configurations utilized for existing conditions. Table 18 summarizes forecast year 2035 no build project conditions a.m. and p.m. peak hour LOS of study freeway ramps; detailed HCM freeway ramp analysis sheets are provided in Appendix D.

Table 18
Forecast Year 2035 No Build Project
Conditions Ramp Merge/Diverge AM & PM Peak Hour LOS

Study Ramp	Type of Analysis	AM Peak Hour	PM Peak Hour
		Density – LOS	Density – LOS
Northbound			
24th St Off-Ramp	Diverge	**44.1 – F**	**44.9 – F**
Buck Owens Blvd Off-Ramp	Diverge	**28.9 – D**	26.4 – C
Buck Owens Blvd On-Ramp	Merge	23.6 – C	27.4 – C
Southbound			
Rosedale Hwy Off-Ramp	Diverge	**34.8 – D**	**41.5 – E**
Rosedale Hwy Loop On-Ramp	Merge	**29.6 – D**	**34.5 – D**
Rosedale Hwy Direct On-Ramp	Merge	**31.2 – D**	**39.3 – F**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient ramp shown in **bold.**
Source: TRIP Staff.

As shown in Table 18, five (5) study freeway ramps are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2035 no build conditions.

FORECAST YEAR 2035 WITH PROJECT CONDITIONS

This section analyzes operations along the 24th Street Corridor, assuming one "with project" alternative as discussed previously. Forecast year 2035 with project conditions assume the following improvements to the 24th Street Corridor:

- **Segment A - Oak Street/24th Street Intersection Improvements**

  Improve the northbound Oak Street approach from one left-turn lane, one shared left-turn/through lane and one right-turn lane with overlap phasing to consist of two left-turn lanes, one shared left-turn/through lane and two right-turn lanes with overlap phasing.

  Improve the eastbound 24th Street approach from one left-turn lane, two through lanes and one right-turn lane to consist of one left-turn lane, four through lanes and one right-turn lane with overlap phasing.

  Improve the westbound 24th Street approach from two left-turn lanes, one through lane and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes and one shared through/right-turn lane.

  Improve the southbound Oak Street approach from one shared through/left-turn lane and one right-turn lane to consist of one left-turn lane and one shared through/right-turn lane.

- **Segment B - 24th Street Widening from Oak Street to 24th Street/23rd Street couplet**

  Widen 24th Street from Oak Street to the 24th Street/23rd Street couplet from a four-lane undivided roadway to a six-lane divided roadway with raised median. As part of this improvement, east/west left-turns into the Westchester neighborhood from 24th Street would be accommodated via median breaks at Beech Street, Spruce Street and Cedar Street. Multiple median breaks are provided to disperse left-turn traffic into the neighborhood while still accommodating agency requirements for deceleration and turn storage capacity. Northbound and southbound approaches from all neighborhood streets in Segment B would be restricted to right-turn only.

- **Segment C - 24th Street/23rd Street Couplet Widening**

  Widen the 24th Street/23rd Street couplet, from its origin east of B Street to its terminus at SR-178, from three lanes in each direction to four lanes in each direction.

- **Segment D – SR-99/24th Street Interchange**

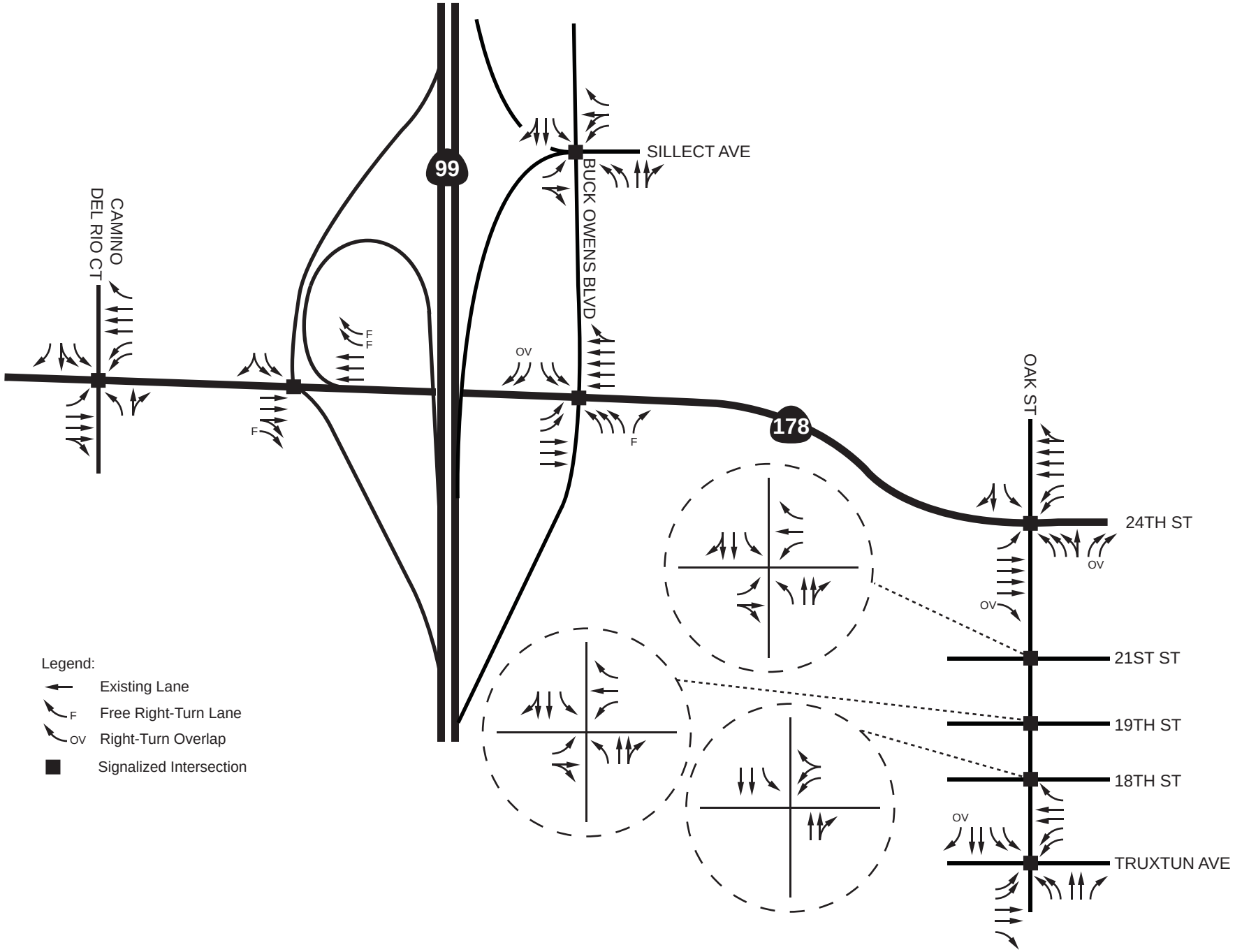
  Buck Owens Boulevard-SR-99 Northbound Off-Ramp/24th Street intersection: Improve the westbound 24th Street approach from three through lanes and one right-turn lane to consist of four through lanes and one shared through/right-turn lane. Two westbound receiving lanes will be accommodated through construction of lanes north of the SR-99 superstructure support pillars in the bay that today only serves a sidewalk. Improve the southbound Buck Owens Boulevard approach from two left-turn lanes and one right-turn lane with overlap phasing to consist of two left-turn lanes and two right-turn lanes with overlap phasing. Improve the SR-99 Northbound off-ramp from two left-turn lanes and one free right-turn lane to consist of three left-turn lanes and one free right-turn lane.

  SR-99 Southbound Ramps/24th Street intersection: Improve the westbound Rosedale Highway (SR-58) to southbound SR-99 loop on-ramp from one lane to consist of two lanes within existing pavement width.

Exhibits 17, 18 and 19 show forecast with project conditions study area intersection geometry. Since the proposed project includes modifications to the S-Curve at C Street, some intersections are created, modified, or eliminated with the redesign of the S-curve. Forecast year 2035 with project conditions a.m. and p.m. peak hour intersection volumes at the study intersections are determined by adjusting traffic volumes where appropriate based on project components listed above. Exhibits 20, 21 and 22 show forecast year 2035 with project conditions a.m. and p.m. peak hour intersection volumes at the study intersections.

Forecast Year 2035 With Project Conditions Traffic Operational Analysis

Table 19 summarizes forecast year 2035 with project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets are contained in Appendix D.

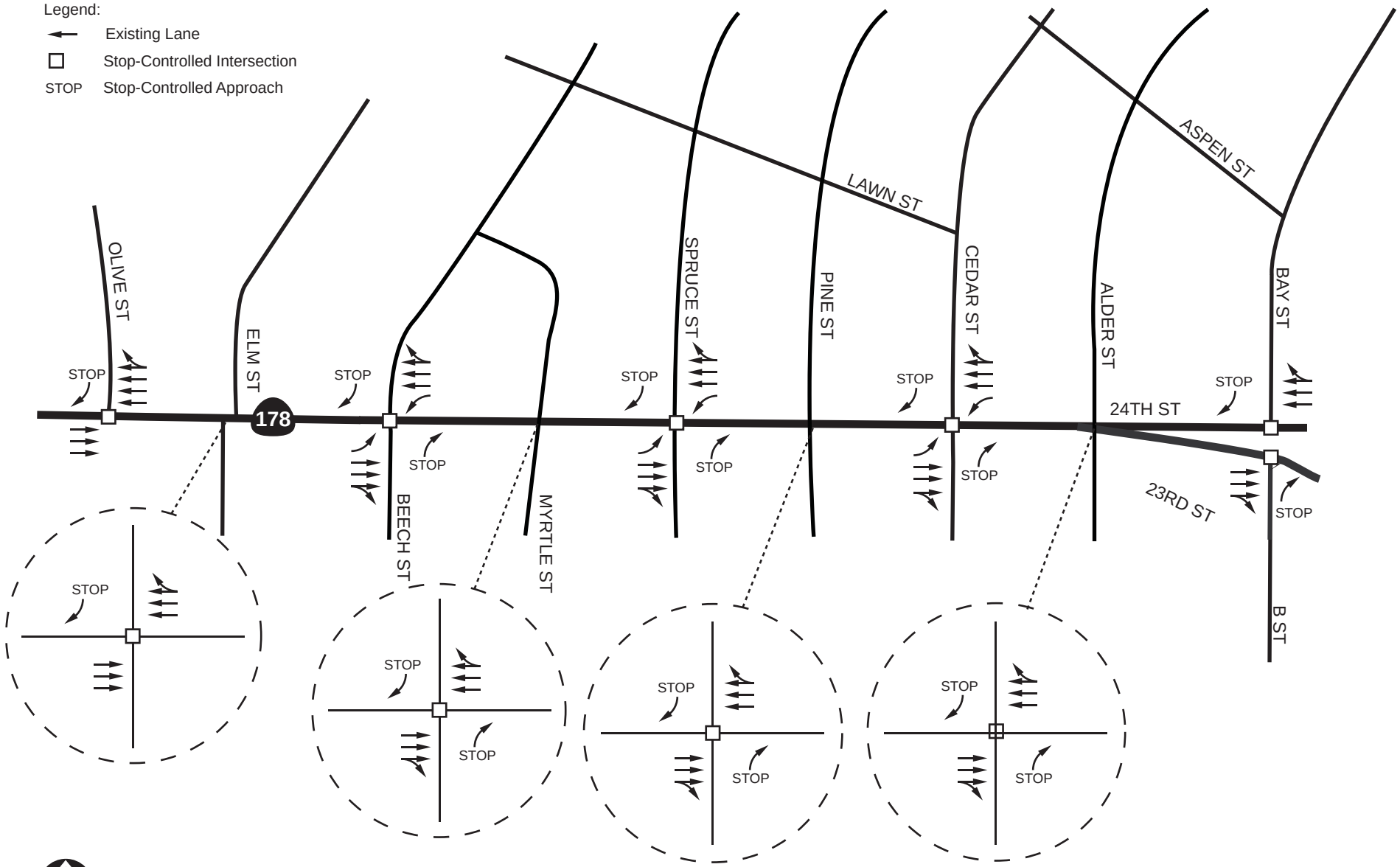


Not to Scale

Forecast With Project 24th Street Geometry- Area 1

H:\pdata\30100816\Project Info\Traffic\Exhibits\Exh17.ai MAY/2010

Exhibit 17

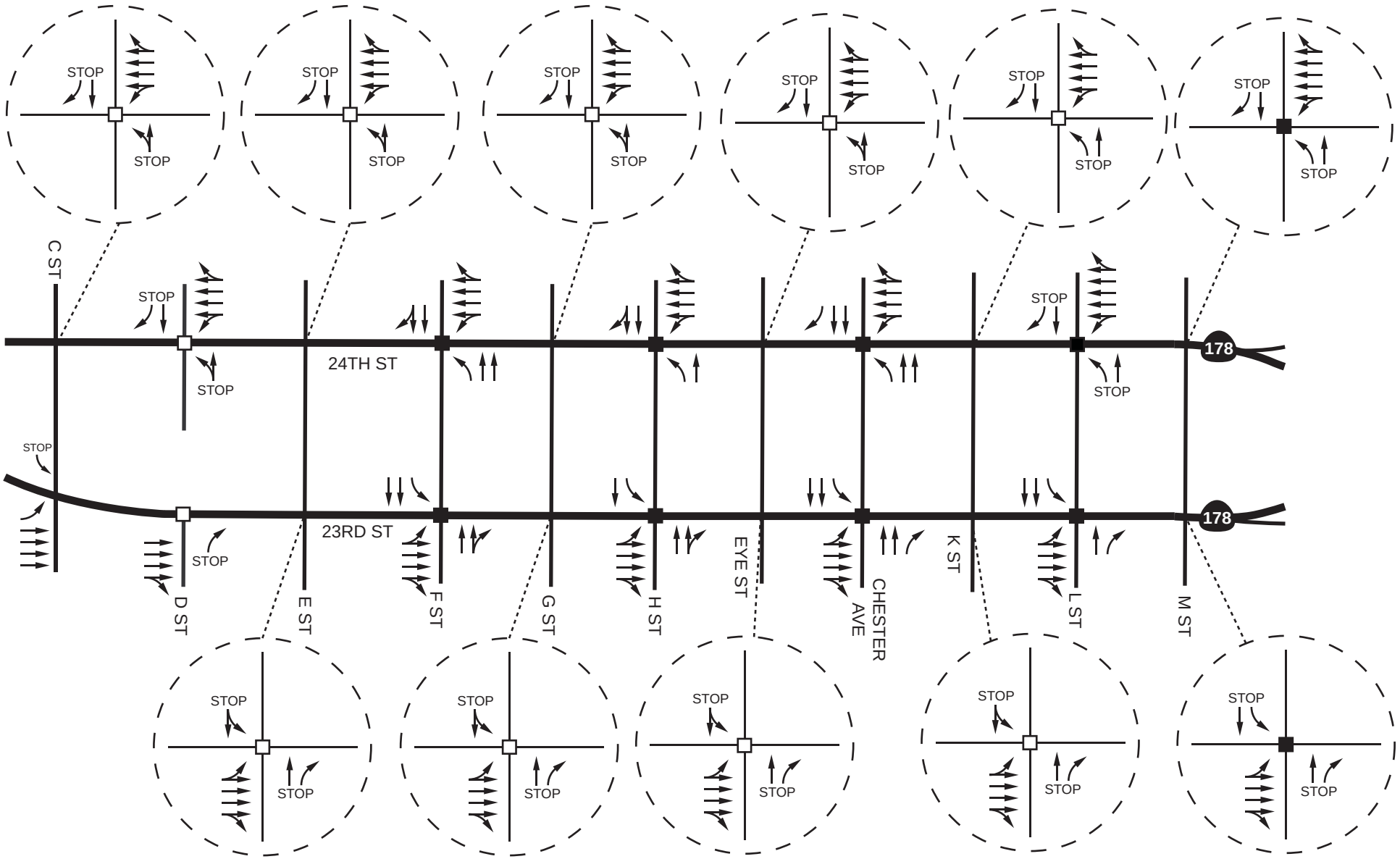


Not to Scale

RBF

Forecast With Project 24th Street Geometry- Area 2

Exhibit 18



Legend:

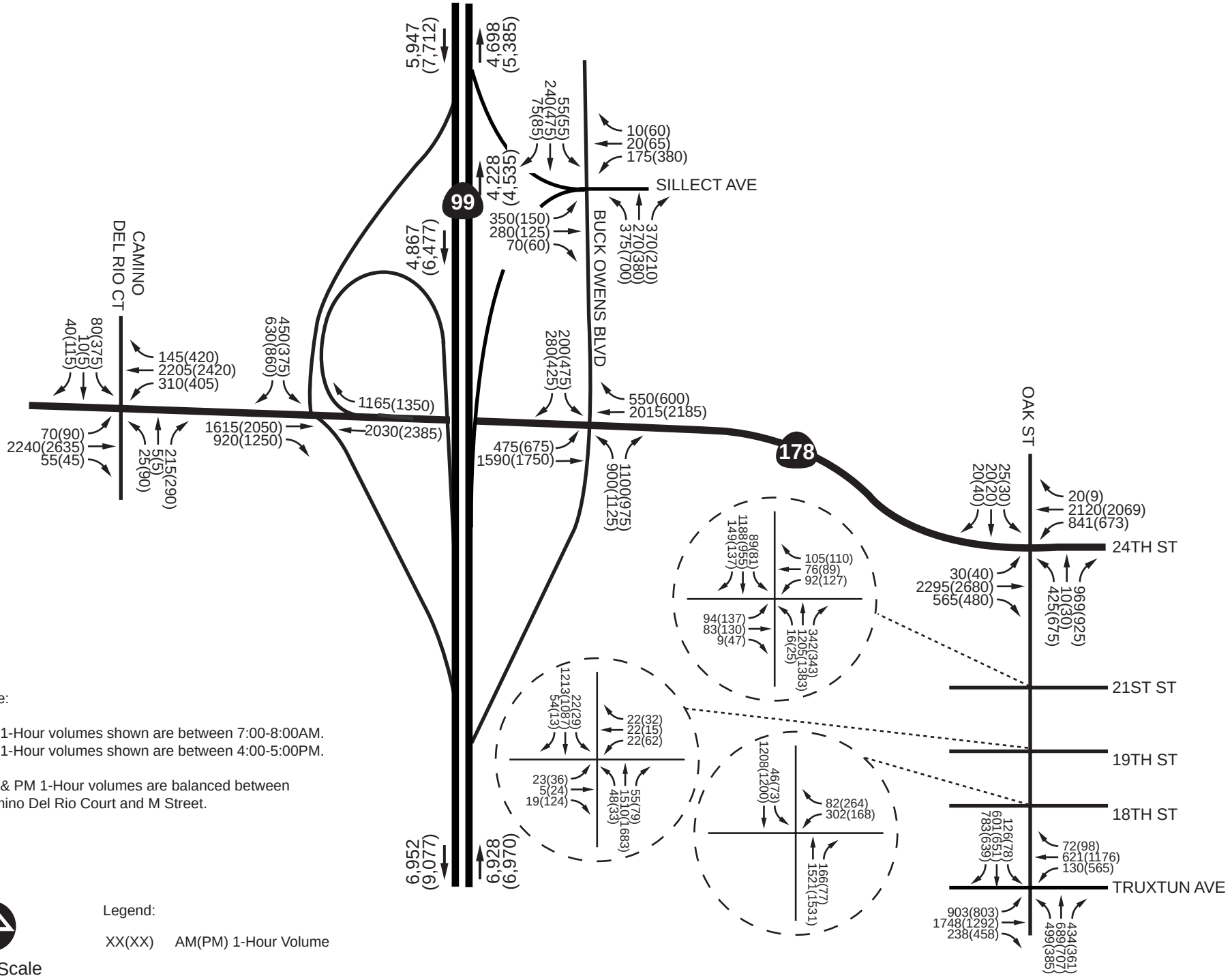
- Existing Lane
- Signalized Intersection
- Stop-Controlled Intersection
- STOP Stop-Controlled Approach

Not to Scale

RBF

Forecast With Project 24th Street Geometry- Area 3

Exhibit 19



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

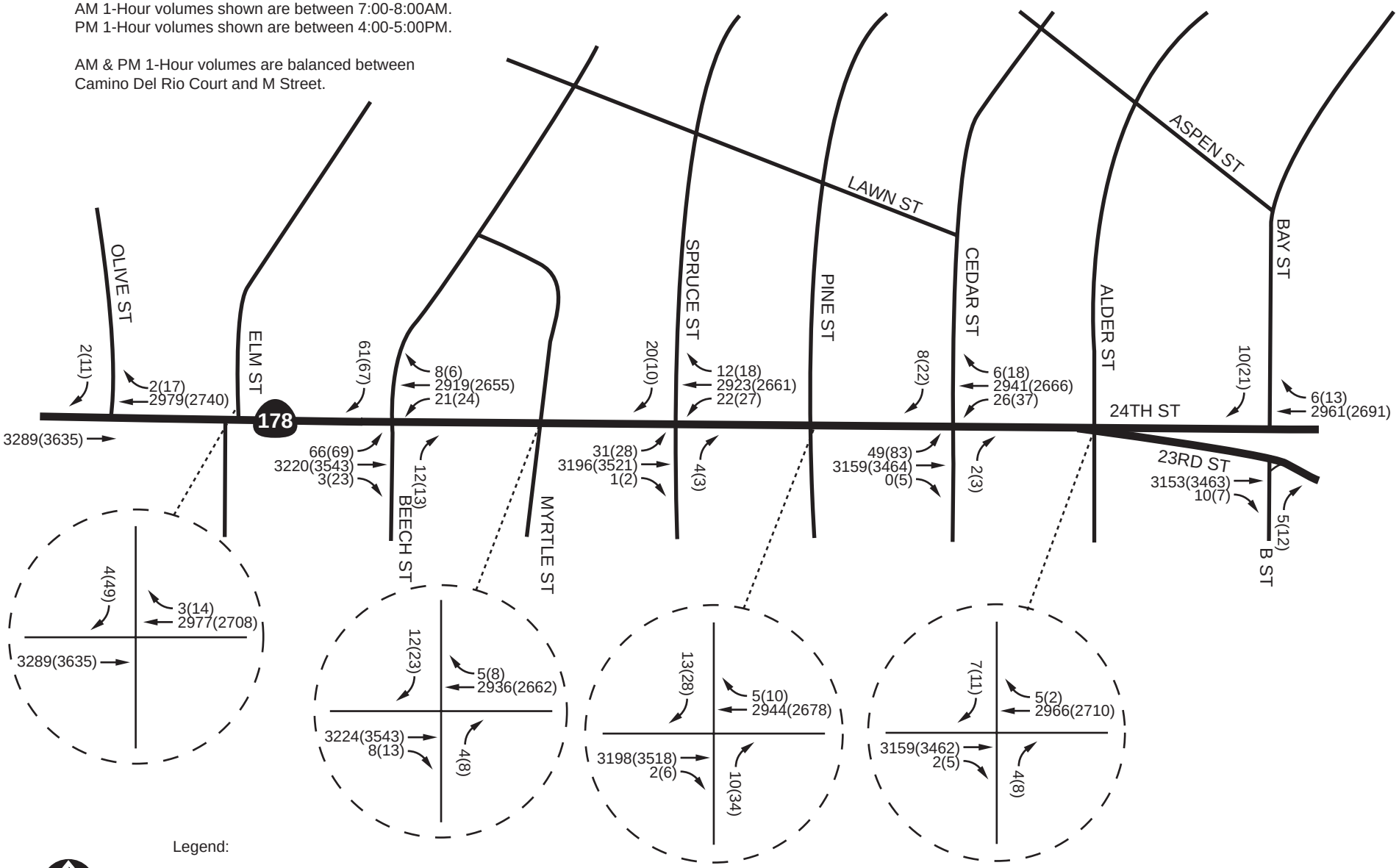
Forecast Year 2035 With Project AM/PM Peak Hour Intersection Volumes - Area 1

Exhibit 20

Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.



Legend:

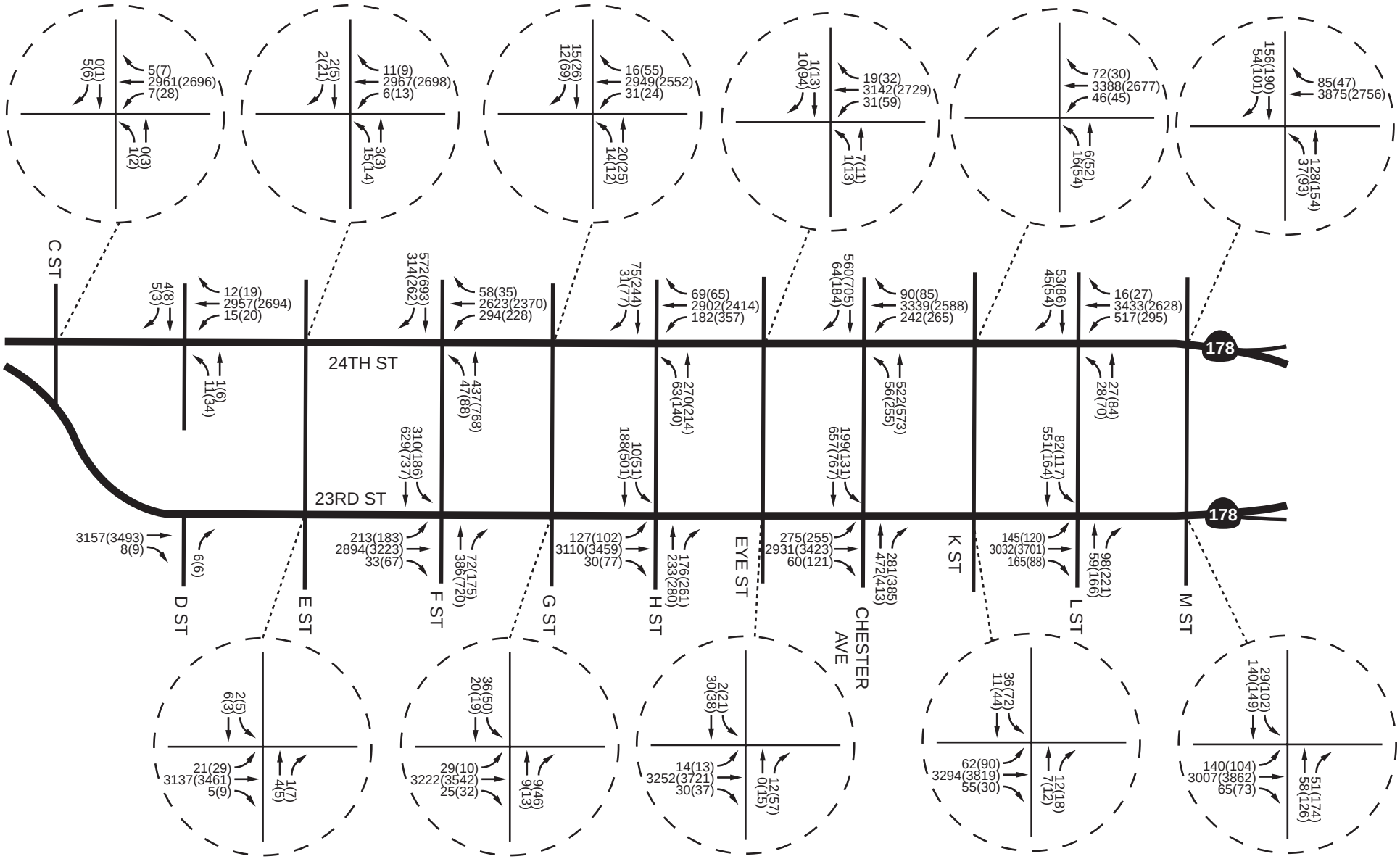
XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

Forecast Year 2035 With Project AM/PM Peak Hour Intersection Volumes - Area 2

Exhibit 21



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

Forecast Year 2035 With Project AM/PM Peak Hour Intersection Volumes - Area 3

Exhibit 22

Table 19
Forecast Year 2035 With Project Conditions AM & PM Peak Hour Intersection LOS

Study Intersection	Forecast Year 2035 No Build		Forecast Year 2035 With Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS
Camino Del Rio Ct/Rosedale Hwy (SR-58) [1]	31.6 – C	***> 80.0 – F***	30.8 – C	***67.0 – E***
SR-99 SB Ramps/Rosedale Hwy (SR-58) [1]	***> 80.0 – F***	***> 80.0 – F***	30.0 – C	***77.4 – E***
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue[1]	***59.6 – E***	***68.9 – E***	**39.4 – D**	**49.0 – D**
Buck Owens Blvd-SR-99 NB Ramps/24th St (SR-178)	***> 80.0 – F***	***> 80.0 – F***	22.4 – C	**36.7 – D**
Oak St/24th St (SR-178)	***> 80.0 – F***	***> 80.0 – F***	30.3 – C	**41.5 – D**
Oak Street/21st Street[1]	14.3 – B	21.3 – C	15.9 – B	21.3 – C
Oak Street/19th Street[1]	5.9 – A	10.3 – B	5.5 – A	11.5 – B
Oak Street/18th Street[1]	15.3 – B	15.4 – B	11.6 – B	13.9 – B
Oak Street/Truxtun Avenue[1]	***> 80.0 – F***	***> 80.0 – F***	**44.7 – D**	**54.0 – D**
Olive St/24th St (SR-178)[2]	***42.4 – E***	***39.8 – E***	15.8 – C	15.3 – C
Elm St/24th St (SR-178)[2,3]	***> 50.0 – F***	***> 50.0 – F***	21.4 – C	23.4 – C
Beech St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	**28.3 – D**	24.8 – C
Myrtle St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	23.9 – C	**28.4 – D**
Spruce St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	23.5 – C	**27.0 – D**
Pine St/24th St (SR-178)[2,3]	***> 50.0 – F***	***> 50.0 – F***	24.3 – C	**33.9 – D**
Cedar St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	22.8 – C	**26.3 – D**
Alder St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	23.1 – C	**27.2 – D**
B St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	21.9 – C	20.4 – C
C St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	16.6 – C	***> 50.0 – F***
D St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
E St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***38.2 – E***
F St/24th St (SR-178)	***63.2 – E***	***56.5 – E***	26.0 – C	25.9 – C
G St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
H St/24th St (SR-178)	***65.4 – E***	30.1 – C	4.2 – A	6.6 – A
Eye St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
Chester St/24th St (SR-178)	***> 80.0 – F***	***59.0 – E***	25.3 – C	34.4 – C
K St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
L St/24th St (SR-178)[4,5]	**38.5 – D**	12.0 – B	2.9 – A	4.3 – A
M St/24th St (SR-178)[5]	***> 80.0 – F***	***41.0 – D***	17.2 – B	17.0 – B
D St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	16.9 – C	18.7 – C
E St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
F St/23rd St (SR-178)	***> 80.0 – F***	***> 80.0 – F***	34.4 – C	***58.7 – E***
G St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
H St/23rd St (SR-178)	***72.4 – E***	***> 80.0 – F***	23.0 – C	21.6 – C
Eye St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
Chester St/23rd St (SR-178)	***> 80.0 – F***	***> 80.0 – F***	24.2 – C	32.6 – C
K St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
L St/23rd St (SR-178)	29.2 – C	***> 80.0 – F***	9.0 – A	11.6 – B
M St/23rd St (SR-178)	30.6 – C	***> 80.0 – F***	4.1 – A	9.8 – A

Note: SB = southbound, NB = northbound. Delay shown in seconds; deficient intersection operation shown in **bold**.
1 = Delay results may change where no geometric changes occur due to optimized traffic signal timing and phasing.
2 = LOS and delay for stop-controlled intersections are based worst case minor street approach.
3 = LOS analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.
4 = Counts at L Street/24th Street collected before intersection signalized in August 2009.
5 = Operation may be affected by queue spillback from downstream intersection.

LOS D LOS E or F

As shown in Table 19, assuming implementation of the proposed project, twenty-three (23) study intersections are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2035 with project conditions.

The signalized Camino Del Rio Court/Rosedale Highway (SR-58) and SR-99 Southbound Ramps/Rosedale Highway (SR-58) intersections are forecast to remain operating deficiently with implementation of the proposed project; another project is under review to improve operation at these two intersections.

The signalized Buck Owens Boulevard/SR-99 Northbound Ramps-Sillect Avenue intersection is forecast to remain operating deficiently with implementation of the proposed project; however, with project operations are better than no build conditions.

The signalized Buck Owens Boulevard-SR-99 Northbound Ramps/24th Street and Oak Street/24th Street intersections are forecast to remain operating deficiently with implementation of the proposed project; however, with project operations are better than no build conditions and better than existing conditions.

The signalized Oak Street/Truxtun Avenue intersection is forecast to operate at LOS D or better with City planned improvements (through the Traffic Impact Fee Program) along Truxtun Avenue. Even though the Oak Street/Truxtun Avenue intersection does not meet the City LOS performance criteria, with implementation of the project the intersection is forecast to operate better than no-build and existing conditions.

While notable delay is shown at minor street crossings of 24th and 23rd Streets, negligible delay is experienced by motorists traveling east/west on SR-178 (24th Street/23rd Street). Deficient intersections shown in Table 19 are typically minor street intersections where local circulation, connectivity and emergency access are maintained, and at intersections that do not govern operations for the majority of the 24th Street Corridor traffic.

The signalized F Street/23rd Street intersection is forecast to remain operating deficiently with implementation of the proposed project; however, the intersection will operate better than no build conditions. While widening of the northbound F Street approach at 23rd Street can help achieve LOS D during the p.m. peak hour for forecast year 2035 conditions, this improvement is considered infeasible and not included in the proposed project. Additional widening of the northbound F Street approach at 23rd Street is considered infeasible due to the likely right-of-way acquisition of the Circle K Gas Station/Convenience Market. Widening of the eastbound 23rd Street approach at F Street is considered infeasible due to the right-of-way acquisition required and to maintain consistency in roadway cross-section width with adjacent segments. The City of Bakersfield can continue to monitor the F Street/23rd Street intersection, and determine if additional right-of-way is desired as redevelopment occurs at adjacent corner land uses.

While the upstream F Street/23rd Street intersection is forecast to operate deficiently, the signalized H Street/23rd Street intersection is forecast to operate acceptably due to relatively lower cross-street traffic volumes than at F Street.

HCM 95th percentile queue analysis was prepared utilizing the Synchro analysis software at major signalized study intersections. Table 20 summarizes forecast year 2035 with project 95th percentile queue spillback at the study intersections during both the a.m. and p.m. peak hours; detailed queue spillback analysis sheets are provided in Appendix E.

Table 20
Forecast Year 2035 With Project Conditions Queuing Analysis

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Camino Del Rio Ct/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	230	1250	---	290	425	---	150	300	---	250[2]		50
	AM Demand	135[a,b]	375	---	225[a,b]	425[b]	---	0	**350[a]**	---	75		25
	PM Demand	**200[a]**	1225[a]	---	175[b]	225[b]	---	150	**450[a]**	---	**275**		**125**
SR-99 SB Ramps/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	---	450	450	---	750	---	---	---	---	450	---	1300
	AM Demand	---	150[b]	325[b]	---	475	---	---	---	---	**550[a]**	---	1000[a]
	PM Demand	---	**475[b]**	**600[b]**	---	**1000[a,b]**	---	---	---	---	325	---	1300[a]
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	**Available Storage ft/ln**	925	1100	---	190	750	190	200	1000	---	115	1100	---
	AM Demand	475[a]	400[a]	---	150	150	25	**225[a,b]**	150[b]	---	100	175	---
	PM Demand	225	300[a]	---	**275**	275	25	**400[a]**	250	---	100	300	---
Buck Owens Blvd- SR-99 NB Ramps/ 24th St (SR-178)	**Available**	280[1]	625	---	---	1300	---	450	---	---	400	---	550
	AM Demand	**300[b]**	250	---	---	325	---	325	---	---	125[b]	---	150[b]
	PM Demand	**375[b]**	200[b]	---	---	600[a]	---	**500[a]**	---	---	275	---	300
Oak St/24th St (SR-178)	**Available Storage ft/ln**	250	1300	450	700	700	---	350	---	400	50	175	---
	AM Demand	50[b]	600	400	475[a]	300	---	200[a]	---	**550**	50	50	---
	PM Demand	75[b]	825[a]	100	450[a]	375	---	350[a]	---	**550**	**75**	50	---
Oak St/Truxtun Ave	**Available Storage ft/ln**	170	2500	---	260	600	---	150	1600	275	100	575	120
	AM Demand	**525[a]**	725[a]	---	125[a]	275	---	**350[a]**	350	**425**	100[a,b]	375[a]	**950[a]**
	PM Demand	**525[a]**	425	---	**400[a]**	450	---	**300[a]**	400	100	75[b]	450[a,b]	**450[a,b]**
F St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	95	250	---	---	600	---
	AM Demand	---	---	---	---	600[a]	---	25[b]	150[b]	---	---	425[a]	---
	PM Demand	---	---	---	---	350[a]	---	50[b]	50[b]	---	---	450[a]	---
H St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	55	250	---	---	300	---
	AM Queue	---	---	---	---	25	---	25[b]	75[b]	---	---	50	---
	PM Queue	---	---	---	---	75[b]	---	50[b]	50[b]	---	---	125	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
1 = Total queue storage of 560 feet in two turn lanes (average of 280 feet/ln)
2 = Total queue storage of 500 feet in two lanes (average of 250 feet/ln)
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.
Queue Exceeds Capacity

Table 20
Forecast Year 2035 With Project Conditions Queuing Analysis (continued)

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Chester Ave/ 24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	90	275	---	---	650	75
	AM Demand	---	---	---	---	**675[a]**	---	50[b]	75[b]	---	---	275[a]	50
	PM Demand	---	---	---	---	550[a]	---	**275[a,b]**	100[b]	---	---	350[a]	**150**
L St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	275	---	125	325	---	---	650	50
	AM Demand[3]	---	---	---	---	25	---	25[b]	25[b]	---	---	75	50
	PM Demand[3]	---	---	---	---	50	---	25[b]	25[b]	---	---	75	50
M St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	---	---	100	325	---	---	650	50
	AM Demand	---	---	---	---	550	---	25[b]	100[b]	---	---	150	**75**
	PM Demand	---	---	---	---	375	---	75[b]	100[b]	---	---	150	**100**
F St/23rdSt (SR-178)	**Available Storage ft/ln**	---	625	---	---	---	---	---	600	---	95	250	---
	AM Demand	---	**700[a]**	---	---	---	---	---	200	---	**275[a,b]**	175[a]	---
	PM Demand	---	**800[a]**	---	---	---	---	---	475[a]	---	**150[a,b]**	200[b]	---
H St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	---	100	250	---
	AM Queue	---	25[b]	---	---	---	---	---	175	---	0[b]	125[b]	---
	PM Queue	---	50[b]	---	---	---	---	---	200	---	25[b]	**525[a,b]**	---
Chester Ave/ 23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	90	90	275	---
	AM Demand	---	**675[a]**	---	---	---	---	---	200	**325[a]**	**200[a,b]**	75[b]	---
	PM Demand	---	**825[a,b]**	---	---	---	---	---	175	**450[a]**	75[a,b]	50[b]	---
L St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	625	75	100	350	---
	AM Demand	---	50[b]	---	---	---	---	---	75	**100**	50[b]	200[b]	---
	PM Demand	---	75[b]	---	---	---	---	---	150	**225[a]**	**125[a,b]**	75[b]	---
M St/23rdSt (SR-178)	**Available Storage ft/ln**	---	275	---	---	---	---	---	625	75	100	325	---
	AM Demand	---	50	---	---	---	---	---	75	50	0[b]	25	---
	PM Demand	---	75[a,b]	---	---	---	---	---	125	**175**	75	50	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
3 = Operation may be affected by queue spillback from downstream intersection.
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.

Queue Exceeds Capacity

As shown in Table 20, adequate storage capacity is provided for forecast year 2035 with project conditions during the a.m. and p.m. peak hour with the exception of the following locations:

- **Camino Del Rio Court/Rosedale Highway (SR-58)**
  - Eastbound Left-Turn Lane;
  - Northbound Through Lane;
  - Southbound Shared Left-Turn/Through Lane; and
  - Southbound Right-Turn Lane.
- **SR-99 Southbound Ramps/Rosedale Highway (SR-58)**
  - Eastbound Through Lane;
  - Eastbound Right-Turn Lane;
  - Westbound Through Lane; and
  - Southbound Left-Turn Lane.
- **Buck Owens Boulevard/SR-99 Northbound Ramps – Sillect Avenue**
  - Westbound Left-Turn Lane; and
  - Northbound Left-Turn Lane.
- **Buck Owens Boulevard – SR-99 Northbound Ramps/24th Street (SR-178)**
  - Eastbound Left-Turn Lane; and
  - Northbound Left-Turn Lane.
- **Oak Street/24th Street (SR-178)**
  - Northbound Right-Turn Lane; and
  - Southbound Left-Turn Lane.
- **Oak Street/Truxtun Avenue**
  - Eastbound Left-Turn Lane;
  - Westbound Left-Turn Lane;
  - Northbound Left-Turn Lane;
  - Northbound Right-Turn Lane; and
  - Southbound Right-Turn Lane.
- **Chester Avenue/24th Street (SR-178)**
  - Westbound Through Lane;
  - Northbound Left-Turn Lane; and
  - Southbound Right-Turn Lane.
- **M Street/24th Street (SR-178)**
  - Southbound Right-Turn Lane.

- **F Street/23rd Street (SR-178)**

  Eastbound Through Lane; and

  Southbound Left-Turn Lane.

- **H Street/23rd Street (SR-178)**

  Southbound Through Lane.

- **Chester Avenue/23rd Street (SR-178)**

  Eastbound Through Lane;

  Northbound Right-Turn Lane; and

  Southbound Left-Turn Lane.

- **L Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane; and

  Southbound Left-Turn Lane.

- **M Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane.

Since the proposed project does not propose to add mainline lanes to SR-99, forecast year 2035 with project conditions assume the same freeway cross-section geometry as analyzed for existing conditions. Table 21 summarizes forecast year 2035 with project conditions a.m. peak hour and p.m. peak hour LOS of the study freeway segments; detailed HCM freeway segment analysis sheets are provided in Appendix D.

Table 21
Forecast Year 2035 With Project Conditions
Freeway Segment AM & PM Peak Hour LOS

Study Segment	Forecast Year 2035 No Build		Forecast Year 2035 With Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Density – LOS	Density – LOS	Density – LOS	Density – LOS
Northbound				
California Ave On-Ramp to Rosedale Hwy Off-Ramp	**34.4 – D**	**34.2 – D**	**34.4 – D**	**34.2 – D**
Buck Owens Blvd On-Ramp to Airport Dr Off-Ramp	22.5 – C	**26.2 – D**	22.5 – C	**26.2 – D**
Southbound				
Airport Dr On-Ramp to Rosedale Hwy Off-Ramp	**26.3 – D**	**36.5 – E**	**26.3 – D**	**36.5 – E**
Rosedale Hwy On-Ramp to California Ave Off-Ramp	**31.0 – D**	**>45.0 – F**	**31.0 – D**	**>45.0 – F**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient freeway segments shown in **bold.**
Source: TRIP Staff.

As shown in Table 21, all four (4) study freeway segments are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2035 with project conditions. However, note the proposed project is not forecast to further degrade operations of the SR-99 study freeway segments for forecast year 2035 with project conditions.

Forecast year 2035 with project conditions assume project-related improvements to the Northbound SR-99 Off-Ramp to 24th Street-Rosedale Highway, the remaining ramps remain unchanged from current geometric configurations. Table 22 summarizes forecast year 2035 with project conditions a.m. and p.m. peak hour LOS of the study freeway ramps; detailed HCM freeway ramp analysis sheets are provided in Appendix D.

Table 22
Forecast Year 2035 With Project Conditions
Ramp Merge/Diverge AM & PM Peak Hour LOS

Study Ramp	Type of Analysis	Forecast Year 2035 No Build		Forecast Year 2035 With Project	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
		Density – LOS	Density – LOS	Density – LOS	Density – LOS
Northbound					
24th St Off-Ramp	Diverge	**44.1 – F**	**44.9 – F**	22.5 – C	23.4 – C
Buck Owens Blvd Off-Ramp	Diverge	**28.9 – D**	26.4 – C	**28.9 – D**	26.4 – C
Buck Owens Blvd On-Ramp	Merge	23.6 – C	27.4 – C	23.6 – C	27.4 – C
Southbound					
Rosedale Hwy Off-Ramp	Diverge	**34.8 – D**	**41.5 – E**	**34.8 – D**	**41.5 – E**
Rosedale Hwy Loop On-Ramp	Merge	**29.6 – D**	**34.5 – D**	**29.6 – D**	**34.5 – D**
Rosedale Hwy Direct On-Ramp	Merge	**31.2 – D**	**39.3 – F**	**31.2 – D**	**39.3 – F**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient ramp shown in **bold.**
Source: TRIP Staff.

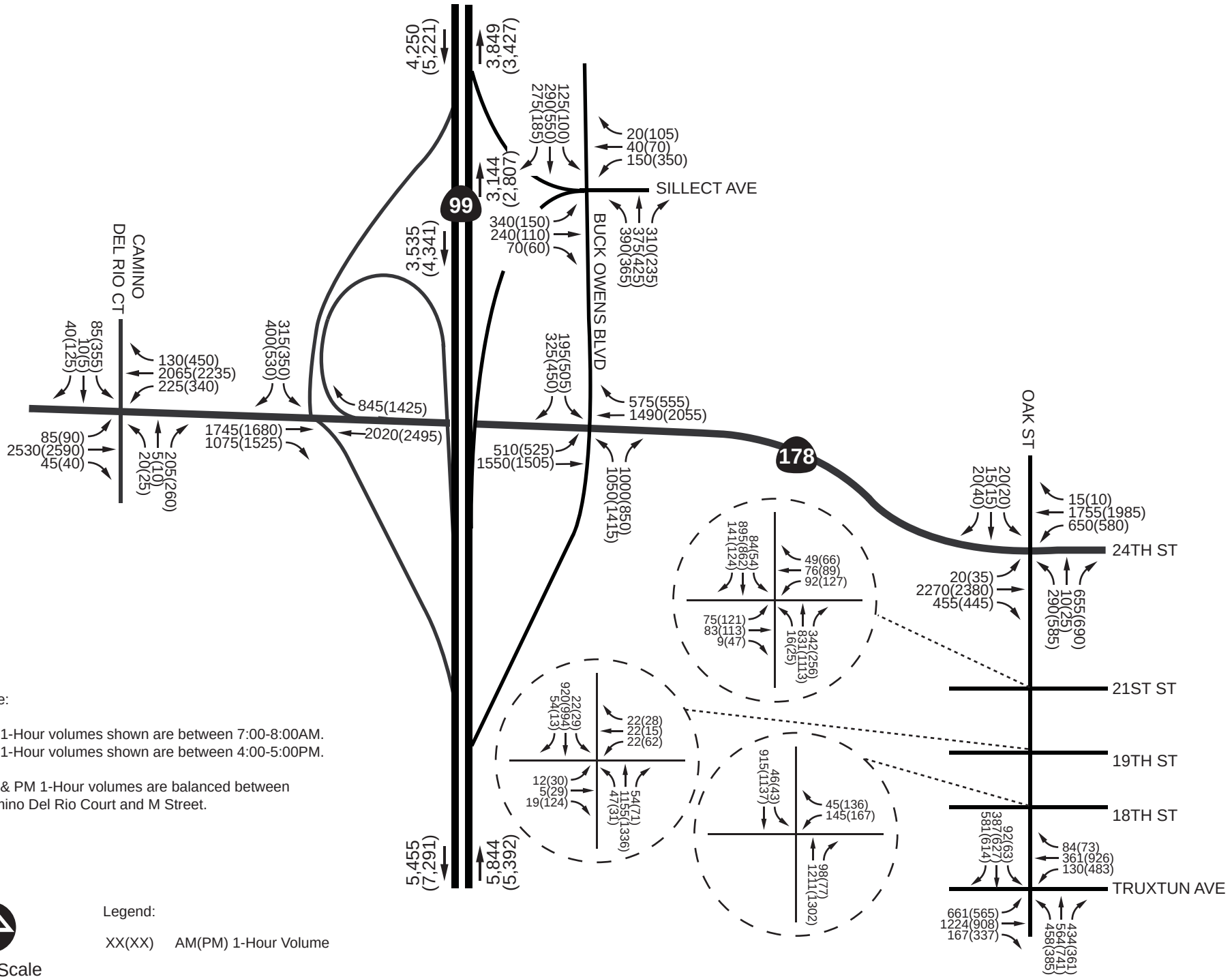
As shown in Table 22, four (4) study freeway ramp influence areas are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2035 no build conditions. The proposed project is forecast to improve the 24th Street northbound off-ramp to acceptable operations, and is not forecast to further degrade operations at the remaining deficient SR-99 study freeway ramps for forecast year 2035 with project conditions. Improved operations at the northbound SR-99 off-ramp at 24th Street are mainly due to addition of a 1,300 feet long auxiliary lane and changing a single lane exit to a two-lane exit.

FORECAST YEAR 2015 NO BUILD CONDITIONS

This section analyzes the impact of near-range, cumulative growth along the 24th Street Corridor. Forecast year 2015 traffic volumes are based on post-processed Kern COG model runs provided by Thomas Roads Improvement Program (TRIP) staff. Forecast Year 2015 no build conditions assume no geometric changes from existing conditions.

Forecast year 2015 no build traffic volumes are based on Kern COG model runs as described above. In some cases forecast year 2015 traffic volumes are greater than forecast year 2035 traffic volumes. Higher year 2015 traffic volumes are forecast since two key roadway improvement projects assumed in the 2035 model are not anticipated to be completed by 2015. The Centennial project is not expected to be fully constructed until 2017, and construction of SR-204 as a freeway between SR-178 and SR-99 which is not anticipated to occur until the long-range year (year 2035). Because these two projects are not in the 2015 model, 2015 volumes are higher than 2035 volumes on some portions of 24th Street, particularly around the SR-99/24th Street interchange.

Exhibits 23, 24 and 25 show forecast year 2015 no build conditions a.m. peak hour and p.m. peak hour traffic volumes at the study intersections.



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

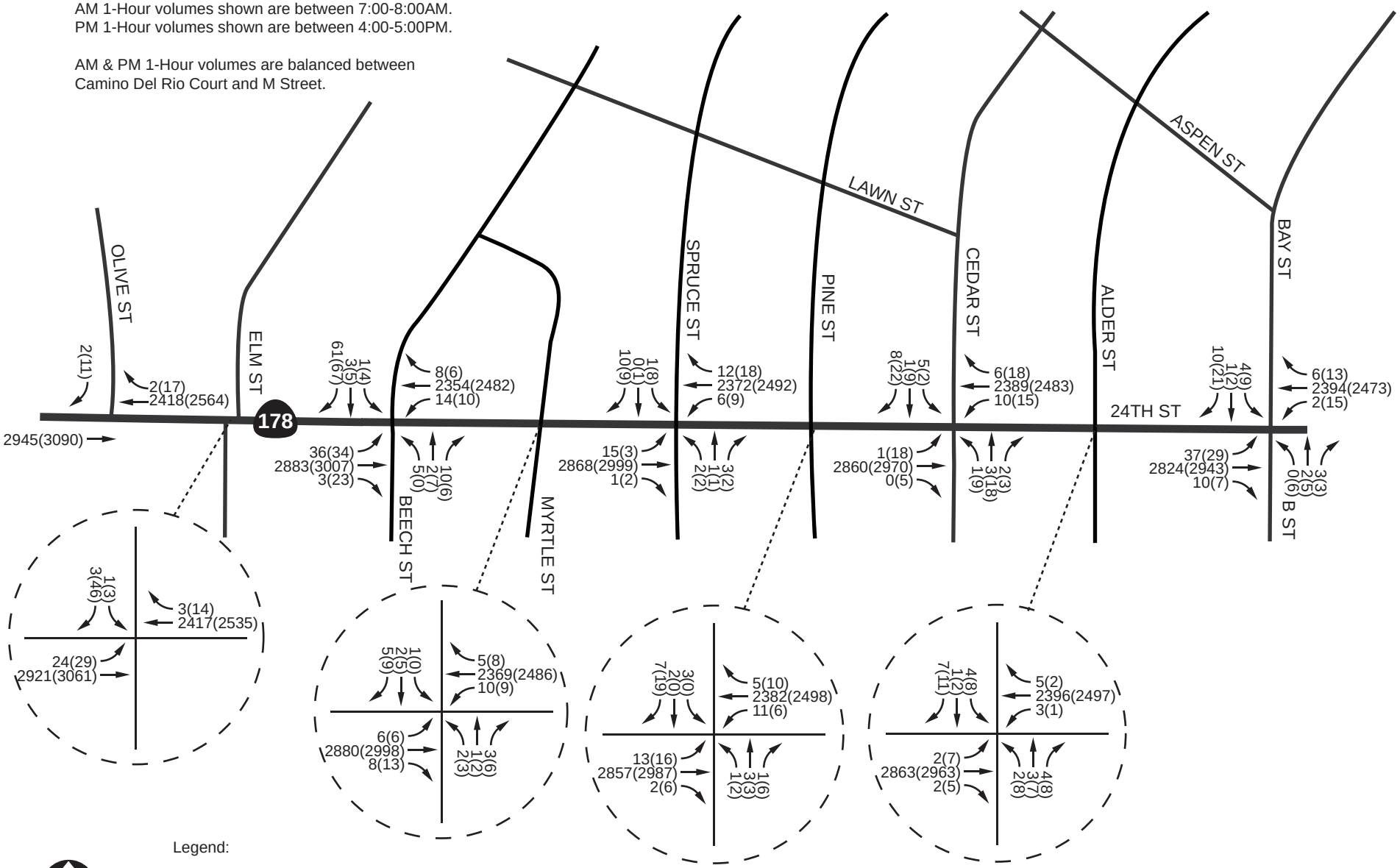
Forecast Year 2015 No Build AM/PM Peak Hour Intersection Volumes - Area 1

Exhibit 23

Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.



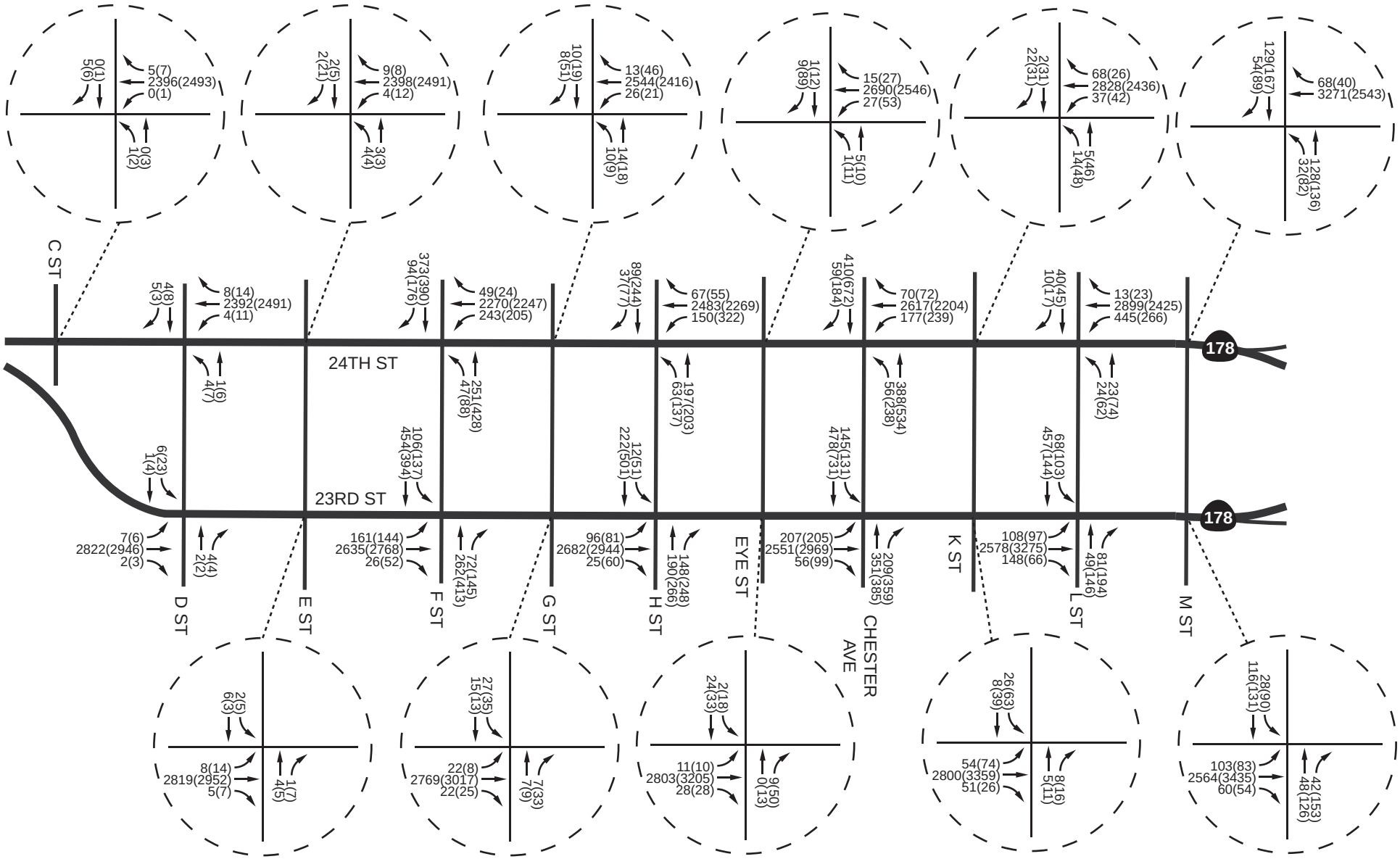
Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

Forecast Year 2015 No Build AM/PM Peak Hour Intersection Volumes - Area 2

Exhibit 24



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

Forecast Year 2015 No Build AM/PM Peak Hour Intersection Volumes - Area 3

Exhibit 25

Forecast Year 2015 No Build Conditions Traffic Operational Analysis

Table 23 summarizes forecast year 2015 no build conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets are contained in Appendix D.

Table 23
Forecast Year 2015 No Build Conditions
AM & PM Peak Hour Intersection LOS

Study Intersection	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS
Camino Del Rio Ct/Rosedale Hwy (SR-58)	28.6 – C	***72.6 – E***
SR-99 SB Ramps/Rosedale Hwy (SR-58)	**49.3 – D**	***78.6 – E***
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	***65.2 – E***	**44.6 – D**
Buck Owens Blvd-SR-99 NB Ramps/24th St (SR-178)	***65.0 – E***	***> 80.0 – F***
Oak St/24th St (SR-178)	***> 80.0 – F***	***> 80.0 – F***
Oak Street/21st Street	13.9 – B	18.1 – B
Oak Street/19th Street	6.9 – A	9.8 – A
Oak Street/18th Street	11.1 – B	10.3 – B
Oak Street/Truxtun Avenue	**49.4 – D**	***78.1 – E***
Olive St/24th St (SR-178)[1]	**28.1 – D**	**33.9 – D**
Elm St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Beech St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Myrtle St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Spruce St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Pine St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Cedar St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Alder St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
B St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
C St/24th St (SR-178)[1,2]	**31.1 – D**	***> 50.0 – F***
D St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
E St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
F St/24th St (SR-178)	14.7 – B	17.1 – B
G St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
H St/24th St (SR-178)	7.0 – A	15.9 – B
Eye St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Chester St/24th St (SR-178)	**51.3 – D**	**42.6 – D**
K St/24th St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
L St/24th St (SR-178)[3,4]	12.1 – B	10.8 – B
M St/24th St (SR-178)[4]	***> 80.0 – F***	25.9 – C
D St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
E St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
F St/23rd St (SR-178)	**45.5 – D**	***> 80.0 – F***
G St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
H St/23rd St (SR-178)	16.6 – B	**51.2 – D**
Eye St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
Chester St/23rd St (SR-178)	**44.2 – D**	***> 80.0 – F***
K St/23rd St (SR-178)[1,2]	***> 50.0 – F***	***> 50.0 – F***
L St/23rd St (SR-178)	10.0 – B	**38.3 – D**
M St/23rd St (SR-178)	11.8 – B	***79.5 – E***

Note: SB = southbound, NB = northbound. Delay shown in seconds; deficient intersection operation shown in **bold**.
1 = LOS and delay for stop-controlled intersections are based worst case minor street approach.
2 = LOS analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.
3 = Counts at L Street/24th Street collected before intersection signalized in August 2009.
4 = Operation may be affected by queue spillback from downstream intersection.

LOS D

LOS E or F

As shown in Table 23, thirty-four (34) study intersections are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2015 no build conditions.

While notable delay is shown at minor street crossings of 24th and 23rd Streets, negligible delay is experienced by motorists traveling east/west on 24th Street.

While the upstream and downstream intersections are forecast to operate deficiently, acceptable operations are forecast at the signalized H Street/23rd Street intersection due to relatively lower cross-street traffic volumes than at adjacent intersections.

While the upstream and downstream intersections are forecast to operate deficiently, acceptable operations are forecast at the signalized L Street/24th Street intersection due to relatively lower cross-street traffic volumes than at adjacent intersections.

HCM 95th percentile queue analysis was prepared utilizing the Synchro analysis software at major signalized study intersections. Table 24 summarizes forecast year 2015 no build 95th percentile queue spillback at the study intersections during both the a.m. and p.m. peak hours; detailed queue spillback analysis sheets are provided in Appendix E.

Table 24
Forecast Year 2015 No Build Conditions Queuing Analysis

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Camino Del Rio Ct/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	230	1250	---	290	425	250	150	300	---	250[2]		50
	AM Demand	100[a,b]	1025[a]	---	125[a,b]	400[b]	25[b]	50	**475[a]**	---	75		25
	PM Demand	200[a]	1125[a]	---	250[a,b]	400[b]	25[b]	50	**600[a]**	---	**325**		**125**
SR-99 SB Ramps/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	---	450	450	---	750	---	---	---	---	450	---	1300
	AM Demand	---	0[b]	50[b]	---	100[b]	---	---	---	---	**625[a]**	---	825[a]
	PM Demand	---	125[b]	0[b]	---	325[b]	---	---	---	---	**675[b]**	---	1100[a]
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	**Available Storage ft/ln**	925	1100	---	190	750	190	200	1000	---	115	1100	---
	AM Demand	325	275	---	125	125	25	**325[a]**	250	---	**250[a]**	200	---
	PM Demand	200	225	---	**250**	275	50	200	300	---	**225[a]**	450[a]	---
Buck Owens Blvd- SR-99 NB Ramps/ 24th St (SR-178)	**Available Storage ft/ln**	280[1]	625	---	---	1300	500	700	---	---	400	---	550
	AM Demand	**425[a,b]**	575[b]	---	---	675[a]	450	**750[a]**	---	---	75	---	325[a]
	PM Demand	**425[a,b]**	375[b]	---	---	800[a,b]	150[b]	**1175[a]**	---	---	225	---	**600[a]**
Oak St/24th St (SR-178)	**Available Storage ft/ln**	200	1300	1000	300	675	---	900	---	280	---	175	50
	AM Demand	25[b]	**1500[a]**	50	**525[a]**	650	---	300[a]	---	**950[a]**	---	75	25
	PM Demand	50[b]	**1650[a]**	250	**450[a]**	**875**	---	650[a]	---	**1175[a]**	---	75	25
Oak St/Truxtun Ave	**Available Storage ft/ln**	170	2500	150	260	600	260	150	1600	275	100	575	120
	AM Demand	**375[a]**	650[a]	125	75	175	100	**225**	250	**450[a]**	75[b]	200	**600[a]**
	PM Demand	**475[a]**	475[a]	**275**	**300[a]**	475[a]	75	**275[a]**	325	**350**	50[b]	450[a]	**575[a]**
F St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	95	250	---	---	600	---
	AM Demand	---	---	---	---	50[b]	---	50[b]	100[b]	---	---	200	---
	PM Demand	---	---	---	---	75[b]	---	75[b]	150[b]	---	---	250[a]	---
H St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	55	250	---	---	300	
	AM Queue	---	---	---	---	25[b]	---	50[b]	175[b]	---	---	50	
	PM Queue	---	---	---	---	225[b]	---	**125[b]**	175[b]	---	---	100	

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
1 = Total queue storage of 560 feet in two turn lanes (average of 280 feet/ln)
2 = Total queue storage of 500 feet in two lanes (average of 250 feet/ln)
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.
Queue Exceeds Capacity

Table 24
Forecast Year 2015 No Build Conditions Queuing Analysis (continued)

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Chester Ave/ 24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	90	275	---	---	650	75
	AM Demand	---	---	---	---	**800[a]**	---	75[b]	75[b]	---	---	175	25
	PM Demand	---	---	---	---	**625[a]**	---	**300[a,b]**	100[b]	---	---	325[a]	**175**
L St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	275	---	125	325	---	---	650	50
	AM Demand[3]	---	---	---	---	**650[b]**	---	25[b]	25[b]	---	---	50	25
	PM Demand[3]	---	---	---	---	**640[b]**	---	75[b]	75[b]	---	---	50	25
M St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	---	---	100	325	---	---	650	50
	AM Demand[3]	---	---	---	---	1000[a]	---	25[b]	75[b]	---	---	100	50
	PM Demand[3]	---	---	---	---	650[a]	---	75[b]	100[b]	---	---	125	**75**
F St/23rdSt (SR-178)	**Available Storage ft/ln**	---	625	---	---	---	---	---	600	---	95	250	---
	AM Demand	---	**800[a]**	---	---	---	---	---	125	---	75[b]	125[b]	---
	PM Demand	---	**875[a]**	---	---	---	---	---	250[a]	---	**100[b]**	150[b]	---
H St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	---	100	250	
	AM Queue	---	50[b]	---	---	---	---	---	125	---	0[b]	125[b]	
	PM Queue	---	50[b]	---	---	---	---	---	175	---	50[b]	**375[a,b]**	
Chester Ave/ 23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	90	90	275	---
	AM Demand	---	**675[a,b]**	---	---	---	---	---	150	**175**	**150[a,b]**	125[b]	---
	PM Demand	---	**750[a,b]**	---	---	---	---	---	150	**400[a]**	75[b]	175[b]	---
L St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	625	75	100	350	---
	AM Demand	---	50[b]	---	---	---	---	---	50	75	50[b]	175	---
	PM Demand	---	425[b]	---	---	---	---	---	125	**175**	100[b]	75[b]	---
M St/23rdSt (SR-178)	**Available Storage ft/ln**	---	275	---	---	---	---	---	625	75	100	325	---
	AM Demand	---	200	---	---	---	---	---	50	50	50	125	---
	PM Demand	---	**875[a,b]**	---	---	---	---	---	100	**125**	100	150	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
3 = Operation may be affected by queue spillback from downstream intersection.
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.

Queue Exceeds Capacity

As shown in Table 24, adequate storage capacity is provided for forecast year 2015 no build conditions during the a.m. and p.m. peak hour with the exception of the following locations:

- **Camino Del Rio Court/Rosedale Highway (SR-58)**

  Northbound Through Lane;

  Southbound Shared Left-Turn/Through Lane; and

  Southbound Right-Turn Lane.

- **SR-99 Southbound Ramps/Rosedale Highway (SR-58)**

  Southbound Left-Turn Lane.

- **Buck Owens Boulevard/SR-99 Northbound Ramps – Sillect Avenue**

  Westbound Left-Turn Lane;

  Northbound Left-Turn Lane; and

  Southbound Left-Turn Lane.

- **Buck Owens Boulevard – SR-99 Northbound Ramps/24th Street (SR-178)**

  Eastbound Left-Turn Lane; and

  Northbound Left-Turn Lane;

  Southbound Right-Turn Lane

- **Oak Street/24th Street (SR-178)**

  Eastbound Through Lane;

  Westbound Left-Turn Lane;

  Westbound Through Lane; and

  Northbound Right-Turn Lane.

- **Oak Street/Truxtun Avenue**

  Eastbound Left-Turn Lane;

  Eastbound Right-Turn Lane;

  Westbound Left-Turn Lane;

  Northbound Left-Turn Lane;

  Northbound Right-Turn Lane; and

  Southbound Right-Turn Lane.

- **H Street/24th Street (SR-178)**

  Northbound Left-Turn Lane.

- **Chester Avenue/24th Street (SR-178)**

  Westbound Through Lane;

  Northbound Left-Turn Lane; and

  Southbound Right-Turn Lane.

- **L Street/24th Street (SR-178)**

  Westbound Through Lane.

- **M Street/24th Street (SR-178)**

  Southbound Right-Turn Lane.

- **F Street/23rd Street (SR-178)**

  Eastbound Through Lane; and

  Southbound Left-Turn Lane.

- **H Street/23rd Street (SR-178)**

  Southbound Through Lane.

- **Chester Avenue/23rd Street (SR-178)**

  Eastbound Through Lane;

  Northbound Right-Turn Lane; and

  Southbound Left-Turn Lane.

- **L Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane.

- **M Street/23rd Street (SR-178)**

  Eastbound Through Lane; and

  Northbound Right-Turn Lane.

Forecast year 2015 no build conditions assume the freeway geometry utilized for existing conditions. Table 25 summarizes forecast year 2015 no build project conditions a.m. and p.m. peak hour LOS of study freeway segments; detailed HCM freeway segment analysis sheets are provided in Appendix D.

Table 25
Forecast Year 2015 No Build
Conditions Freeway Segment AM & PM Peak Hour LOS

Study Segment	AM Peak Hour	PM Peak Hour
	Density – LOS	Density – LOS
Northbound		
California Ave On-Ramp to Rosedale Hwy Off-Ramp	**27.0 – D**	**26.1 – D**
Buck Owens Blvd On-Ramp to Airport Dr Off-Ramp	18.3 – C	18.1 – C
Southbound		
Airport Dr On-Ramp to Rosedale Hwy Off-Ramp	20.3 – C	24.2 – C
Rosedale Hwy On-Ramp to California Ave Off-Ramp	**25.2 – D**	**34.7 – D**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient freeway segments shown in **bold.**
Source: TRIP Staff.

As shown in Table 25, two (2) study freeway segments are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2015 no build conditions.

Forecast year 2015 no build project conditions assume the freeway geometry utilized for existing conditions. Table 26 summarizes forecast year 2015 no build project conditions a.m. and p.m. peak hour LOS of study freeway ramps; detailed HCM freeway ramp analysis sheets are provided in Appendix D.

Table 26
Forecast Year 2015 No Build Project
Conditions Ramp Merge/Diverge AM & PM Peak Hour LOS

Study Ramp	Type of Analysis	AM Peak Hour	PM Peak Hour
		Density – LOS	Density – LOS
Northbound			
24th St Off-Ramp	Diverge	**39.6 – F**	**40.3 – F**
Buck Owens Blvd Off-Ramp	Diverge	23.5 – C	20.0 – C
Buck Owens Blvd On-Ramp	Merge	21.3 – C	19.9 – B
Southbound			
Rosedale Hwy Off-Ramp	Diverge	27.0 – C	**31.4 – D**
Rosedale Hwy Loop On-Ramp	Merge	23.4 – C	**30.7 – D**
Rosedale Hwy Direct On-Ramp	Merge	**28.1 – D**	**36.3 – E**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient ramp shown in **bold.**
Source: TRIP Staff.

As shown in Table 26, four (4) study freeway ramps are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2015 no build conditions.

FORECAST YEAR 2015 WITH PROJECT CONDITIONS

This section analyzes operations along the 24th Street Corridor, assuming one "with project" alternative as discussed previously. Forecast year 2015 with project conditions assume the following improvements to the 24th Street Corridor:

- **Segment A - Oak Street/24th Street Intersection Improvements**

  Improve the northbound Oak Street approach from one left-turn lane, one shared left-turn/through lane and one right-turn lane with overlap phasing to consist of two left-turn lanes, one shared left-turn/through lane and two right-turn lanes with overlap phasing.

  Improve the eastbound 24th Street approach from one left-turn lane, two through lanes and one right-turn lane to consist of one left-turn lane, four through lanes and one right-turn lane with overlap phasing.

  Improve the westbound 24th Street approach from two left-turn lanes, one through lane and one shared through/right-turn lane to consist of two left-turn lanes, three through lanes and one shared through/right-turn lane.

Improve the southbound Oak Street approach from one shared through/left-turn lane and one right-turn lane to consist of one left-turn lane and one shared through/right-turn lane.

- **Segment B - 24th Street Widening from Oak Street to 24th Street/23rd Street couplet**

  Widen 24th Street from Oak Street to the 24th Street/23rd Street couplet from a four-lane undivided roadway to a six-lane divided roadway with raised median. As part of this improvement, east/west left-turns into the Westchester neighborhood from 24th Street would be accommodated via median breaks at Beech Street, Spruce Street and Cedar Street. Multiple median breaks are provided to disperse left-turn traffic into the neighborhood while still accommodating agency requirements for deceleration and turn storage capacity. Northbound and southbound approaches from all neighborhood streets in Segment B would be restricted to right-turn only.

- **Segment C - 24th Street/23rd Street Couplet Widening**

  Widen the 24th Street/23rd Street couplet, from its origin east of B Street to its terminus at SR-178, from three lanes in each direction to four lanes in each direction.

- **Segment D – SR-99/24th Street Interchange**

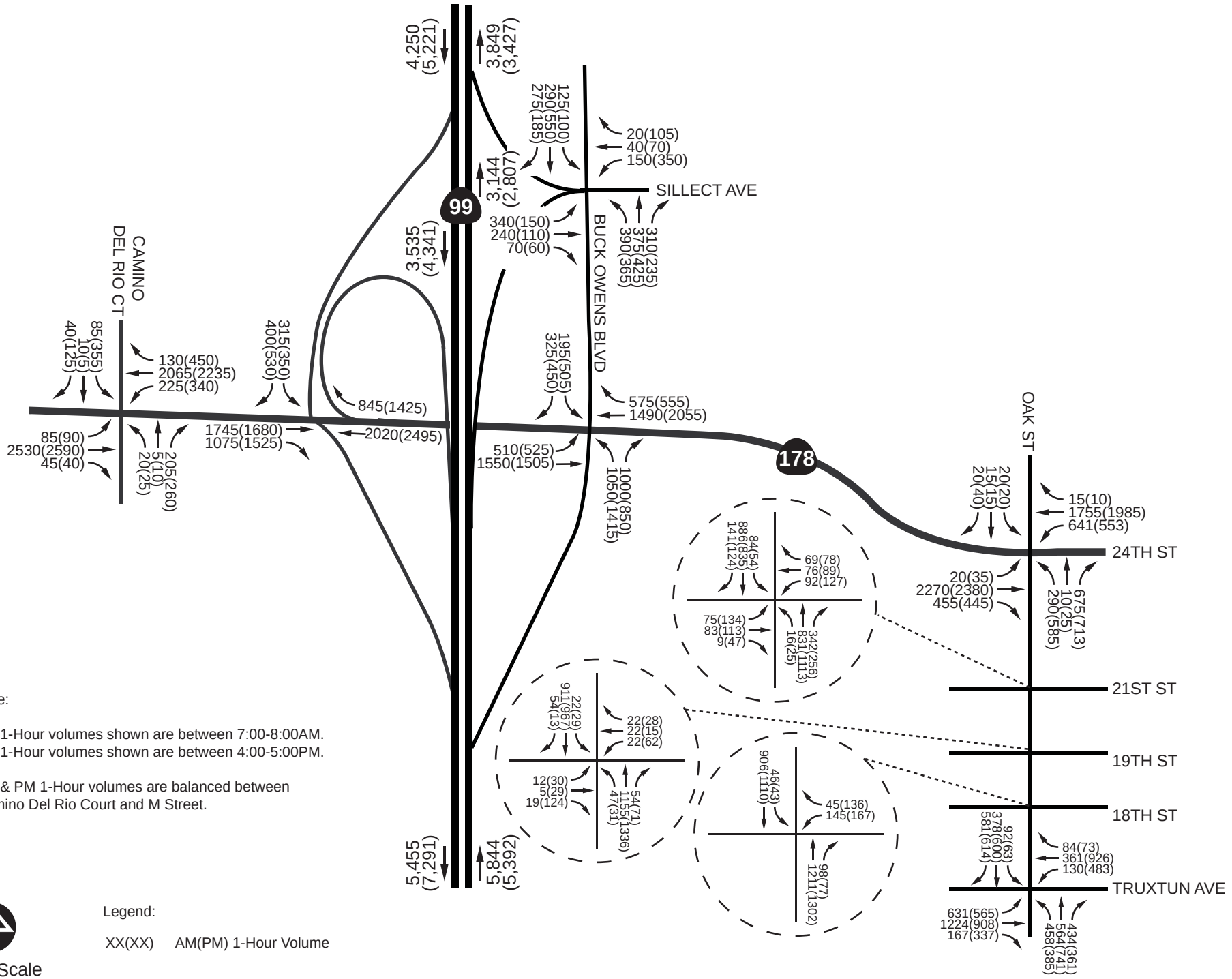
  Buck Owens Boulevard-SR-99 Northbound Off-Ramp/24th Street intersection: Improve the westbound 24th Street approach from three through lanes and one right-turn lane to consist of four through lanes and one shared through/right-turn lane. Two westbound receiving lanes will be accommodated through construction of lanes north of the SR-99 superstructure support pillars in the bay that today only serves a sidewalk. Improve the southbound Buck Owens Boulevard approach from two left-turn lanes and one right-turn lane with overlap phasing to consist of two left-turn lanes and two right-turn lanes with overlap phasing. Improve the SR-99 Northbound off-ramp from two left-turn lanes and one free right-turn lane to consist of three left-turn lanes and one free right-turn lane.

  SR-99 Southbound Ramps/24th Street intersection: Improve the westbound Rosedale Highway (SR-58) to southbound SR-99 loop on-ramp from one lane to consist of two lanes within existing pavement width.

Exhibits 17, 18 and 19 show forecast with project conditions study area intersection geometry. Since the proposed project includes modifications to the S-Curve at C Street, some intersections are created, modified, or eliminated with the redesign of the S-curve to accommodate an increased design speed. Forecast year 2015 with project conditions a.m. and p.m. peak hour intersection volumes at the study intersections are determined by adjusting traffic volumes where appropriate based on project components listed above. Exhibits 26, 27 and 28 show forecast year 2015 with project conditions a.m. and p.m. peak hour intersection volumes at the study intersections.

Forecast Year 2015 With Project Conditions Traffic Operational Analysis

Table 27 summarizes forecast year 2015 with project conditions a.m. peak hour and p.m. peak hour LOS of the study intersections; detailed LOS analysis sheets are contained in Appendix D.



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

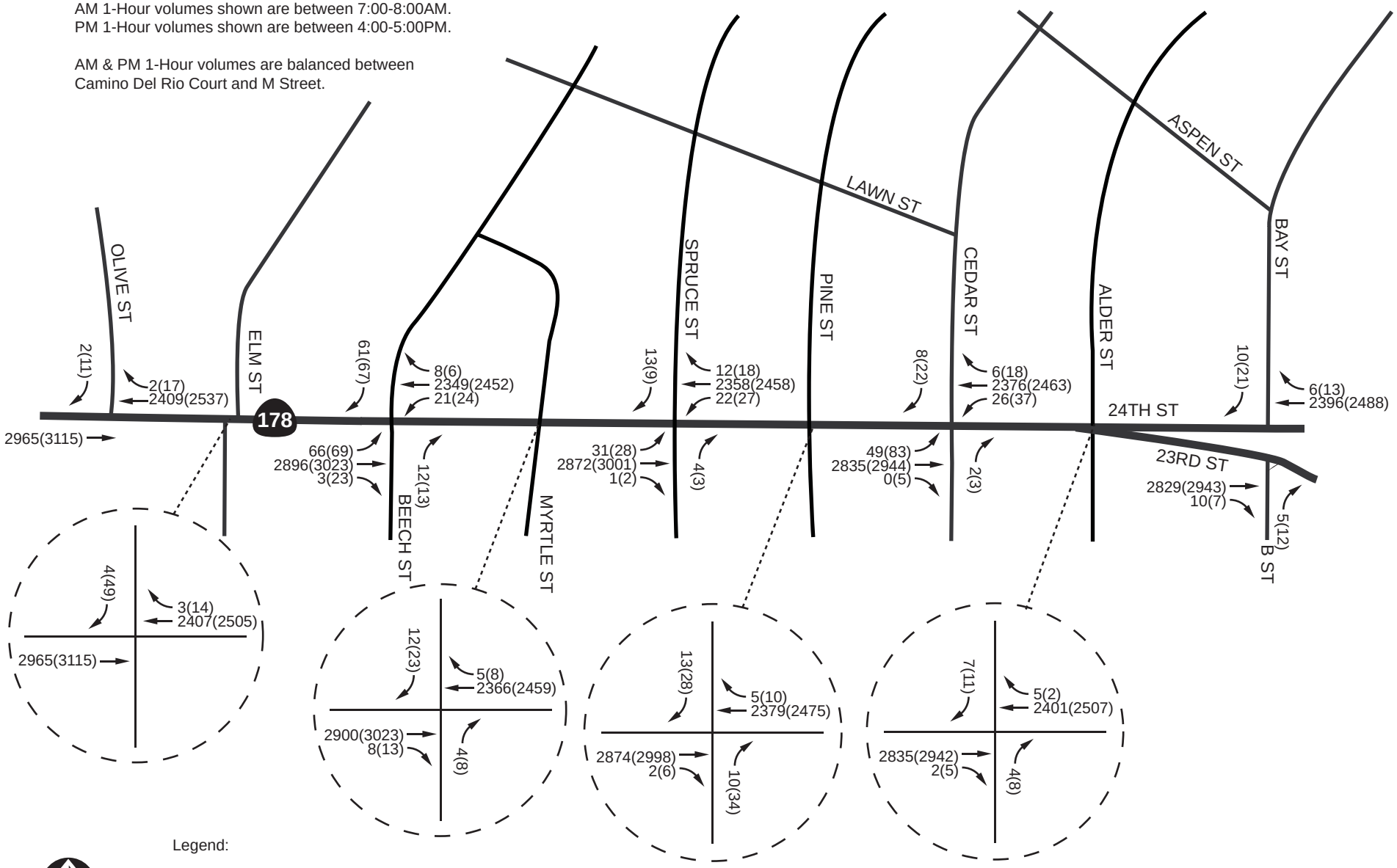
Forecast Year 2015 With Project AM/PM Peak Hour Intersection Volumes - Area 1

Exhibit 26

Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.



Legend:

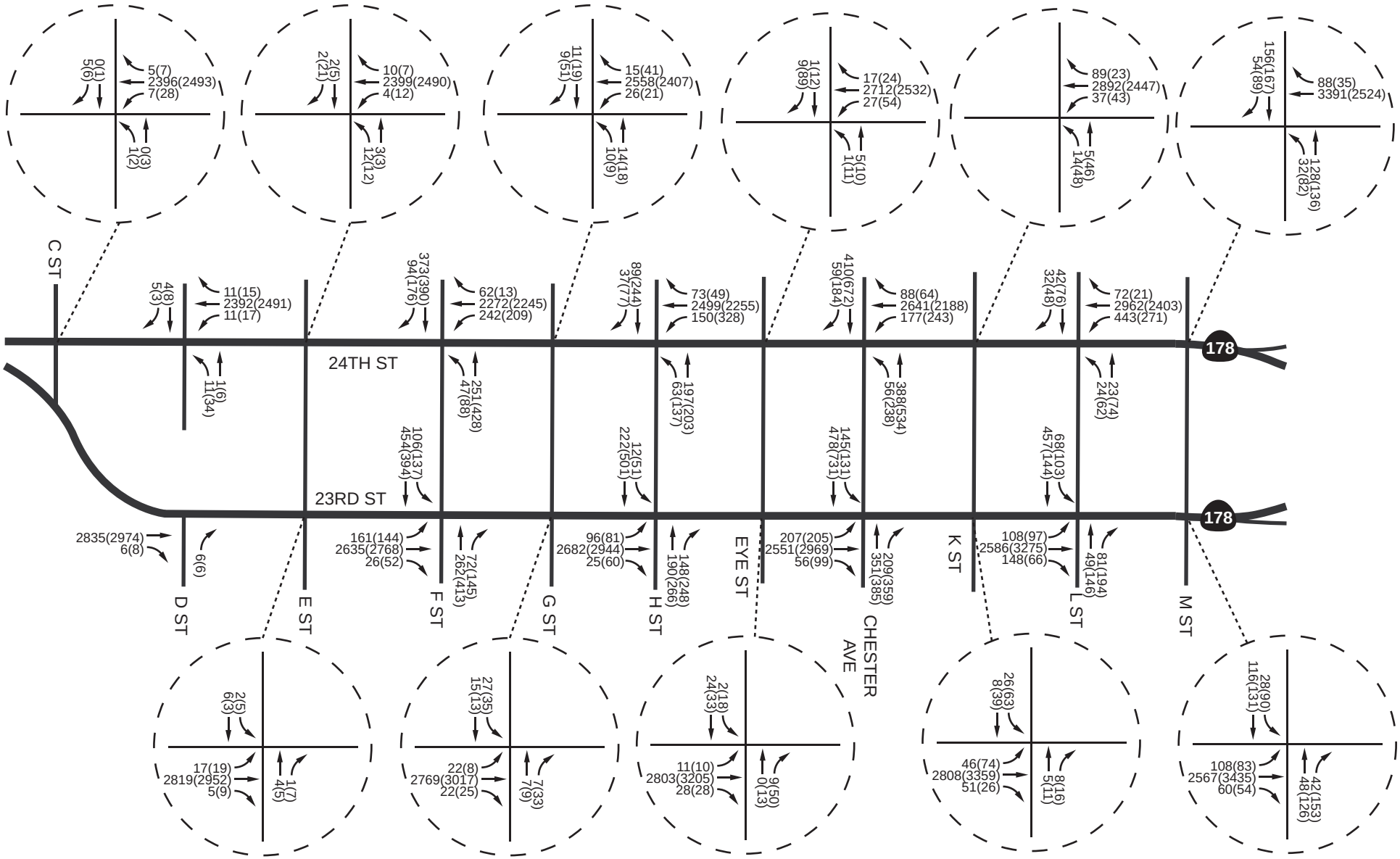
XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

Forecast Year 2015 With Project AM/PM Peak Hour Intersection Volumes - Area 2

Exhibit 27



Note:

AM 1-Hour volumes shown are between 7:00-8:00AM.
PM 1-Hour volumes shown are between 4:00-5:00PM.

AM & PM 1-Hour volumes are balanced between Camino Del Rio Court and M Street.

Legend:

XX(XX) AM(PM) 1-Hour Volume

Not to Scale

RBF

Forecast Year 2015 With Project AM/PM Peak Hour Intersection Volumes - Area 3

Exhibit 28

Table 27
Forecast Year 2015 With Project Conditions AM & PM Peak Hour Intersection LOS

Study Intersection	Forecast Year 2015 No Build		Forecast Year 2015 With Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Delay – LOS	Delay – LOS	Delay – LOS	Delay – LOS
Camino Del Rio Ct/Rosedale Hwy (SR-58) [1]	28.6 – C	***72.6 – E***	**35.0 – D**	***73.5 – E***
SR-99 SB Ramps/Rosedale Hwy (SR-58) [1]	**49.3 – D**	***78.6 – E***	13.4 – B	13.4 – B
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue [1]	***65.2 – E***	**44.6 – D**	**38.7 – D**	**44.5 – D**
Buck Owens Blvd-SR-99 NB Ramps/24th St (SR-178)	***65.0 – E***	***> 80.0 – F***	22.7 – C	**41.0 – D**
Oak St/24th St (SR-178)	***> 80.0 – F***	***> 80.0 – F***	26.2 – C	29.4 – C
Oak Street/21st Street [1]	13.9 – B	18.1 – B	13.9 – B	17.9 – B
Oak Street/19th Street [1]	6.9 – A	9.8 – A	5.4 – A	10.1 – B
Oak Street/18th Street [1]	11.1 – B	10.3 – B	6.6 – A	9.4 – A
Oak Street/Truxtun Avenue [1]	**49.4 – D**	***78.1 – E***	**39.5 – D**	**55.0 – D**
Olive St/24th St (SR-178) [2]	**28.1 – D**	**33.9 – D**	13.6 – B	14.4 – B
Elm St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	17.0 – C	21.0 – C
Beech St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	20.2 – C	21.9 – C
Myrtle St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	20.8 – C	22.4 – C
Spruce St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	20.4 – C	21.5 – C
Pine St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	21.0 – C	25.1 – D
Cedar St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	19.9 – C	21.0 – C
Alder St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	20.1 – C	21.5 – C
B St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	17.2 – C	18.7 – C
C St/24th St (SR-178) [2,3]	**31.1 – D**	***> 50.0 – F***	14.5 – B	***> 50.0 – F***
D St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***44.8 – E***	***> 50.0 – F***
E St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***43.2 – E***	**30.9 – D**
F St/24th St (SR-178)	14.7 – B	17.1 – B	11.5 – B	15.1 – B
G St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
H St/24th St (SR-178)	7.0 – A	15.9 – B	4.7 – A	8.3 – A
Eye St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
Chester St/24th St (SR-178)	**51.3 – D**	**42.6 – D**	13.8 – B	26.9 – C
K St/24th St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
L St/24th St (SR-178) [4,5]	12.1 – B	10.8 – B	2.0 – A	3.9 – A
M St/24th St (SR-178) [5]	***> 80.0 – F***	25.9 – C	16.0 – B	16.2 – B
D St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	15.4 – C	16.0 – C
E St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
F St/23rd St (SR-178)	**45.5 – D**	***> 80.0 – F***	18.3 – B	22.2 – C
G St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
H St/23rd St (SR-178)	16.6 – B	**51.2 – D**	11.6 – B	15.0 – B
Eye St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
Chester St/23rd St (SR-178)	**44.2 – D**	***> 80.0 – F***	9.0 – A	16.2 – B
K St/23rd St (SR-178) [2,3]	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***	***> 50.0 – F***
L St/23rd St (SR-178)	10.0 – B	**38.3 – D**	9.7 – A	7.7 – A
M St/23rd St (SR-178)	11.8 – B	***79.5 – E***	5.3 – A	7.0 – A

Note: SB = southbound, NB = northbound. Delay shown in seconds; deficient intersection operation shown in **bold**.
1 = Delay results may change where no geometric changes occur due to optimized traffic signal timing and phasing.
2 = LOS and delay for stop-controlled intersections are based worst case minor street approach.
3 = LOS analysis conservatively reports notable delay, however, visual observations indicate lower amount of delay for motorists crossing high volume major roadway.
4 = Counts at L Street/24th Street collected before intersection signalized in August 2009.
5 = Operation may be affected by queue spillback from downstream intersection.

LOS D LOS E or F

As shown in Table 27, assuming implementation of the proposed project, sixteen (16) study intersections are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2015 with project conditions.

The signalized Camino Del Rio Court/Rosedale Highway (SR-58) intersection is forecast to remain operating deficiently with implementation of the proposed project; another project is under review to improve operation at this intersection.

The signalized Buck Owens Boulevard/SR-99 Northbound Ramps-Sillect Avenue intersection is forecast to remain operating deficiently with implementation of the proposed project; however, with project operations are better than no build conditions.

The signalized Buck Owens Boulevard-SR-99 Northbound Ramps/24th Street intersection is forecast to remain operating deficiently with implementation of the proposed project; however the intersection will operate better than pre-project conditions and better than existing conditions experienced today. Additional widening of the Buck Owens Boulevard-SR-99 Northbound Ramps/24th Street intersection to achieve acceptable LOS for forecast year 2015 with project conditions is considered infeasible due to the right-of-way acquisition required.

The signalized Oak Street/Truxtun Avenue intersection is forecast to operate at LOS D or better with City planned improvements (through the Traffic Impact Fee Program) along Truxtun Avenue. Even though the Oak Street/Truxtun Avenue intersection does not meet the City LOS performance criteria, with implementation of the project the intersection is forecast to operate better than no-build and existing conditions.

While notable delay is shown at minor street crossings of 24th and 23rd Streets, negligible delay is experienced by motorists traveling east/west on 24th Street. Deficient intersections shown in Table 27 are typically minor street intersections where local circulation, connectivity and emergency access are maintained, and at intersections that do not govern operations for the majority of the 24th Street Corridor traffic.

While some signalized intersections are forecast to operate deficiently for forecast year 2015 conditions, additional improvements are not recommended since 2015 analysis does not govern the project design.

HCM 95th percentile queue analysis was prepared utilizing the Synchro analysis software at major signalized study intersections. Table 28 summarizes forecast year 2015 with project 95th percentile queue spillback at the study intersections during both the a.m. and p.m. peak hours; detailed queue spillback analysis sheets are provided in Appendix E.

Table 28
Forecast Year 2015 With Project Conditions Queuing Analysis

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Camino Del Rio Ct/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	230	1250	---	290	425	---	150	300	---	250[2]		50
	AM Demand	100[b]	1250[a]	---	125[b]	**975[a]**	---	50	**325[a]**	---	75		25
	PM Demand	150[a,b]	1250[a]	---	200[a,b]	**975[a,b]**	---	50	**375[a]**	---	**275**		**125**
SR-99 SB Ramps/ Rosedale Hwy (SR-58)	**Available Storage ft/ln**	---	450	450	---	750	---	---	---	---	450	---	1300
	AM Demand	---	150[b]	**650[b]**	---	550	---	---	---	---	300	---	425
	PM Demand	---	125[b]	275[b]	---	425[b]	---	---	---	---	400	---	775[a]
Buck Owens Blvd/SR-99 NB Ramps-Sillect Avenue	**Available Storage ft/ln**	925	1100	---	190	750	190	200	1000	---	115	1100	---
	AM Demand	450	350	---	150	150	25	**225[a,b]**	225	---	**175**	250	---
	PM Demand	225	250	---	**300**	300	50	200[b]	275[b]	---	**150**	425	---
Buck Owens Blvd- SR-99 NB Ramps/ 24th St (SR-178)	**Available Storage ft/ln**	280[1]	625	---	---	1300	---	450	---	---	400	---	550
	AM Demand	**325**	100	---	---	275	---	350	---	---	125[b]	---	175
	PM Demand	**375[a,b]**	550	---	---	675[a]	---	**575[a]**	---	---	175	---	375[a]
Oak St/24th St (SR-178)	**Available Storage ft/ln**	250	1300	450	700	700	---	350	---	400	50	175	---
	AM Demand	25[b]	475	75	350	225	---	125	---	300	50	50	---
	PM Demand	75[b]	500	75	325	350	---	275	---	300	50	50	---
Oak St/Truxtun Ave	**Available Storage ft/ln**	170	2500	150	260	600	260	150	1600	275	100	575	120
	AM Demand	**375[a]**	550	75	125[a]	175	50	**275[a]**	250	**350**	75[b]	150	**300[a]**
	PM Demand	**350[a]**	500[a]	**200**	**325[a]**	550[a]	50	**275[a]**	350	75	50[b]	275	**750[a]**
F St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	95	250	---	---	600	---
	AM Demand	---	---	---	---	75	---	50[b]	100[b]	---	---	175	---
	PM Demand	---	---	---	---	175	---	**100[b]**	175[b]	---	---	225	---
H St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	55	250	---	---	300	
	AM Queue	---	---	---	---	25	---	0[b]	150	---	---	50	
	PM Queue	---	---	---	---	100	---	**125[b]**	50[b]	---	---	125	

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
1 = Total queue storage of 560 feet in two turn lanes (average of 280 feet/ln)
2 = Total queue storage of 500 feet in two lanes (average of 250 feet/ln)
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.
Queue Exceeds Capacity

Table 28
Forecast Year 2015 With Project Conditions Queuing Analysis (continued)

Intersection	Description	Eastbound			Westbound			Northbound			Southbound		
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Chester Ave/ 24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	600	---	90	275	---	---	650	75
	AM Demand	---	---	---	---	175	---	50[b]	75[b]	---	---	175	50
	PM Demand	---	---	---	---	250	---	**250[a,b]**	100[b]	---	---	325[a]	**150**
L St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	275	---	125	325	---	---	650	50
	AM Demand[3]	---	---	---	---	0	---	25[b]	25[b]	---	---	50	50
	PM Demand[3]	---	---	---	---	25	---	25[b]	25[b]	---	---	75	50
M St/24th St (SR-178)	**Available Storage ft/ln**	---	---	---	---	---	---	100	325	---	---	650	50
	AM Demand	---	---	---	---	475	---	25[b]	100[b]	---	---	125	50
	PM Demand	---	---	---	---	325	---	75[b]	100[b]	---	---	125	**75**
F St/23rdSt (SR-178)	**Available Storage ft/ln**	---	625	---	---	---	---	---	600	---	95	250	---
	AM Demand	---	400	---	---	---	---	---	125	---	**100[a,b]**	175[b]	---
	PM Demand	---	475	---	---	---	---	---	200	---	**150[a,b]**	150[b]	---
H St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	---	100	250	
	AM Queue	---	400	---	---	---	---	---	125	---	0[b]	125[b]	
	PM Queue	---	200	---	---	---	---	---	175	---	25[b]	**450[a,b]**	
Chester Ave/ 23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	275	90	90	275	---
	AM Demand	---	100	---	---	---	---	---	125	**175**	50[a,b]	50[b]	---
	PM Demand	---	250[a]	---	---	---	---	---	125	**325[a]**	25[b]	75[b]	---
L St/23rdSt (SR-178)	**Available Storage ft/ln**	---	600	---	---	---	---	---	625	75	100	350	---
	AM Demand	---	100	---	---	---	---	---	50	75	50[b]	175	---
	PM Demand	---	100[b]	---	---	---	---	---	150	**175**	100[b]	75	---
M St/23rdSt (SR-178)	**Available Storage ft/ln**	---	275	---	---	---	---	---	625	75	100	325	---
	AM Demand	---	50	---	---	---	---	---	50	50	50	125	---
	PM Demand	---	75	---	---	---	---	---	125	**150**	100	50	---

Note: SB = Southbound, NB = Northbound, LT = Left-turn, TH = Through, RT = Right-turn. ft/ln = feet/lane. **Bold** = Queue exceeds capacity.
3 = Operation may be affected by queue spillback from downstream intersection.
a = 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
b = Volume for 95th percentile queue is metered by upstream signal.

Queue Exceeds Capacity

As shown in Table 28, adequate storage capacity is provided for forecast year 2015 with project conditions during the a.m. and p.m. peak hour with the exception of the following locations:

- **Camino Del Rio Court/Rosedale Highway (SR-58)**
  Westbound Through Lane;
  Northbound Through Lane;
  Southbound Shared Left-Turn/Through Lane; and
  Southbound Right-Turn Lane
- **SR-99 Southbound Ramps/Rosedale Highway (SR-58)**
  Eastbound Right-Turn Lane.
- **Buck Owens Boulevard/SR-99 Northbound Ramps – Sillect Avenue**
  Westbound Left-Turn Lane;
  Northbound Left-Turn Lane; and
  Southbound Left-Turn Lane.
- **Buck Owens Boulevard – SR-99 Northbound Ramps/24th Street (SR-178)**
  Eastbound Left-Turn Lane; and
  Northbound Left-Turn Lane.
- **Oak Street/Truxtun Avenue**
  Eastbound Left-Turn Lane;
  Eastbound Right-Turn Lane;
  Westbound Left-Turn Lane;
  Northbound Left-Turn Lane;
  Northbound Right-Turn Lane; and
  Southbound Right-Turn Lane.
- **F Street/24th Street (SR-178)**
  Northbound Left-Turn Lane.
- **H Street/24th Street (SR-178)**
  Northbound Left-Turn Lane.
- **Chester Avenue/24th Street (SR-178)**
  Northbound Left-Turn Lane; and
  Southbound Right-Turn Lane.
- **M Street/24th Street (SR-178)**
  Southbound Right-Turn Lane.
- **F Street/23rd Street (SR-178)**
  Southbound Left-Turn Lane.

- **H Street/23rd Street (SR-178)**

  Southbound Through Lane.

- **Chester Avenue/23rd Street (SR-178)**

  Southbound Left-Turn Lane.

- **L Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane.

- **M Street/23rd Street (SR-178)**

  Northbound Right-Turn Lane.

Since the proposed project does not propose to add mainline lanes to SR-99, forecast year 2015 with project conditions assume the same freeway cross-section geometry as analyzed for existing conditions. Table 29 summarizes forecast year 2015 with project conditions a.m. peak hour and p.m. peak hour LOS of the study freeway segments; detailed HCM freeway segment analysis sheets are provided in Appendix D.

Table 29
Forecast Year 2015 With Project Conditions
Freeway Segment AM & PM Peak Hour LOS

Study Segment	Forecast Year 2015 No Build		Forecast Year 2015 With Project	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
	Density – LOS	Density – LOS	Density – LOS	Density – LOS
Northbound				
California Ave On-Ramp to Rosedale Hwy Off-Ramp	**27.0 – D**	**26.1 – D**	**27.0 – D**	**26.1 – D**
Buck Owens Blvd On-Ramp to Airport Dr Off-Ramp	18.3 – C	18.1 – C	18.3 – C	18.1 – C
Southbound				
Airport Dr On-Ramp to Rosedale Hwy Off-Ramp	20.3 – C	24.2 – C	20.3 – C	24.2 – C
Rosedale Hwy On-Ramp to California Ave Off-Ramp	**25.2 – D**	**34.7 – D**	**25.2 – D**	**34.7 – D**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient freeway segments shown in **bold.**
Source: TRIP Staff.

As shown in Table 29, two (2) study freeway segments are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2015 with project conditions. However, note the proposed project is not forecast to further degrade operations of the SR-99 study freeway segments for forecast year 2035 with project conditions.

Forecast year 2015 with project conditions assume project-related improvements to the Northbound SR-99 Off-Ramp to 24th Street-Rosedale Highway, the remaining ramps remain unchanged from current geometric configurations. Table 30 summarizes forecast year 2015 with project conditions a.m. and p.m. peak hour LOS of the study freeway ramps; detailed HCM freeway ramp analysis sheets are provided in Appendix D.

Table 30
Forecast Year 2015 With Project Conditions
Ramp Merge/Diverge AM & PM Peak Hour LOS

Study Ramp	Type of Analysis	Forecast Year 2015 No Build		Forecast Year 2015 With Project	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
		Density – LOS	Density – LOS	Density – LOS	Density – LOS
Northbound					
24th St Off-Ramp	Diverge	**39.6 – F**	**40.3 – F**	20.0 – B	21.3 – C
Buck Owens Blvd Off-Ramp	Diverge	23.5 – C	20.0 – B	23.5 – C	20.0 – B
Buck Owens Blvd On-Ramp	Merge	21.3 – C	19.9 – B	21.3 – C	19.9 – B
Southbound					
Rosedale Hwy Off-Ramp	Diverge	27.0 – C	**31.4 – D**	27.0 – C	**31.4 – D**
Rosedale Hwy Loop On-Ramp	Merge	23.4 – C	**30.7 – D**	23.4 – C	**30.7 – D**
Rosedale Hwy Direct On-Ramp	Merge	**28.1 – D**	**36.3 – E**	**28.1 – D**	**36.3 – E**

Note: pc/mi/ln = passenger cars per mile per lane; Deficient ramp shown in **bold.**
Source: TRIP Staff.

As shown in Table 30, three (3) study freeway ramp influence areas are forecast to operate at a deficient LOS according to agency performance criteria during one or both peak hours for forecast year 2015 no build conditions. The proposed project is forecast to improve the 24th Street northbound off-ramp to acceptable operations, and is not forecast to further degrade operations at the remaining deficient SR-99 study freeway ramps for forecast year 2015 with project conditions. Improved operations at the northbound SR-99 off-ramp at 24th Street are mainly due to addition of a 1,300 feet long auxiliary lane and changing a single lane exit to a two-lane exit.

NO PROJECT LEVEL OF SERVICE ANALYSIS SUMMARY

As shown in Table 31, the operation of 14 key intersections worsens as traffic demand grows from existing to 2015 to 2035 no build conditions. Note that the morning traffic demand grows on 24th Street from about 4,000 vehicles under existing conditions to about 5,500 vehicles in 2035, and that the evening traffic demand grows from about 4,300 vehicles under existing conditions to about 6,000 vehicles in 2035. All the key intersections that constrain the 24th Street corridor are forecast to operate deficiently during one or both peak hours for 2035 no build conditions.

Table 31
Study Intersections No Build Level of Service Summary

Key Study Intersections	Existing (2008) Conditions Level of Service		Forecast 2015 No-Build Level of Service		Forecast 2035 No-Build Level of Service	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
24th Street Traffic Demand West of Oak Street (vehicles/hour)[1]	3,947	4,266	4,810	5,470	5,455	5,985
Camino Del Rio Ct/Rosedale Highway (State Route 58)	B	**D**	C	**E**	C	**F**
State Route 99 Southbound Ramps/Rosedale Highway (State Route 58)	**D**	**D**	**D**	**E**	**F**	**F**
Buck Owens Blvd/State Route-99 Northbound Ramps-Sillect Avenue	C	**D**	**E**	**D**	**E**	**E**
Buck Owens Blvd-State Route 99 Northbound Ramps/24th Street (State Route 178)	**D**	**F**	**E**	**F**	**F**	**F**
Oak Street/24th Street (State Route 178)	**E**	**E**	**F**	**F**	**F**	**F**
Oak Street/Truxtun Avenue	**D**	**E**	**D**	**E**	**F**	**F**
F Street/24th Street (State Route 178)	B	C	B	B	**E**	**E**
H Street/24th Street (State Route 178)	A	B	A	B	**E**	C
Chester Street/24th Street (State Route 178)	B	B	**D**	**D**	**F**	**E**
M Street/24th Street (State Route 178)	C	B	**F**	C	**F**	**D**
F Street/23rd Street (State Route 178)	C	C	**D**	**F**	**F**	**F**
H Street/23rd Street (State Route 178)	B	B	B	**D**	**E**	**F**
Chester Street/23rd Street (State Route 178)	B	B	**D**	**F**	**F**	**F**
M Street/23rd Street (State Route 178)	B	B	B	**E**	C	**F**

Note: Deficient intersection operations shown in **bold.**
[1] Traffic volumes presented provide a snapshot of traffic volumes on 24th Street and vary based on location.

CIRCULATION REVIEW

As a result of the proposed project, a number of circulation modifications will be implemented in the project area. The circulation modifications identified below have been reviewed and approved by City of Bakersfield staff.

Westchester Neighborhood Circulation Modifications (Elm Street to A Street)

As part of the improvement of 24th Street between Oak Street and the 24th Street/23rd Street couplet, east/west left-turns into the Westchester neighborhood from 24th Street would be accommodated via median breaks at Beech Street, Spruce Street and Cedar Street. Multiple median breaks are provided to disperse left-turn traffic into the neighborhood while still accommodating agency requirements for deceleration and turn storage capacity. Northbound and southbound approaches from remaining neighborhood streets (Elm, Myrtle, Pine and A Street) in the Westchester Neighborhood would be restricted to right-turn only.

Since Elm Street has no east/west connector roads north of 24th Street, a two-way frontage road will be constructed north of 24th Street between Elm Street and Beech Street (one block in length) to maintain connectivity for residents on Elm Street. Queue analysis of forecast year 2035 with project conditions traffic volumes at the Beech Street/24th Street intersection shows a peak mid-day southbound queue of 82 feet. Morning and afternoon peak southbound Beech Street queues are approximately 32 feet. Utilizing the forecast queue data at Beech Street/24th Street, the two-way frontage road has been designed to minimize property acquisition and complex neighborhood circulation changes while providing 67 feet of storage for southbound Beech Street motorists.

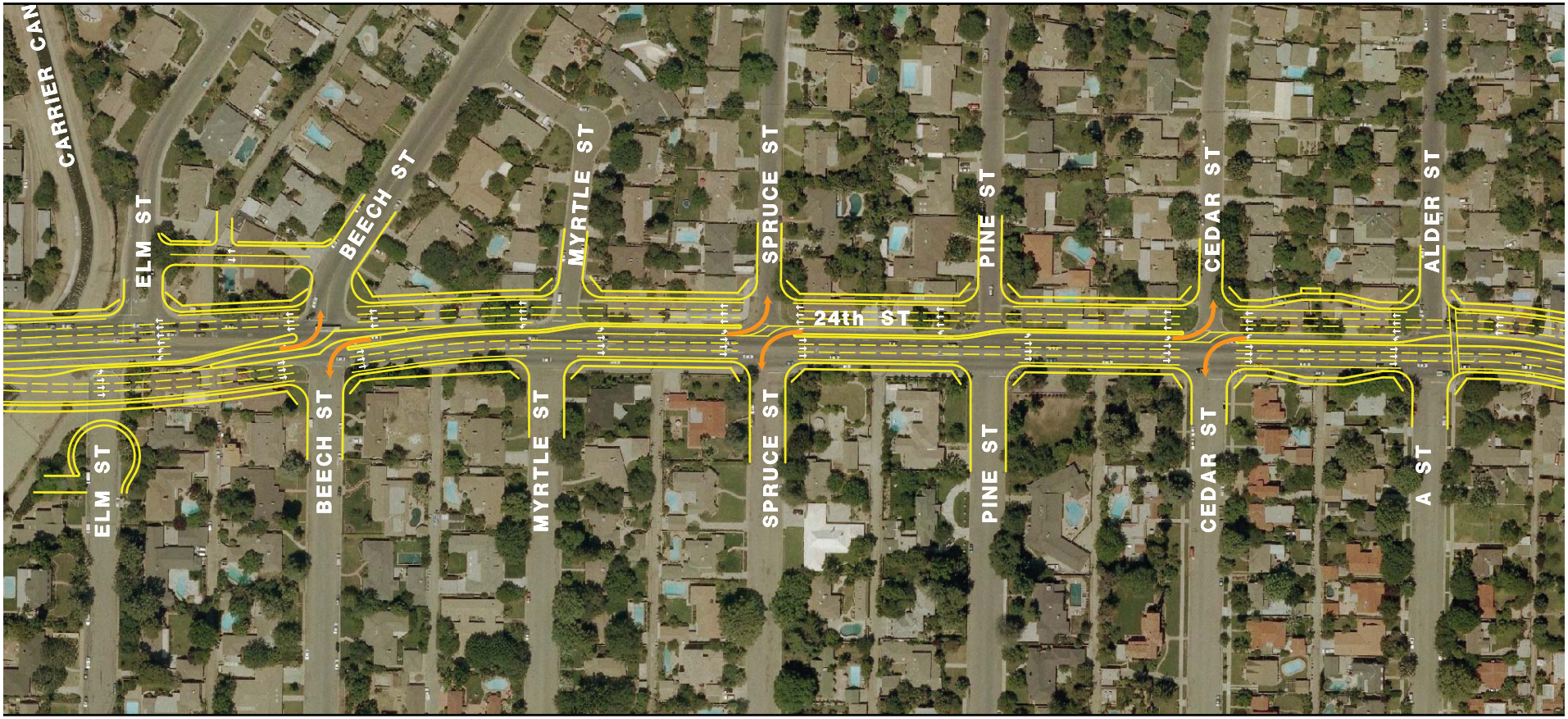
The three median breaks in the Westchester neighborhood, and the Beech Street to Elm Street frontage Road, will help maintain access to both North and South Westchester for emergency response vehicles. Exhibits 29 and 30 show left-turn movements in the Westchester area with the proposed project. Exhibits 31 and 32 show the Elm Street to Beech Street frontage road. Two exhibits are provided to show slight variations when widening of 24th Street is considered to the north and to the south.

D Street closure between 24th Street and 23rd Street

As part of the proposed project, the north leg of the D Street/23rd Street intersection will be closed. Access to D Street from 24th Street will be maintained. Large vehicle turnaround requirements are planned to be accommodated through a hammerhead design at D Street south of 24th Street. The hammerhead design will accommodate ingress and egress of emergency response vehicles. Exhibit 33 shows the circulation changes resulting from the modification to D Street.

K Street partial closure at 24th Street

As part of the proposed project, K Street southbound movements will be prohibited just north of 24th Street. Current southbound through and right-turn movements from K Street will redistribute using the surrounding grid system to connect to 24th Street. Northbound traffic at the K Street/24th Street intersection will be maintained. The restriction of southbound movements on K Street at 24th Street will be designed to accommodate ingress and egress of emergency response vehicles. Exhibit 34 shows the circulation changes resulting from the partial closure of K Street.



Key:

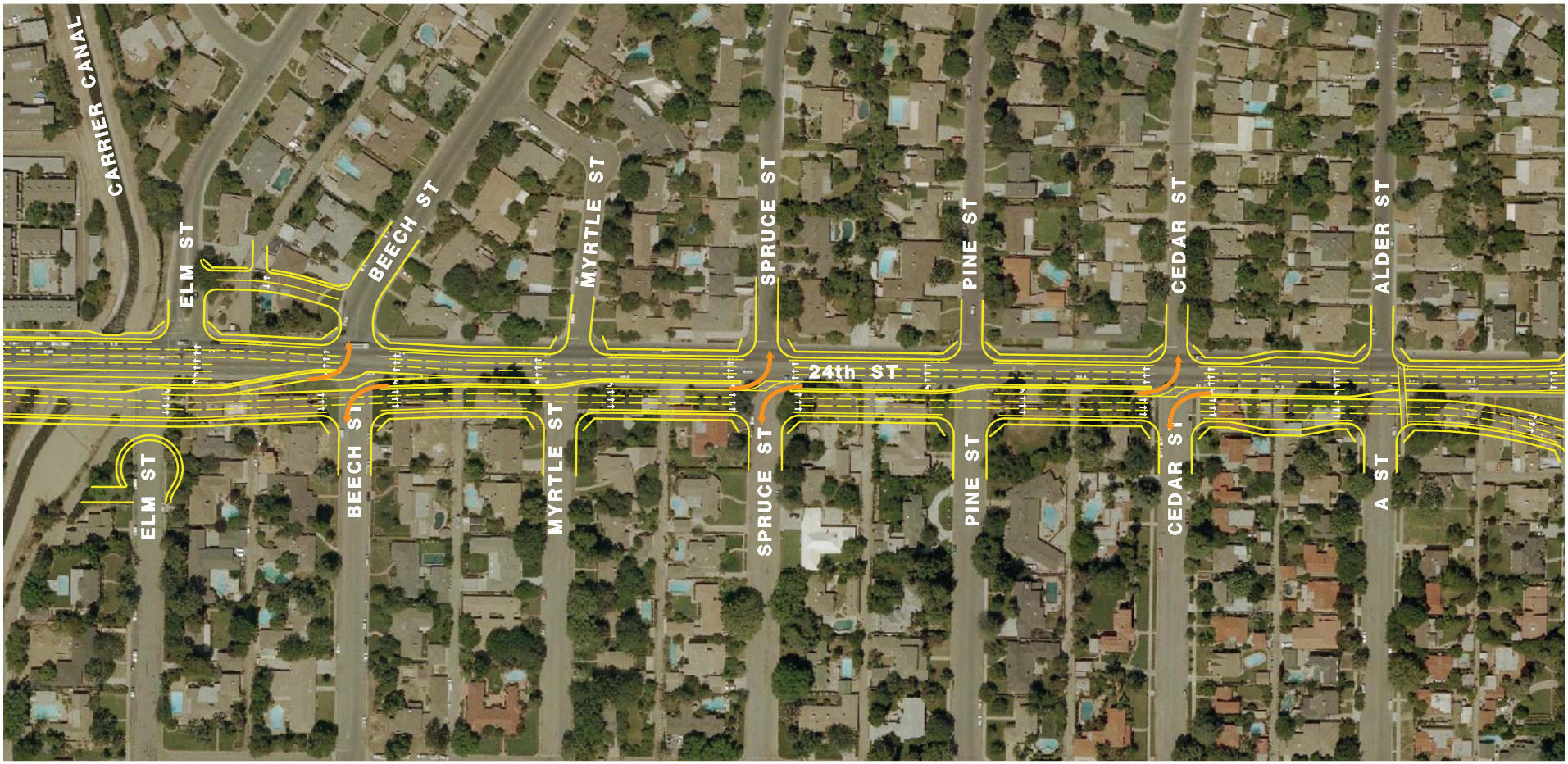
Eastbound Left-Turn Permitted

Westbound Left-Turn Permitted

RBF

Westchester Neighborhood Circulation - Widening to the North

Exhibit 29



Key:

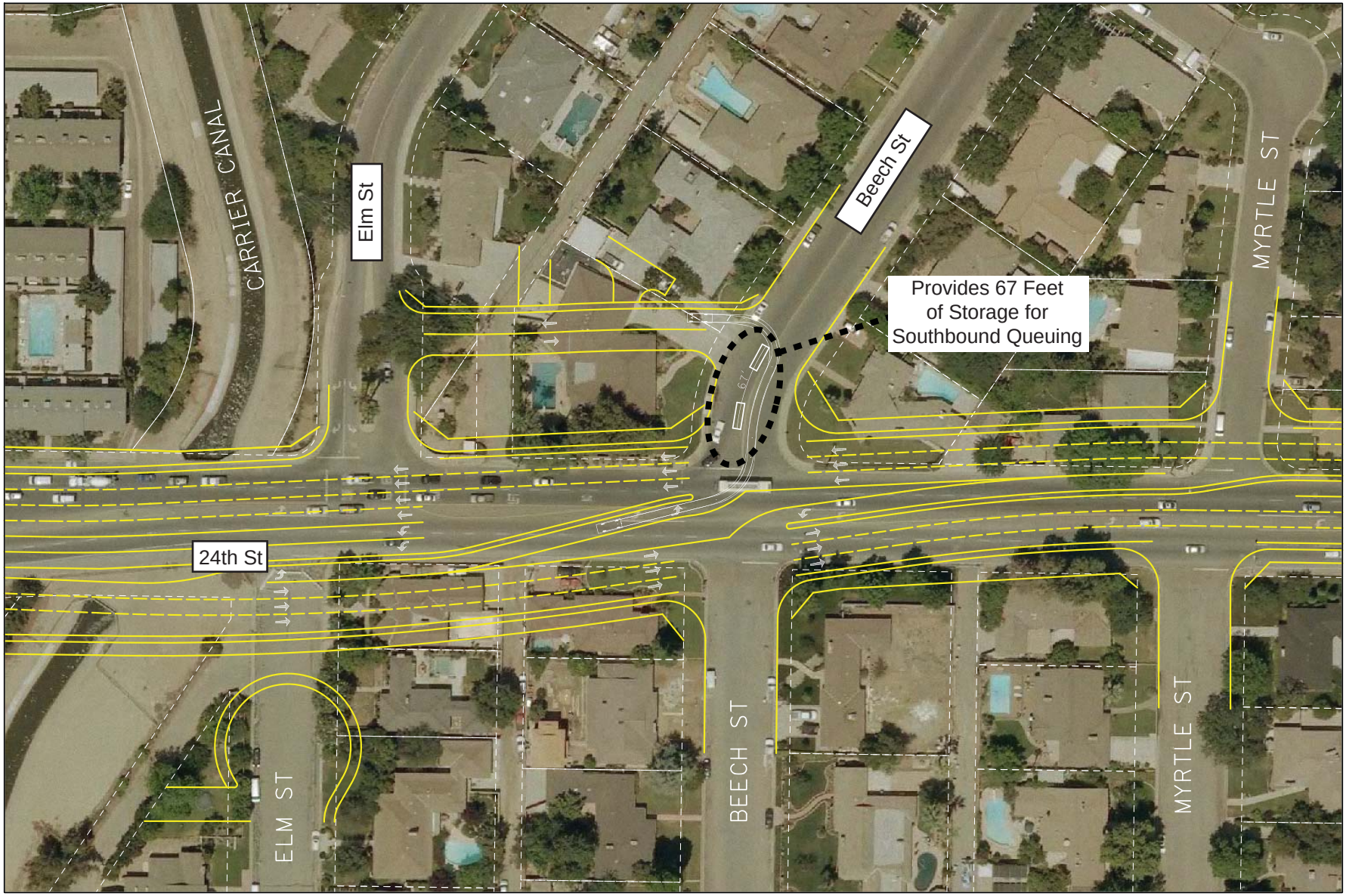
Eastbound Left-Turn Permitted

Westbound Left-Turn Permitted

RBF

Westchester Neighborhood Circulation - Widening to the South

Exhibit 30



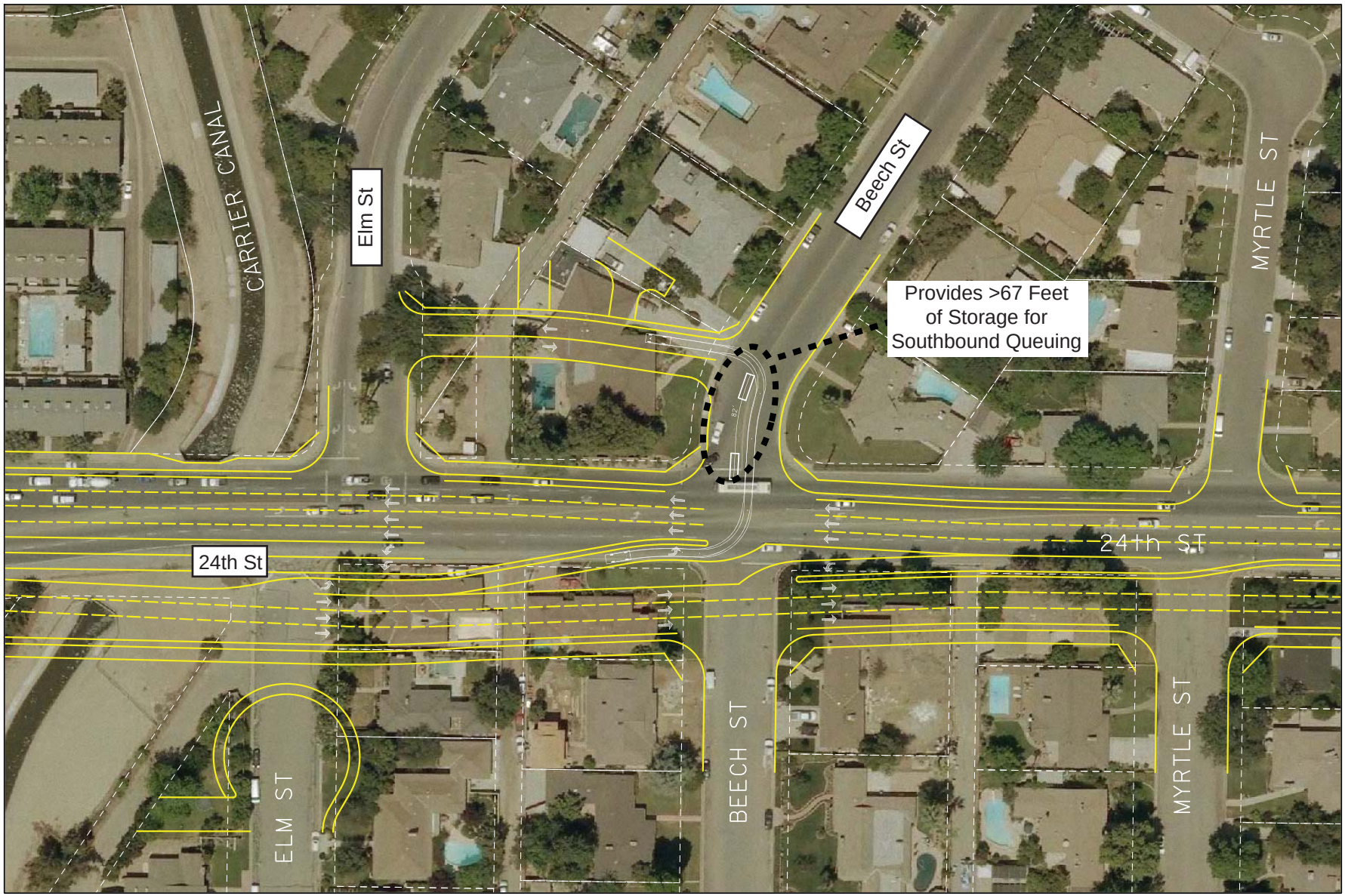
Note: Assumes widening of 24th Street occurs to the north

Not to Scale

RBF

Beech-Elm Frontage Road (Widening to the North)

Exhibit 31



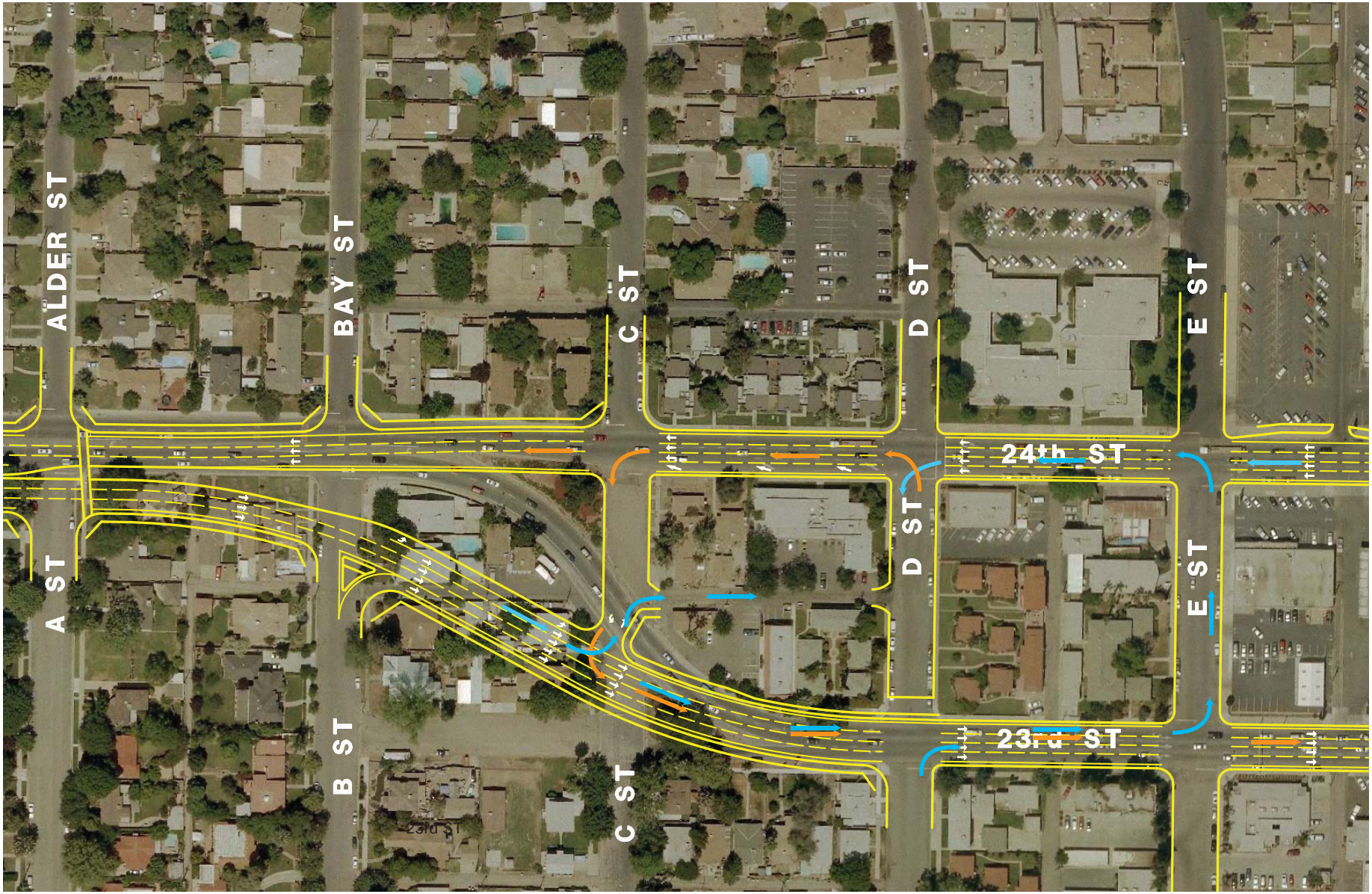
Note: Assumes widening of 24th Street occurs to the south

Not to Scale

RBF

Beech-Elm Frontage Road (Widening to the South)

Exhibit 32



Key:

Outbound Travel

Inbound Travel

RBF

D Street Closure - Circulation Changes

Exhibit 33



Key:

Outbound Travel

Inbound Travel

Partial Closure

K Street Partial Closure - Circulation Changes

Exhibit 34

Bus Stops

Through discussions with Golden Empire Transit (GET), the local transit agency, bus stops along 23rd Street and 24th Street will be consolidated from five locations to the following three locations for improved system efficiency:

- Eastbound and westbound in the vicinity of Oak Street;
- Eastbound and westbound just west of A Street; and
- Eastbound and westbound in the vicinity of F Street.

Reduction of existing bus stops is not anticipated to have a substantial effect on ridership or access to transit locations and would provide more efficient operations for the fixed bus routes in the project area. Exhibits 35-38 show the proposed bus stop locations on 23rd Street/24th Street.

Pedestrian Crossings/Sidewalks

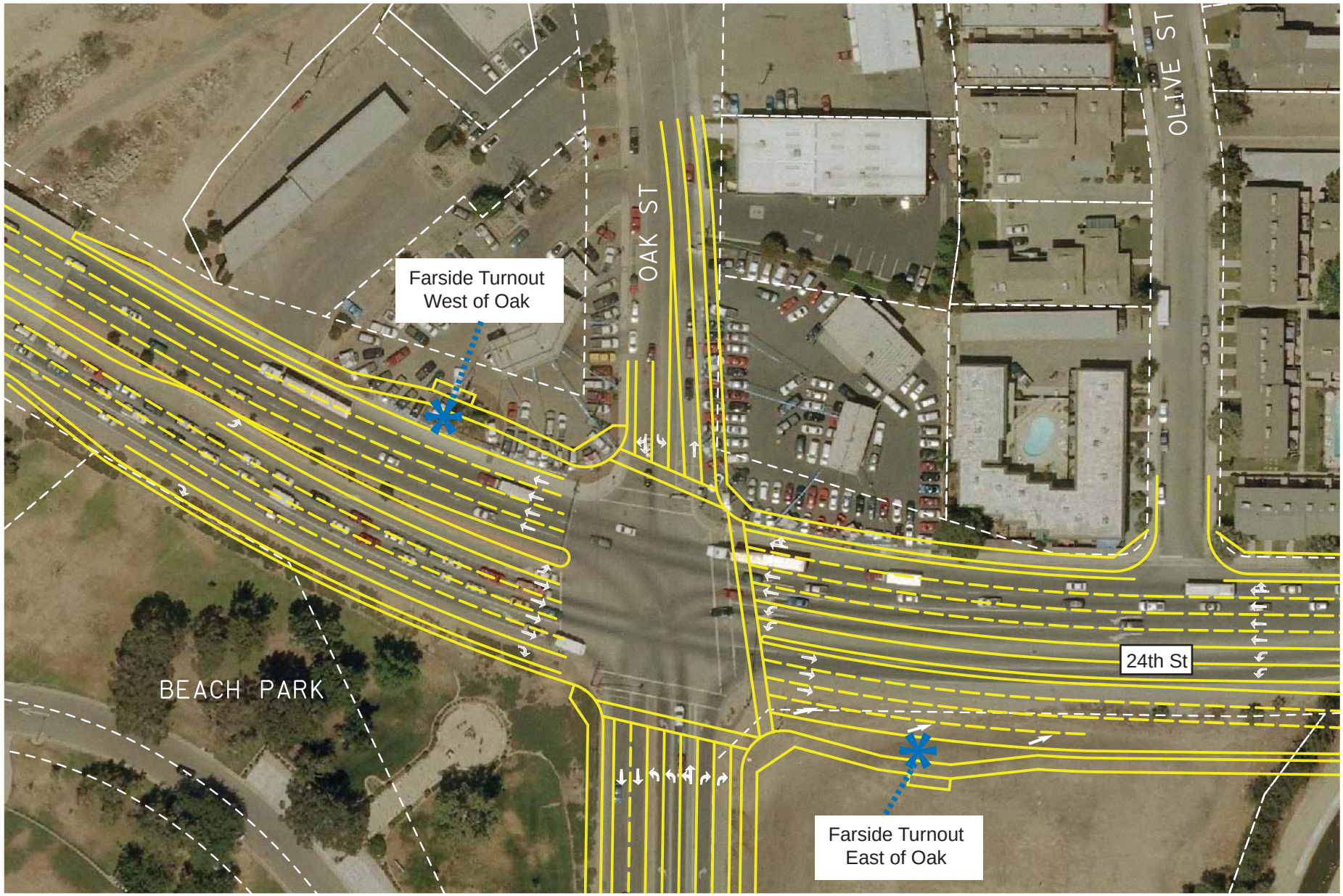
The project includes the construction of sidewalks on the south side of 24th Street, east of Oak Street, providing connectivity to the bus stop east of Oak Street shown in Exhibit 35. Additionally, sidewalks will be constructed on both the west and east side of Oak Street south of 24th Street, to provide a continuous sidewalk connection to 21st Street. The existing three crosswalks at the Oak Street/24th Street intersection will all be maintained. Exhibit 39 shows the proposed Oak Street/24th Street sidewalks.

There is an existing pedestrian crossing of 24th Street east of A/Alder Street. While aerial imagery may show a second crossing of 24th Street west of A Street/Alder Street, this crosswalk has already been removed by the City. The project will maintain the existing pedestrian crossing of 24th Street east of A/Alder Street. Exhibits 40 and 41 show the proposed pedestrian crossing of 24th Street on the east side of A/Alder Street for the widening to the north and widening to the south options.

Remaining pedestrian facilities (crosswalks, sidewalks) within the project study area will be maintained. The proposed project improvements would provide additional sidewalks and pedestrian ramps that comply with the Americans with Disabilities Act. Since pedestrian facilities will be maintained or improved, the proposed project would not result in direct permanent impacts to pedestrian facilities in the study area.

Bicycle Facilities

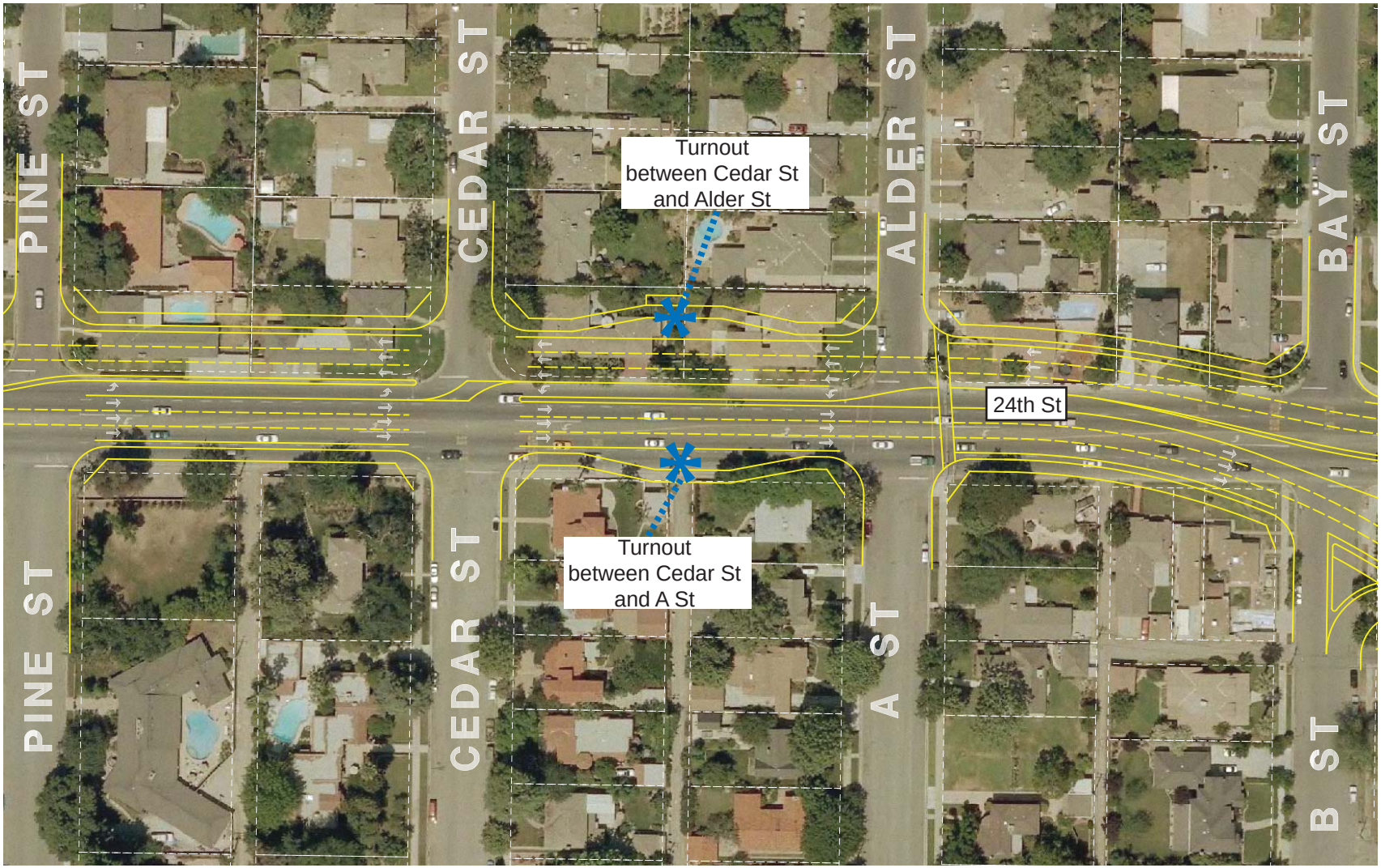
Currently there are no Class I (dedicated off-street trail) or Class II (dedicated on-street trail) bicycle facilities along 24th Street in the project area. The proposed 24th Street Improvement Project does not add or propose any new bicycle facilities or bicycle routes in the project study area or along Rosedale Highway (SR-58). The current City of Bakersfield General Plan does not propose any new bicycle facilities along 24th Street or the Rosedale Highway area. Within the state right-of-way, 5-foot-wide bicycle lanes would be built on the northbound and southbound Oak Street approaches at 24th Street. In addition, based on discussions with Caltrans design team, a 4-feet wide area for westbound 24th Street (State Route 178) bicycle travel will be included from the Kern River bridge west toward Buck Owens Boulevard and along State Route 178 under State Route 99. The 4-foot wide buffer area would be recognized as a bicycle area by the City but would not be designated as a standard bicycle.



RBF

Proposed Oak Street/24th Street Bus Stops

Exhibit 35

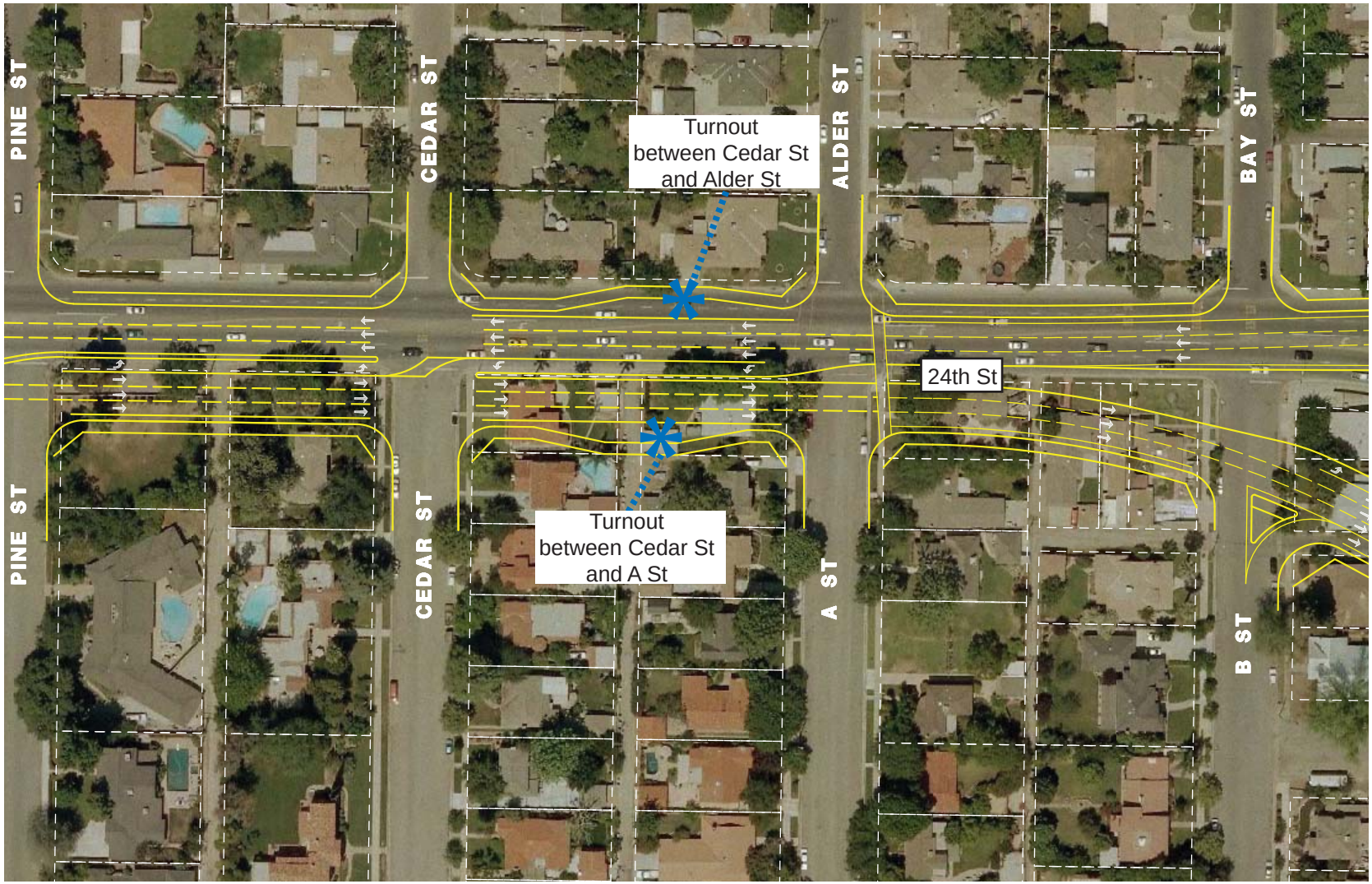


Note: Assumes widening of 24th Street occurs to the north

RBF

Proposed A Street/24th Street Street Bus Stops - North

Exhibit 36



Note: Assumes widening of 24th Street occurs to the south

RBF

Proposed A Street/24th Street Street Bus Stops - South

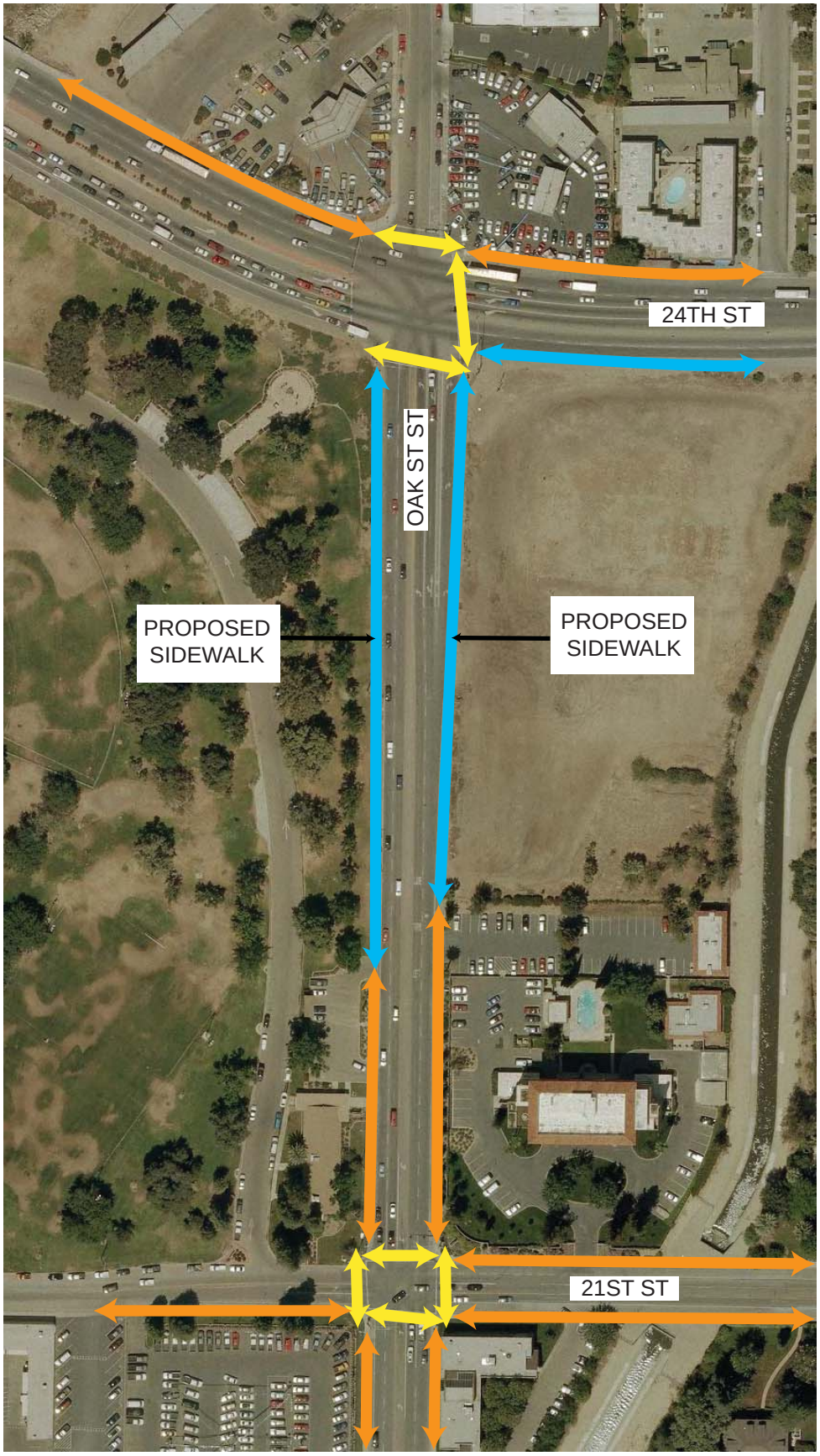
Exhibit 37



RBF

Proposed F Street/24th Street and G Street/23rd Street Bus Stops

Exhibit 38



Not to Scale

Key:

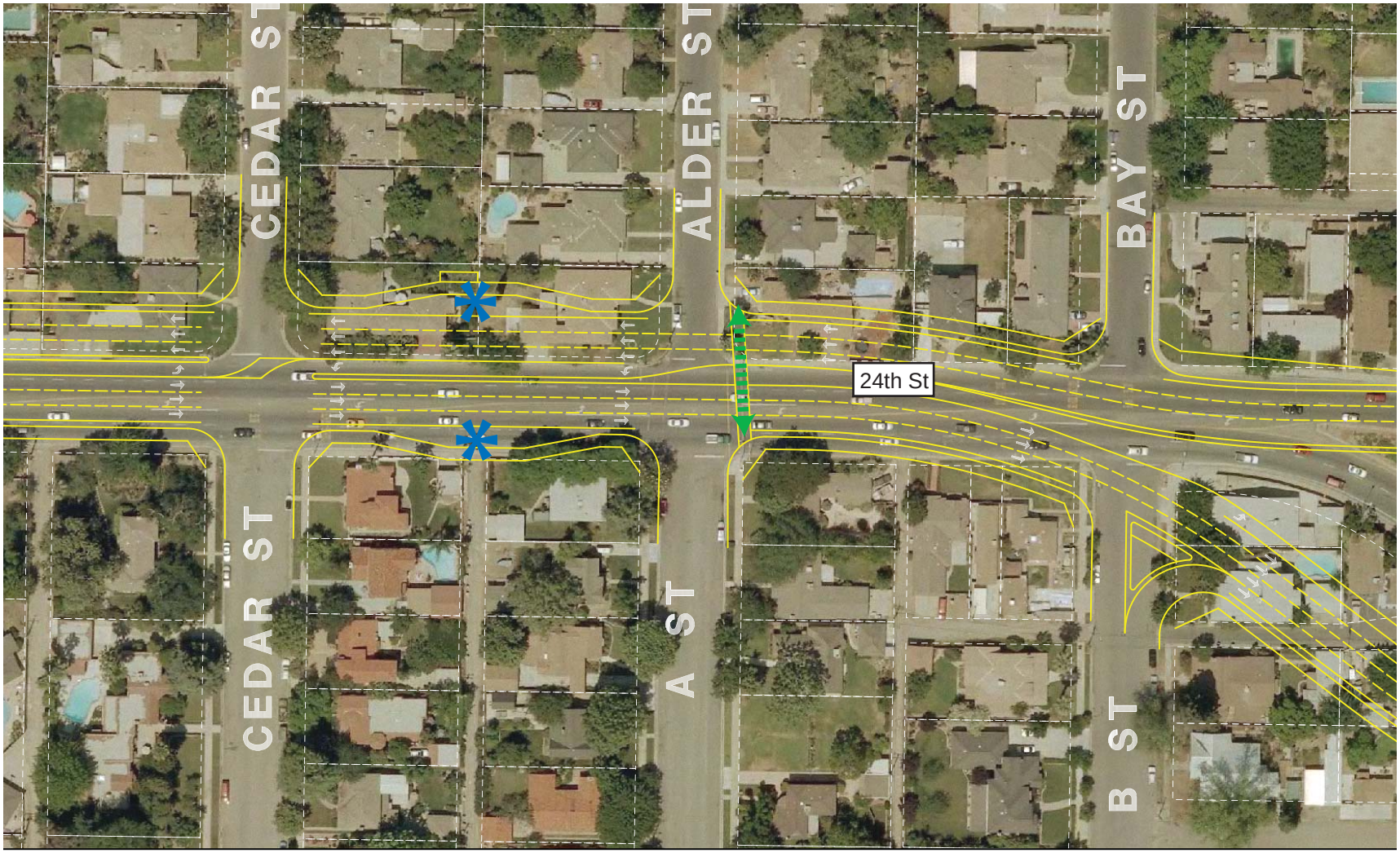
Existing Crosswalk

Existing Sidewalk

Proposed Sidewalk

Proposed Oak Street/24th Street Sidewalk

Exhibit 39

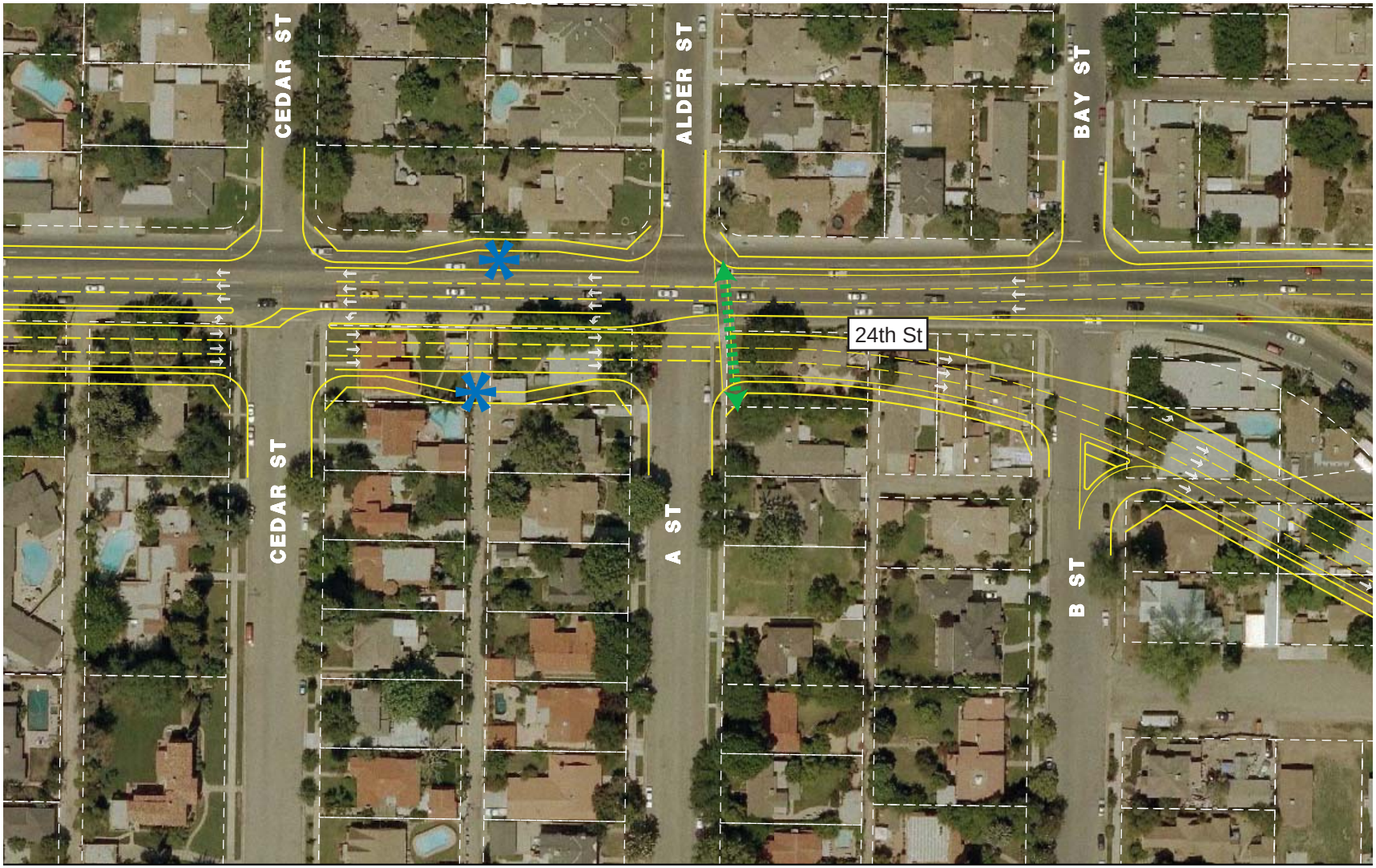


Not to Scale

RBF

Proposed Pedestrian Crossing of 24th Street at A Street Assuming Widening to the North

Exhibit 40



Not to Scale

RBF

Proposed Pedestrian Crossing of 24th Street at A Street Assuming Widening to the South

Exhibit 41

Park-and-Ride Facilities

There are currently no Caltrans park-and-ride facilities located within the project study area, nor are any proposed by the project. Existing park-and-ride facilities in the Bakersfield area are located near the Stockdale Highway/SR-99 interchange and the SR-58/SR-184 (Weedpatch Highway) interchange.

SR-178 Operations Entering/Exiting the 24th Street/23rd Street Couplet

Current geometrics limit eastbound through capacity leaving the couplet and entering the SR-178 freeway since three lanes access the freeway and one lane serves commercial properties on the 23rd Street frontage road. Eastbound operations on SR-178(23rd Street) are enhanced since vehicles will be able to utilize four through lanes through the M Street signal to access the freeway portion of SR-178 versus three in today's condition. The four lanes will continue approximately 800 feet until the fourth lane becomes a trap to the Union Street Off-Ramp.

Westbound operations on the freeway portion of SR-178 (24th Street) are enhanced since a fourth lane is added to the freeway terminus approximately 850 feet east of M Street allowing vehicles to use four through lanes at the M Street/24th Street intersection.

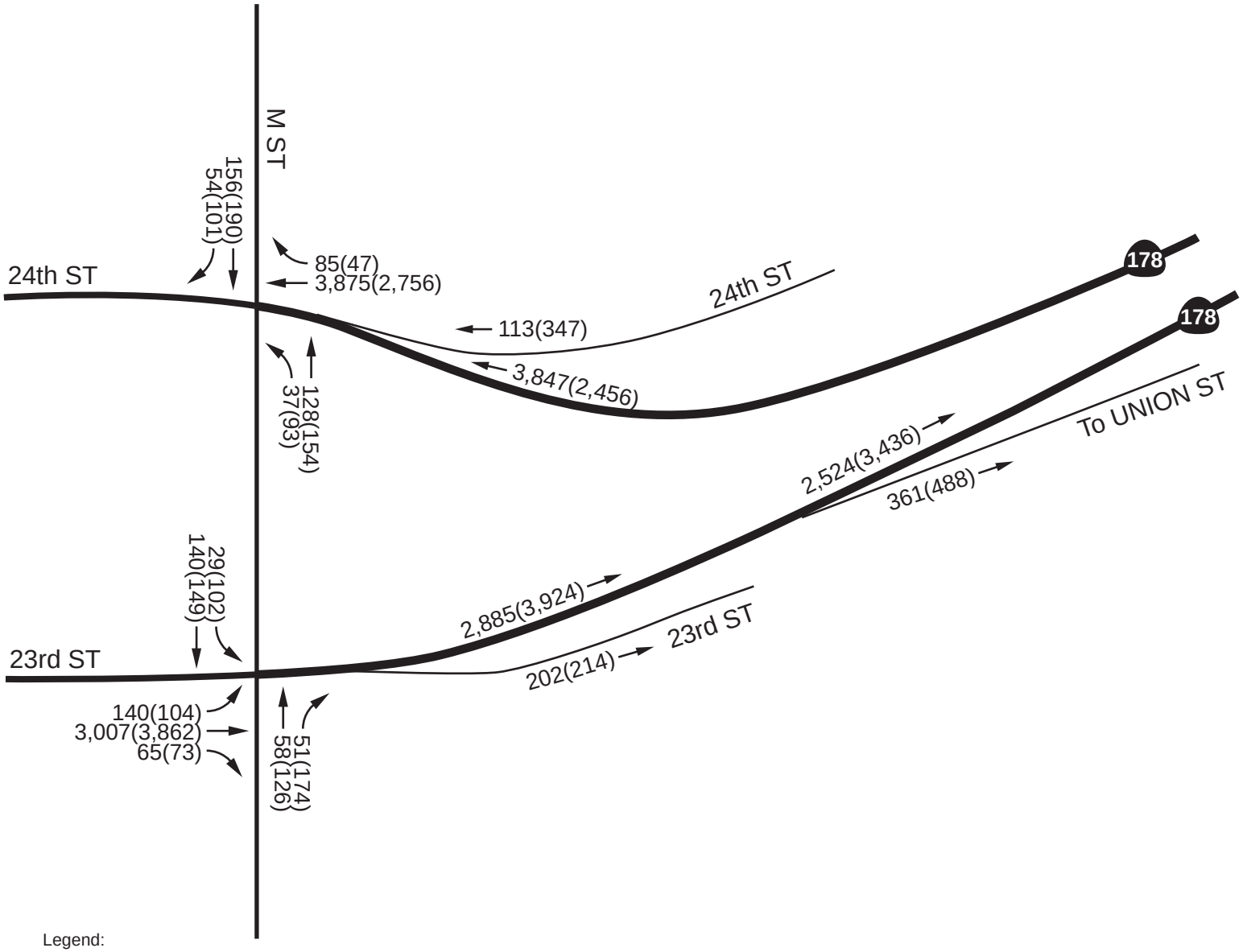
Exhibits 42 and 43 show forecast year 2035 and 2015 volumes respectively, entering/exiting the 24th Street/23rd Street couplet on SR-178.

Truck Routes/Truck Turns

Within the project study area, F Street between 24th Street and Golden State Avenue (SR-204) and Oak Street between Brundage Lane and 24th Street are designated as truck routes. The proposed project will provide accommodation for truck turning movements to and from the north at the F Street/24th Street intersection and for truck turning movements to and from the south at the Oak Street/24th Street intersection. Along the east west (SR 58/SR 178) project study corridor, the highway serves as an STAA terminal access route.

Traffic Index (TI) Calculations

Traffic Index (TI) calculations have been prepared for 24th Street, Buck Owens Boulevard and Oak Street utilizing the *Caltrans Highway Design Manual (6th Edition)* methodology. Table 32 summarizes the TI calculations; additional calculation information is contained in Appendix F.



Legend:

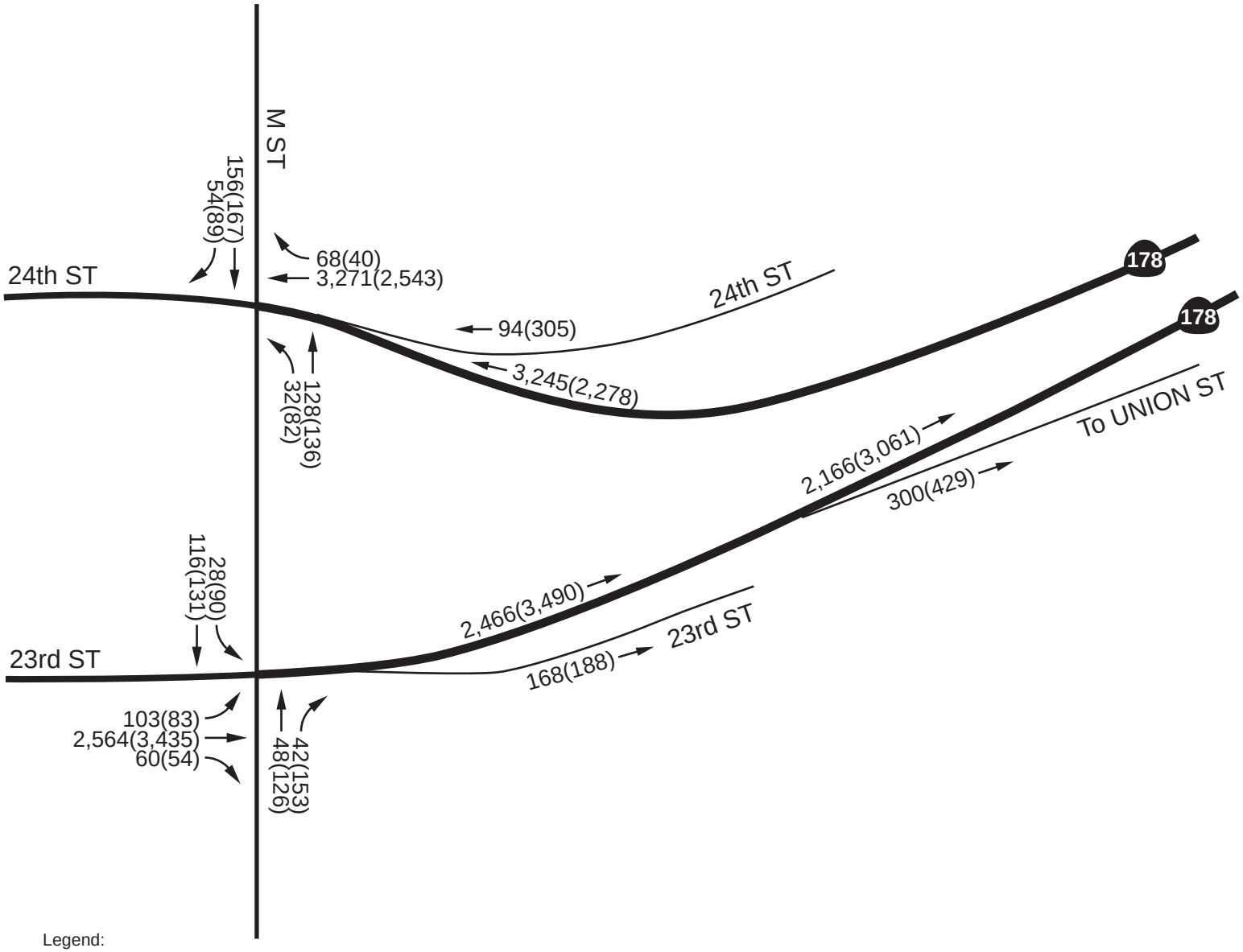
XX(XX) AM(PM) Peak Hour Volume

Not to Scale

RBF

Forecast Year 2035 No Build AM/PM Peak Hour SR-178/M Street Volumes

Exhibit 42



Legend:

XX(XX) AM(PM) Peak Hour Volume

Not to Scale

RBF

Forecast Year 2015 No Build AM/PM Peak Hour SR-178/M Street Volumes

Exhibit 43

Table 32
Traffic Index Calculations

Segment	2035 ADT	Truck %	Daily Truck Volume	TI (from Table 613.3C)
EB SR-178(24th Street/23rd Street)				
Camino Del Rio Court to SR-99 Southbound	40,481	4%	1,619	12.0
SR-99 Southbound to SR-99 Northbound	34,297	4%	1,372	11.5
SR-99 Northbound to Oak Street	36,447	4%	1,458	11.5
Oak Street to C Street	40,801	3%	1,224	11.5
D Street to M Street	44,590	4%	1,784	12.0
East of M Street	43,534	4%	1,731	12.0
WB SR-178(24th Street/23rd Street)				
Camino Del Rio Court to SR-99 Southbound	42,486	4%	1,699	12.0
SR-99 Southbound to SR-99 Northbound	41,021	4%	1,641	12.0
SR-99 Northbound to Oak Street	45,019	4%	1,801	12.0
Oak Street to C Street	49,640	3%	1,489	11.5
D Street to M Street	45,878	4%	1,835	12.0
East of M Street	47,932	4%	1,917	12.0
SB Buck Owens north of 24th Street	10,666	4%	427	10.0
NB Buck Owens north of 24th Street	17,468	4%	699	10.5
SB Oak Street south of 24th Street	20,249	4%	810	11.0
NB Oak Street south of 24th Street	18,258	4%	730	10.5
SR-99 NB Off-Ramp at 24th Street	19,769	4%	791	11.0
SR-99 SB Loop On-Ramp at 24th Street	10,670	4%	427	10.0
SR-99 SB Direct On-Ramp at 24th Street	8,816	4%	353	10.0
SR-99 SB Off-Ramp at 24th Street	15,280	4%	611	10.5

Note: EB = Eastbound W = Westbound SB = Southbound NB = Northbound.

Transportation Management Plan (TMP) preparation

A Transportation Management Plan (TMP) is designed to minimize motorist delays when implementing projects on the State Freeways and Highways System. This should be accomplished without compromising public or worker safety, or the quality of work being performed.

The goal of a TMP is to address closure requirements related to the project in a cost efficient and timely manner with minimal interference to the traveling public. The objective of the TMP, when implemented, is to minimize construction-related traffic delay and accidents by the effective application of traditional traffic mitigation strategies and innovative combinations of public and motorist information, demand management, incident management, system management, alternate route strategies, construction strategies and other strategies.

Per Caltrans Deputy Directive 60-R1 (September, 2007), a TMP should be prepared for construction of the proposed 24th Street Improvement Project when project design plans near completion assuming construction occurs within Caltrans system facilities.

PARKING ANALYSIS WITHIN THE 24TH STREET/23RD STREET COUPLET

This section analyzes the forecast parking operations associated with the removal of on-street parking in the 24th Street/23rd Street couplet as part of the proposed project. This analysis considers existing parking capacity, demand and utilization of public parking between D Street and M Street within the couplet. Since public on-street parking is affected by the proposed project, and use of available capacity at private off-street parking facilities is not guaranteed, the analysis conservatively only considers available capacity at public on-street parking areas. While traffic operations are reviewed for year 2015 and 2035 conditions, future growth in traffic is not expected to include additional parking demand. Parking demand is primarily governed by land uses. Future land uses such as redevelopment projects will consider adequacy of parking provided during project approvals. Therefore, the parking analysis is evaluated for existing without and with project conditions. The parking analysis and conclusions provided below have been reviewed and approved by City of Bakersfield staff.

Study Area

Exhibit 44 shows the parking study area, which is analyzed for the following study scenarios:

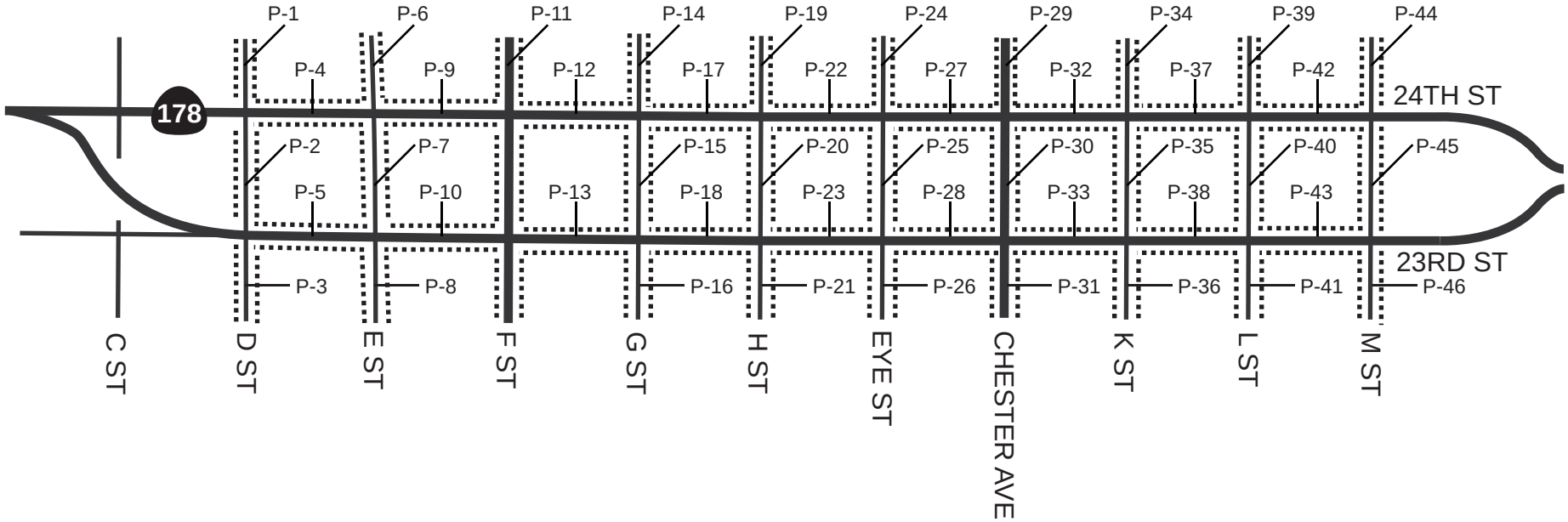
- Existing Conditions; and
- Forecast Existing With Project Conditions.

The study area was evaluated during typical weekday conditions between the hours of 8:00 a.m. to 7:00 p.m. in 60-minute increments. For tracking purposes, parking areas have been identified and are utilized in table summaries as zones P-1 through P-46. Typically a parking zone includes both sides of the road between adjacent streets.

Analysis Methodology

Parked vehicle demand counts were taken on a typical weekday (September 16, 2008), during the following time periods:

- 8:00 a.m. to 9:00 a.m.;
- 9:00 a.m. to 10:00 a.m.;
- 10:00 a.m. to 11:00 a.m.;
- 11:00 a.m. to 12:00 p.m.;
- 12:00 p.m. to 1:00 p.m.;
- 1:00 p.m. to 2:00 p.m.;
- 2:00 p.m. to 3:00 p.m.;
- 3:00 p.m. to 4:00 p.m.;
- 4:00 p.m. to 5:00 p.m.;
- 5:00 p.m. to 6:00 p.m.; and
- 6:00 p.m. to 7:00 p.m.



Legend:

On-Street Parking Zone

Not to Scale

RBF

24th/23rd Street Couplet Parking Study Area

Exhibit 44

Existing Parking Capacity

Based on physical survey of the parking study area, on-street parking capacity has been derived. Where parking spaces are not identified by pavement markings, on-street parking capacity is the segment length divided by typical parking stall length of twenty feet.

Table 33 summarizes the total number of existing on-street parking spaces in the parking study area.

Table 33
Existing Parking Capacity

Parking Zone	Capacity	Parking Zone	Capacity
P-1 (D St north of 24th St)	26	P-24 (Eye north of 24th St)	17
P-2 (D St between 24th and 23rd)	24	P-25 (Eye between 24th and 23rd)	13
P-3 (D St south of 23rd St)	25	P-26 (Eye south of 23rd St)	14
P-4 (24th between D St and E St)	20	P-27 (24th between Eye/Chester)	16
P-5 (23rd between D St and E St)	22	P-28 (23rd between Eye/Chester)	14
P-6 (E St north of 24th St)	24	P-29 (Chester north of 24th St)	19
P-7 (E St between 24th and 23rd)	20	P-30 (Chester between 24th/23rd)	12
P-8 (E St south of 23rd St)	18	P-31 (Chester south of 23rd St)	21
P-9 (24th between E St and F St)	15	P-32 (24th between Chester and K)	16
P-10 (23rd between E St and F St)	19	P-33 (23rd between Chester and K)	16
P-11 (F St north of 24th St)	13	P-34 (K St north of 24th St)	18
P-12 (24th between F St and G St)	18	P-35 (K St between 24th and 23rd)	19
P-13 (23rd between F St and G St)	18	P-36 (K St south of 23rd St)	16
P-14 (G St north of 24th St)	17	P-37 (24th between K St and L St)	13
P-15 (G St between 24th and 23rd)	21	P-38 (23rd between K St and L St)	13
P-16 (G St south of 23rd St)	24	P-39 (L St north of 24th St)	15
P-17 (24th between G St and H St)	16	P-40 (L St between 24th and 23rd)	21
P-18 (23rd between G St and H St)	20	P-41 (L St south of 23rd St)	19
P-19 (H St north of 24th St)	19	P-42 (24th between L St and M St)	6
P-20 (H St between 24th and 23rd)	18	P-43 (23rd between L St and M St)	19
P-21 (H St south of 23rd St)	16	P-44 (M St north of 24th St)	16
P-22 (24th between H St and Eye)	17	P-45 (M St between 24th and 23rd)	22
P-23 (23rd between H St and Eye)	15	P-46 (M St south of 23rd St)	14
Subtotal: On-Street Parking on 24th/23rd Street			***293***
Subtotal: On-Street Parking on North-South Streets			***521***
Total Parking Capacity in parking Study Area			**814**

As shown in Table 33, the parking study area contains 814 on-street parking spaces, consisting of 293 spaces on 24th and 23rd Streets in the couplet, and 521 spaces on north/south streets crossing the couplet.

Existing Parking Demand

Existing parking demand counts were taken in September 2009 during typical weekday conditions. Table 34 summarizes existing parking demand for the study area; detailed parking count data is contained in Appendix G.

Table 34
Existing Parking Demand

Zone	8 – 9 a.m.	9 – 10 a.m.	10 – 11 a.m.	11 – 12 p.m.	12 – 1 p.m.	1 – 2 p.m.	2 – 3 p.m.	3 – 4 p.m.	4 – 5 p.m.	5 – 6 p.m.	6 – 7 p.m.
P-1	12	20	18	17	13	21	21	16	11	8	6
P-2	13	10	10	10	11	13	10	9	11	9	10
P-3	9	7	6	8	6	9	8	9	8	9	8
P-4	6	11	13	9	6	5	6	9	7	2	1
P-5	1	1	2	0	0	0	0	1	1	0	0
P-6	10	16	25	16	14	15	16	25	18	17	13
P-7	13	9	10	8	7	10	8	6	7	10	11
P-8	4	10	9	10	9	7	6	8	8	6	6
P-9	0	0	0	0	0	2	2	0	0	0	0
P-10	1	1	1	0	0	0	0	1	1	0	0
P-11	0	2	3	11	8	5	6	5	6	5	8
P-12	0	0	0	0	0	0	0	0	0	0	0
P-13	0	0	0	0	0	0	0	0	0	0	0
P-14	9	8	9	16	13	11	10	11	8	10	12
P-15	5	6	12	9	9	11	10	8	8	6	3
P-16	7	5	5	6	6	5	4	4	4	4	6
P-17	0	0	0	0	0	0	0	0	0	0	0
P-18	1	2	2	2	2	1	3	1	1	0	0
P-19	5	6	7	6	6	5	6	6	8	5	4
P-20	1	3	3	2	2	2	4	1	1	1	1
P-21	0	1	2	0	0	1	0	2	1	0	1
P-22	0	0	0	0	0	0	0	0	0	0	0
P-23	0	0	0	0	0	0	0	0	0	0	0
P-24	6	6	5	3	4	3	4	4	6	7	5
P-25	3	7	7	6	5	4	3	5	7	4	4
P-26	5	4	4	8	7	4	4	5	6	4	5
P-27	0	0	2	3	2	1	1	2	3	1	0
P-28	0	0	1	0	1	2	1	1	1	1	1
P-29	0	0	0	2	1	2	2	1	2	0	1
P-30	0	2	3	6	6	7	6	2	4	4	4
P-31	1	4	3	7	3	2	3	4	3	3	3
P-32	0	0	1	6	4	0	0	0	1	0	0
P-33	0	0	0	0	0	0	0	0	0	0	0
P-34	10	11	13	10	12	10	9	7	5	7	5
P-35	2	7	4	5	4	2	3	4	4	4	2
P-36	3	4	4	4	4	2	3	1	0	0	0
P-37	0	0	0	0	0	0	0	1	0	0	0
P-38	0	0	0	0	0	0	0	0	1	1	0

Table 34 (continued)
Existing Parking Demand

Zone	8 – 9 a.m.	9 – 10 a.m.	10 – 11 a.m.	11 – 12 p.m.	12 – 1 p.m.	1 – 2 p.m.	2 – 3 p.m.	3 – 4 p.m.	4 – 5 p.m.	5 – 6 p.m.	6 – 7 p.m.
P-39	10	9	7	10	5	6	8	8	8	7	8
P-40	7	7	7	7	7	7	7	6	5	5	6
P-41	3	4	3	3	1	0	0	2	2	3	2
P-42	0	0	0	0	0	0	0	0	0	0	0
P-43	2	3	7	4	3	5	5	5	4	3	4
P-44	2	4	6	5	2	4	3	9	6	5	2
P-45	6	12	13	13	14	15	14	12	13	13	11
P-46	3	6	6	5	3	4	3	7	8	7	4
Total	160	208	233	**237**	200	203	199	208	198	171	157

Note: Peak parking demand total shown in **bold.**

As shown in Table 34, the peak hour of parking demand occurred between 11:00 a.m. and 12:00 p.m. when 237 cars were parked in the parking study area. Based on the study area capacity of 814 on-street parking spaces, during the peak hour of parking demand, on-street parking was 29% utilized. Of the 237 parked within the study area during the peak parking hour, 24 vehicles were parked on 24th Street or 23rd Street.

Exhibit 45 shows peak hour parking utilization at each parking zone.

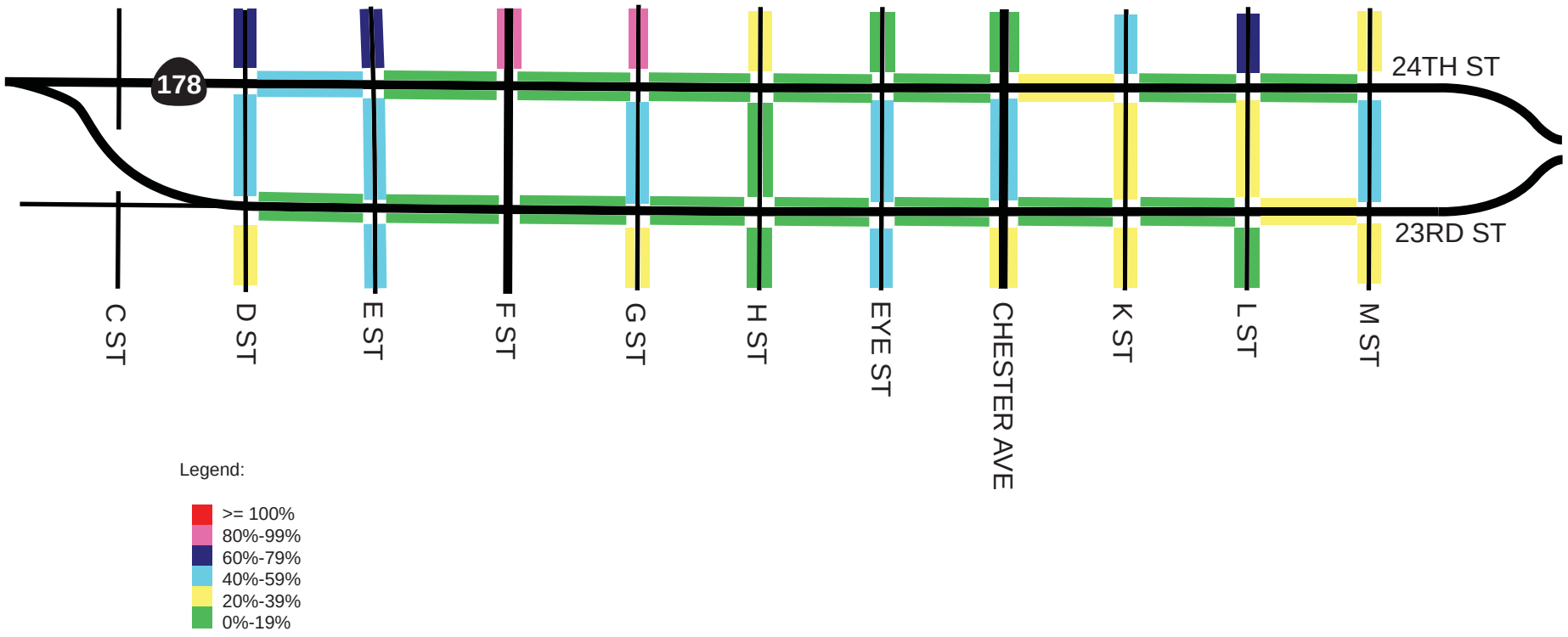
Proposed Project

The proposed 24th Street Improvement project will improve the 24th Street/23rd Street couplet from three travel lanes in each direction to four travel lanes in each direction. As part of the proposed project, on-street parking will be prohibited on 24th Street and 23rd Street in the couplet affecting 293 spaces serving commercial uses downtown. While all parking spaces within the couplet on 24th Street and 23rd Street are affected, only 24 vehicles parked during existing conditions are displaced to adjacent roadways.

Forecast Existing With Project Conditions

Assuming implementation of the proposed project, the 293 existing on-street parking spaces on 24th Street and 23rd Street in the couplet will be removed.

Table 35 summarizes the total number of on-street parking spaces in the parking study area assuming restriction of parking on 24th Street and 23rd Street.



Not to Scale

RBF

Existing Peak Hour Parking Utilization (11:00 AM - 12:00 PM)

Exhibit 45

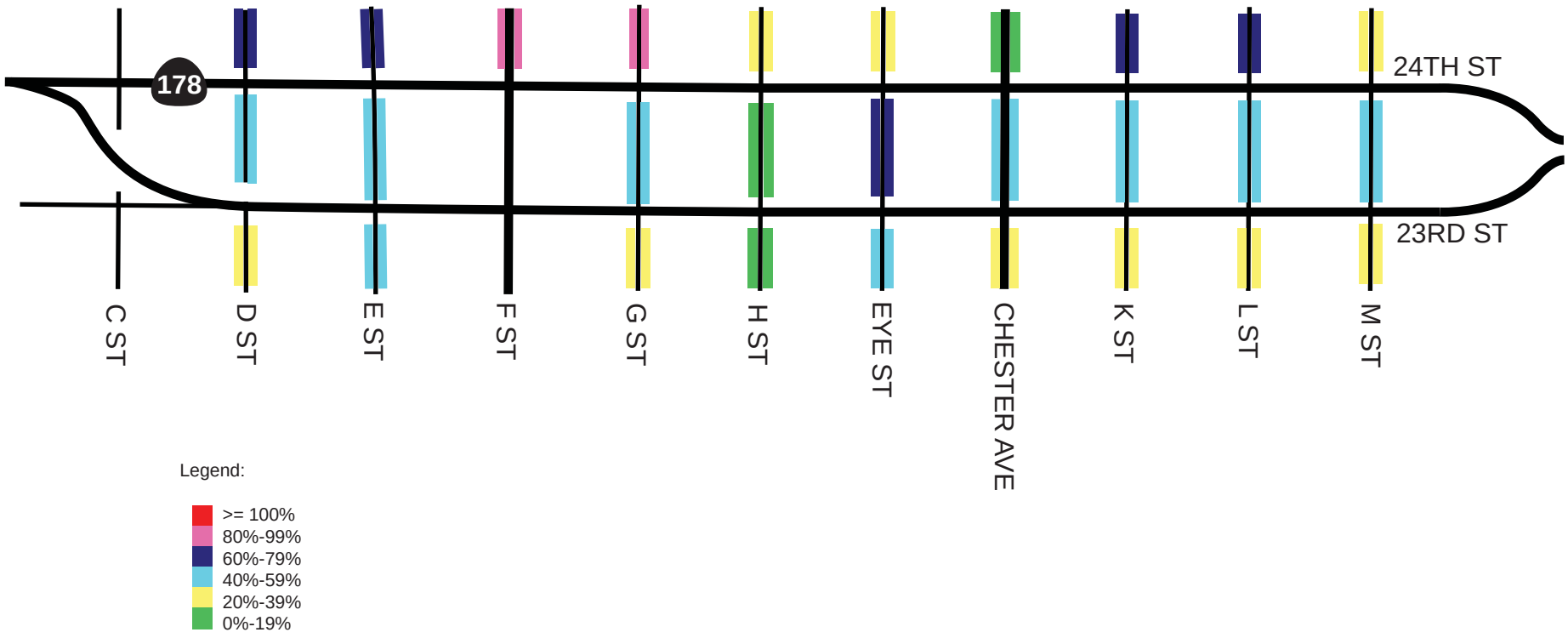
Table 35
Forecast Existing With Project Parking Capacity

Parking Zone	Capacity	Parking Zone	Capacity
P-1 (D St north of 24th St)	26	P-24 (Eye north of 24th St)	17
P-2 (D St between 24th and 23rd)	24	P-25 (Eye between 24th and 23rd)	13
P-3 (D St south of 23rd St)	25	P-26 (Eye south of 23rd St)	14
P-4 (24th between D St and E St)	0	P-27 (24th between Eye/Chester)	0
P-5 (23rd between D St and E St)	0	P-28 (23rd between Eye/Chester)	0
P-6 (E St north of 24th St)	24	P-29 (Chester north of 24th St)	19
P-7 (E St between 24th and 23rd)	20	P-30 (Chester between 24th/23rd)	12
P-8 (E St south of 23rd St)	18	P-31 (Chester south of 23rd St)	21
P-9 (24th between E St and F St)	0	P-32 (24th between Chester and K)	0
P-10 (23rd between E St and F St)	0	P-33 (23rd between Chester and K)	0
P-11 (F St north of 24th St)	13	P-34 (K St north of 24th St)	18
P-12 (24th between F St and G St)	0	P-35 (K St between 24th and 23rd)	19
P-13 (23rd between F St and G St)	0	P-36 (K St south of 23rd St)	16
P-14 (G St north of 24th St)	17	P-37 (24th between K St and L St)	0
P-15 (G St between 24th and 23rd)	21	P-38 (23rd between K St and L St)	0
P-16 (G St south of 23rd St)	24	P-39 (L St north of 24th St)	15
P-17 (24th between G St and H St)	0	P-40 (L St between 24th and 23rd)	21
P-18 (23rd between G St and H St)	0	P-41 (L St south of 23rd St)	19
P-19 (H St north of 24th St)	19	P-42 (24th between L St and M St)	0
P-20 (H St between 24th and 23rd)	18	P-43 (23rd between L St and M St)	0
P-21 (H St south of 23rd St)	16	P-44 (M St north of 24th St)	16
P-22 (24th between H St and Eye)	0	P-45 (M St between 24th and 23rd)	22
P-23 (23rd between H St and Eye)	0	P-46 (M St south of 23rd St)	14
Subtotal: On-Street Parking on 24th/23rd Street			***0***
Subtotal: On-Street Parking on North-South Streets			***521***
Total Parking Capacity in parking Study Area			**521**

As shown in Table 35, assuming implementation of the proposed project, the parking study area will be reduced by 293 spaces to consist of 521 on-street parking spaces.

Existing vehicles parking on 24th Street and 23rd Street displaced by the proposed project will shift to parking on the north-south side streets in the immediate vicinity. Because extra capacity exists on each side street, this analysis assumes displaced parking demand is relocated within 500 feet from the point of displacement. Based on the peak 11:00 a.m. to 12:00 p.m. parking demand of 237 vehicles, on-street parking is forecast to be 45% utilized. Exhibit 46 shows peak hour parking utilization at each parking zone assuming implementation of the proposed project.

As shown in Exhibit 46 and based on the utilization calculation, implementation of the proposed project is not forecast to cause any on-street parking deficiencies within the study area.



Not to Scale

RBF

Forecast Peak Hour Parking Utilization (11:00 AM - 12:00 PM)
Assuming Parking Restriction on 24th Street and 23rd Street in Couplet

Exhibit 46

PARKING ANALYSIS OUSIDE OF THE 24TH STREET/23RD STREET COUPLET

This section analyzes the forecast parking operations associated with the removal of either on-street or off-street parking at six locations outside of the 24th Street/23rd Street couplet as part of the proposed project. The parking analysis and conclusions provided below have been reviewed and approved by City of Bakersfield staff. The following six locations are discussed in more detail related to changes in parking capacity:

- Location 1: Off-street parking lot at northwest corner of Buck Owens Boulevard/24th Street;
- Location 2: Off-street parking lot on Oak Street north of 24th Street;
- Location 3: On-street parking spaces on 23rd Street between C Street and D Street;
- Location 4: Off-street parking lot at northeast corner of E Street/24th Street;
- Location 5: On-street parking spaces on K Street north of 24th Street; and
- Location 6: Off-street parking lot at southeast corner of M Street/24th Street.

Location 1 Parking Review

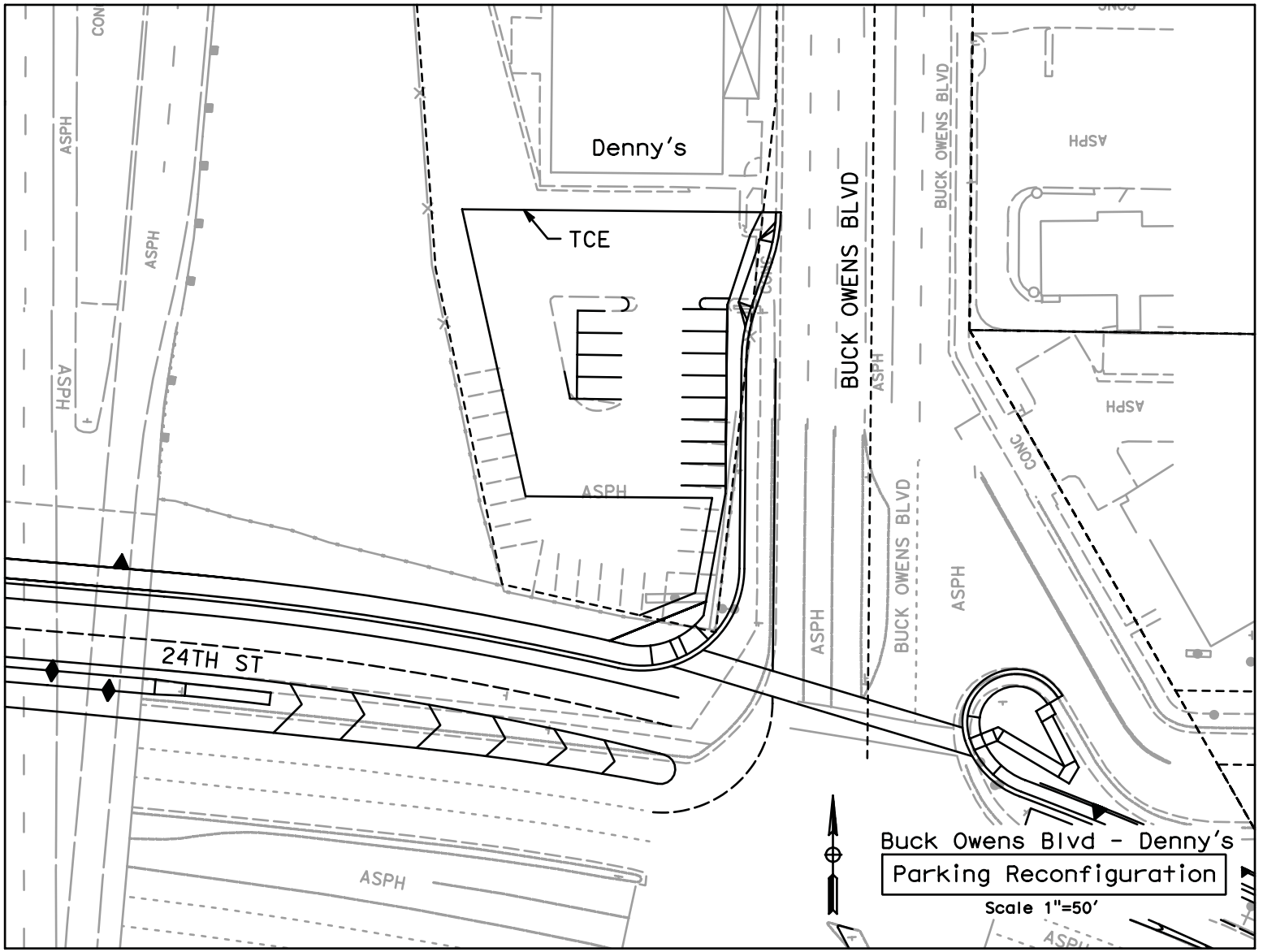
Assuming implementation of the proposed project, existing parking spaces at the Denny's Restaurant parking lot will be reconfigured as shown in Exhibit 47. Since the proposed reconfiguration will not reduce the total number of off-street parking spaces, no parking related deficiency is forecast to occur at Location 1, off-street parking lot at northwest corner of Buck Owens Boulevard/24th Street.

Location 2 Parking Review

Assuming implementation of the proposed project, one existing off-street parking space will be removed at the business named Radiators, Trucks, and Industrial as shown in Exhibit 48. The business off-street parking lot is striped for approximately 14 parking spaces and potentially can accommodate more parking demand as needed. Since the proposed reconfiguration will reduce the parking supply by only one parking space, no parking related deficiency is forecast to occur at Location 2, off-street parking lot on Oak Street north of 24th Street.

Location 3 Parking Review

Assuming implementation of the proposed project, 270 feet of on-street parking supply (accommodating between 10 and 14 parking spaces) on the south side of 23rd Street between C Street and D Street will be removed as shown in Exhibit 49. Based on hourly parking counts collected in April 2010, the peak demand of three (3) parked vehicles can be accommodated by nearby unoccupied on-street parking supply within a one- to two-block radius; detailed parking data is contained in Appendix G. Therefore, no parking related deficiency is forecast to occur at Location 3, on-street parking spaces on 23rd Street between C Street and D Street.

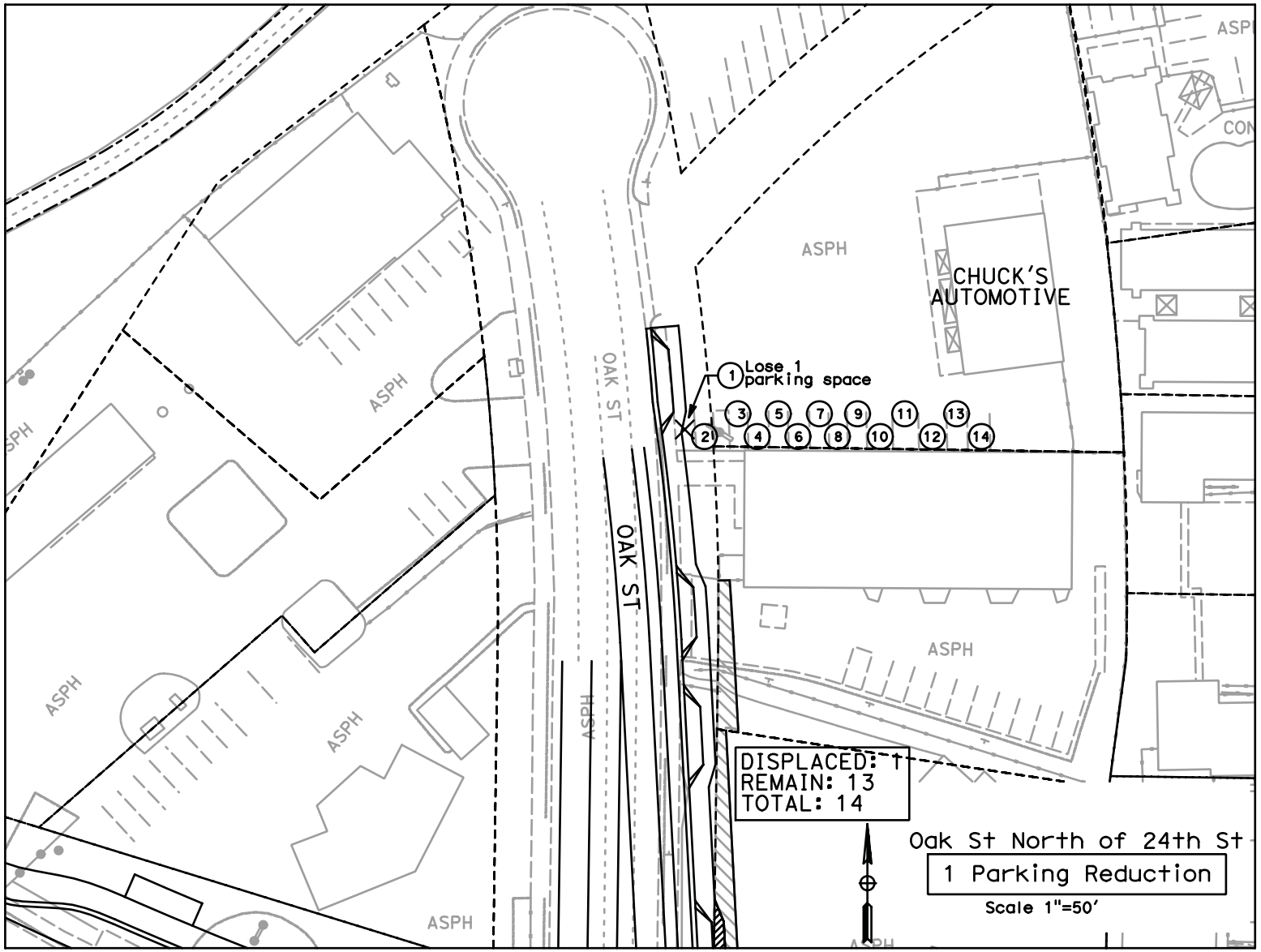


Not to Scale

RBF

Location 1 Parking Review

Exhibit 47



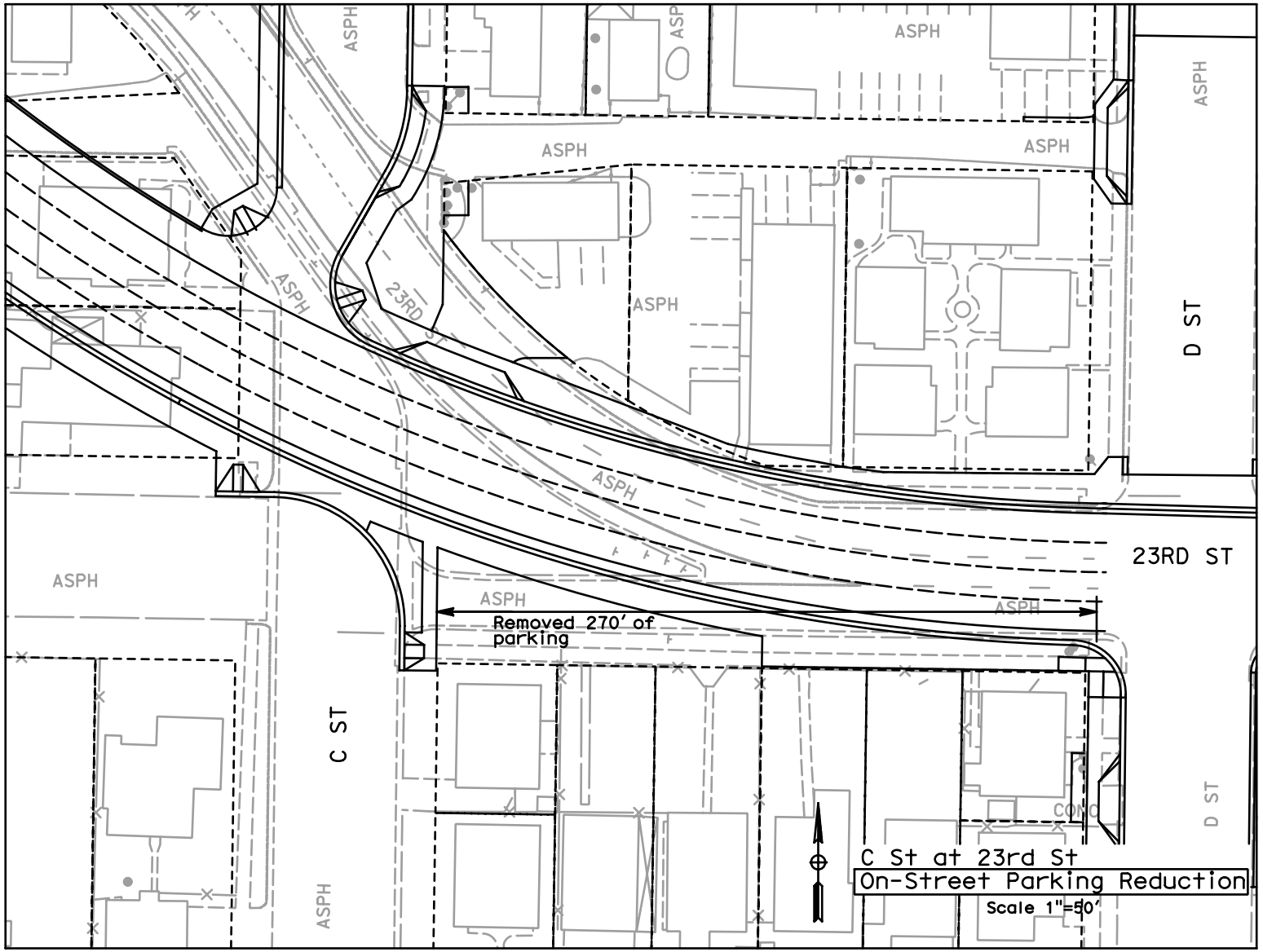
5/6/2010 9:53:29 AM LLARSON H:\pdata\30100916\CADD\TransPlt\Exhibits\Parking Impacts\Parking - Oak St North - Parking Lot.dgn

Not to Scale

RBF

Location 2 Parking Review

Exhibit 48



5/6/2010 10:21:11 AM LLARSON H:\pdata\30100916\CADD\TransPW\Exhibits\Parking Impacts\Parking - C-D at 23rd - On-Street.dgn

Not to Scale

RBF

Location 3 Parking Review

Exhibit 49

Location 4 Parking Review

Assuming implementation of the proposed project, existing parking spaces at the Pep Boy's parking lot will be reconfigured as shown in Exhibit 50. Since the proposed reconfiguration will not reduce the total number of off-street parking spaces, no parking related deficiency is forecast to occur at Location 2, off-street parking lot at northeast corner of E Street/24th Street.

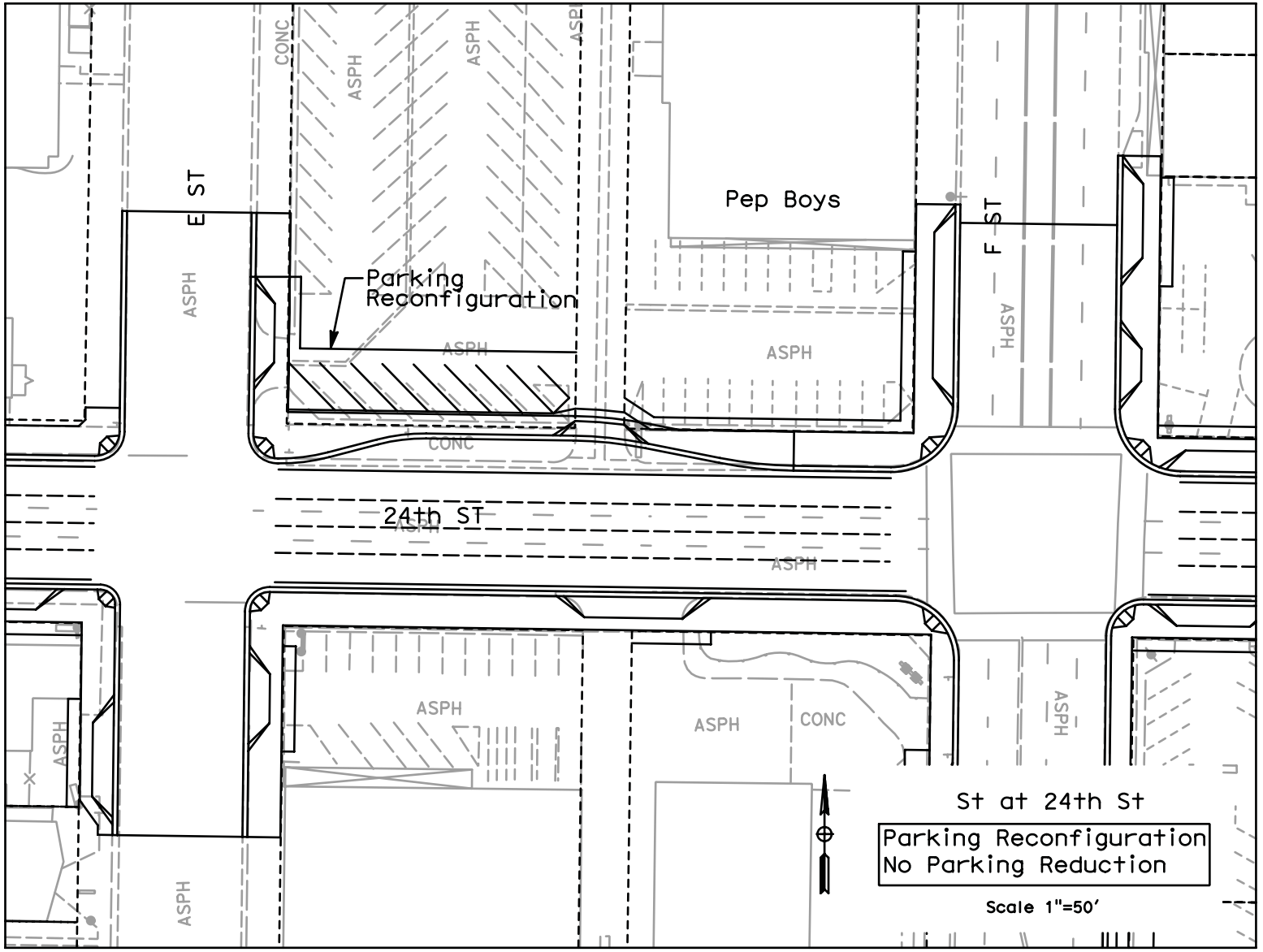
Location 5 Parking Review

Assuming implementation of the proposed project, one existing on-street parking space will be removed on the west side of K Street north of 24th Street as shown in Exhibit 51. Based on parking capacity and demand data provided in Table 34 and Table 35, available capacity of 18 spaces are currently provided with a peak demand of 13 parked vehicles. Since the surplus of 5 parking spaces can accommodate the loss of one parking space without affecting parking demand, no parking related deficiency is forecast to occur at Location 5, on-street parking spaces on K Street north of 24th Street.

Location 6 Parking Review

Assuming implementation of the proposed project, 12 existing off-street parking spaces will be removed from the off-street parking lot at the southeast corner of M Street/24th Street as shown in Exhibit 52. The off-street parking lot at the southeast corner of the M Street/24th Street intersection provides overflow parking supply to the businesses at the southwest corner of the M Street/24th Street intersection. The commercial project was considered by the City of Bakersfield in August 2003 under Site Plan Review No. 03-0852, and required a minimum of 202 parking stalls. On July 30, 2008, the City Council amended the City's parking ordinance with approval of Ordinance #4521, which included adjustments to rates for certain uses and a 50% reduction for developments within the Central District Area (which includes Site Plan Review No. 03-0852). Using current parking ordinance rates, the minimum parking required for the now constructed commercial property is 97 stalls. Since the proposed project will reduce the parking supply by only 12 parking spaces, the City-required 97 space minimum will still be satisfied, and no parking related deficiency is forecast to occur at Location 6, off-street parking lot at southeast corner of M Street/24th Street.

H:\pdata\30100816\Project Info\Traffic\Admin\24th Street TOR 7-20-2010 RevisedApr 2012.doc



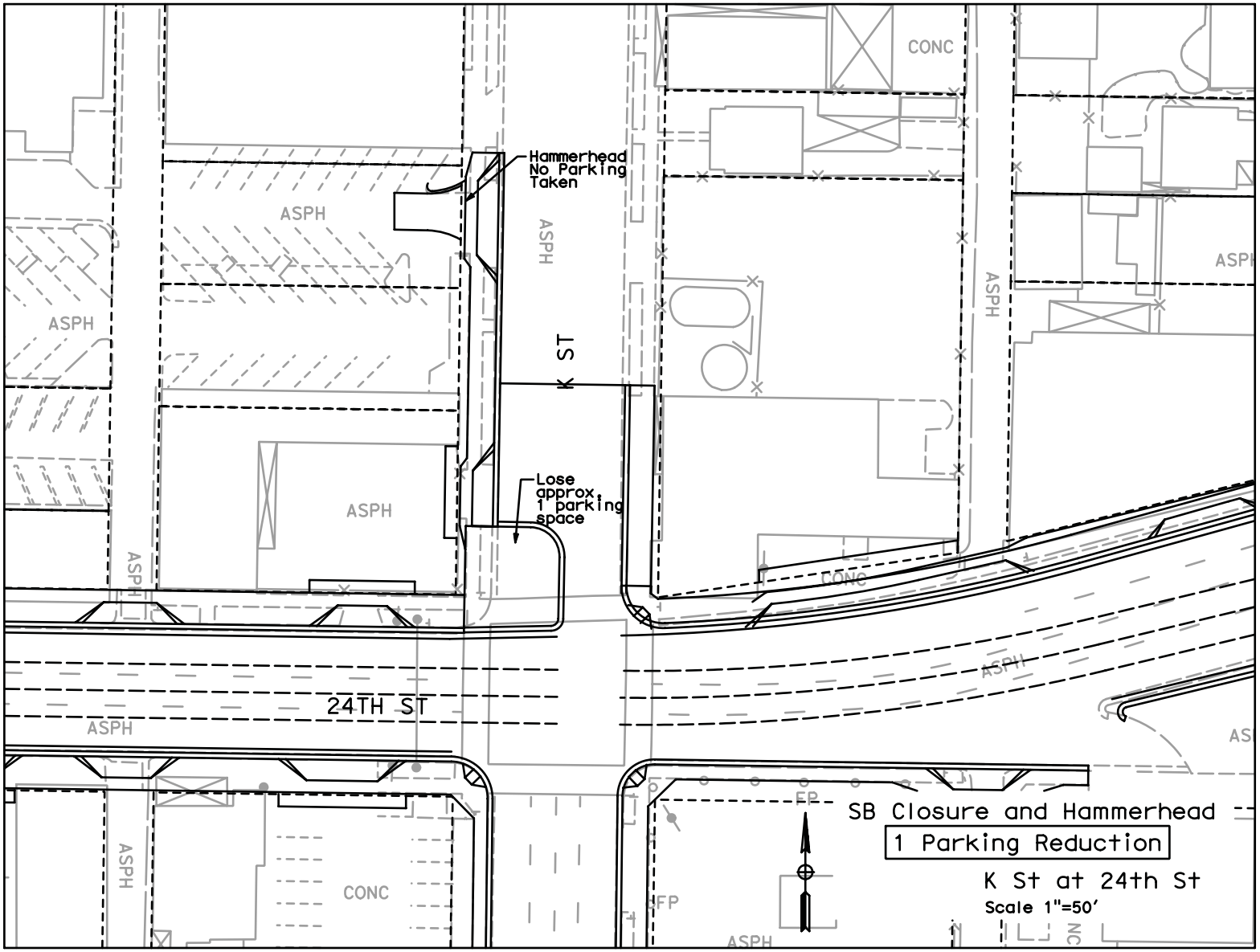
5/6/2010 10:16:33 AM LLARSON H:\pdata\30100916\CADD\TransPM\Exhibits\Parking Impacts\Parking - Couplet - E St at 24th - Parking Lot.dgn

Not to Scale

RBF

Location 4 Parking Review

Exhibit 50



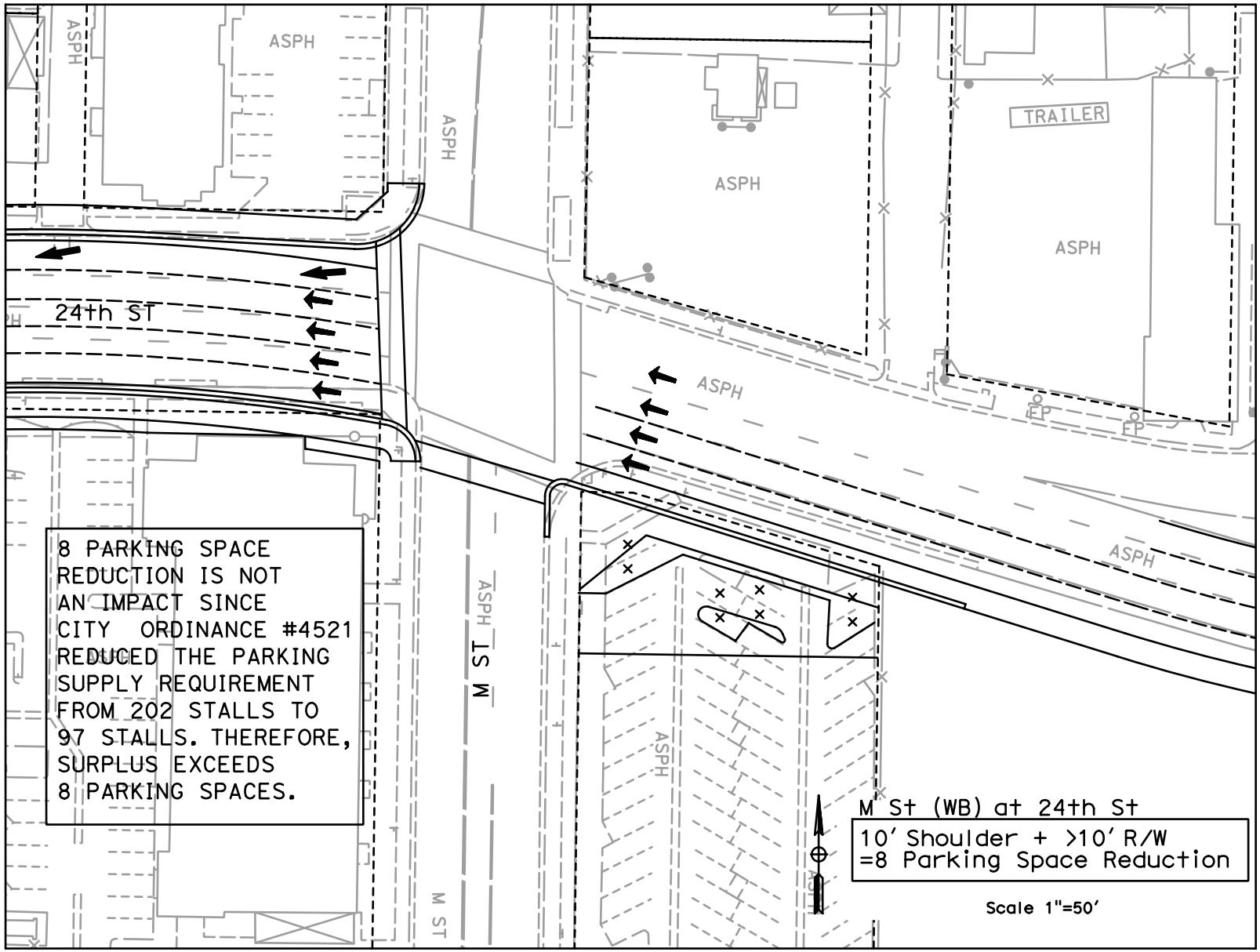
5/6/2010 10:14:01 AM LLARSON H:\pdata\30100916\CADD\TransPW\Exhibits\Parking Impacts\Parking - Couplet - K St at 24th - Closure and Hammerhead.dgn

Not to Scale

RBF

Location 5 Parking Review

Exhibit 51



5/6/2010 8:13:10 AM LLARSON H:\pdata\30100916\CADD\TransPW\Exhibits\Parking Impacts\Parking - Couplet - M St at 24th - Parking Lot.dgn

Not to Scale

RBF

Location 6 Parking Review

Exhibit 52

APPENDIX A
Existing Count Data

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Camino Del Rio Ct DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 58) DAY: THURSDAY PROJECT# 07-8220-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	.5	.5	1	.5	1.5	1	2	0	2	3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	7	0	34	14	1	5	25	386	3	19	284	11	789
7:15 AM	2	0	29	16	0	7	8	545	2	23	325	13	970
7:30 AM	2	0	41	9	0	10	9	597	4	59	376	23	1130
7:45 AM	8	1	50	23	3	11	12	567	5	50	487	23	1240
8:00 AM	7	3	42	28	1	9	9	403	5	42	381	25	955
8:15 AM	12	0	47	19	2	9	7	447	2	32	332	33	942
8:30 AM	10	0	22	30	3	13	8	309	6	35	320	30	786
8:45 AM	7	0	20	29	3	9	5	324	15	48	324	42	826
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 55	NT 4	NR 285	SL 168	ST 13	SR 73	EL 83	ET 3578	ER 42	WL 308	WT 2829	WR 200	TOTAL 7638
PEAK (7-8) VOLUMES =	19	1	154	62	4	33	54	2095	14	151	1472	70	4129
PEAK HR. FACTOR:		0.784			0.770			0.888			0.816		0.866

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Camino Del Rio Ct DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 58) DAY: THURSDAY PROJECT# 07-8220-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	.5	.5	1	.5	1.5	1	2	0	2	3	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	5	1	47	65	3	21	7	404	4	51	283	102	993
3:15 PM	4	3	33	55	2	14	13	429	4	50	324	89	1020
3:30 PM	4	1	48	67	0	15	10	465	5	46	382	101	1144
3:45 PM	6	0	35	95	1	15	6	486	6	65	441	122	1278
4:00 PM	9	1	56	98	0	10	4	446	2	67	364	88	1145
4:15 PM	2	1	30	68	0	18	9	447	7	85	462	120	1249
4:30 PM	10	3	50	77	1	17	7	457	7	71	443	94	1237
4:45 PM	1	0	33	92	0	18	9	413	5	79	418	109	1177
5:00 PM	5	1	40	90	0	19	12	537	3	54	457	96	1314
5:15 PM	5	4	33	72	0	15	16	435	4	86	514	109	1293
5:30 PM	7	3	25	83	0	16	14	429	10	79	441	125	1232
5:45 PM	14	5	34	73	0	18	7	362	8	69	373	104	1067
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 72	NT 23	NR 464	SL 935	ST 7	SR 196	EL 114	ET 5310	ER 65	WL 802	WT 4902	WR 1259	TOTAL 14149
PEAK (4-5) VOLUMES =	22	5	169	335	1	63	29	1763	21	302	1687	411	4808
PEAK HR. FACTOR:		0.734			0.911			0.863			0.892		0.955

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR 99 SB Ramps DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 58) DAY: THURSDAY PROJECT# 07-8220-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	.5	0	2	2	0	3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				34		48		258	177		289	132	938
7:15 AM				40		63		380	254		320	161	1218
7:30 AM				87		115		432	221		360	204	1419
7:45 AM				115		83		370	265		494	201	1528
8:00 AM				71		45		275	168		391	236	1186
8:15 AM				55		42		326	160		315	140	1038
8:30 AM				51		46		236	138		342	173	986
8:45 AM				62		58		186	172		349	185	1012
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 515	ST 0	SR 500	EL 0	ET 2463	ER 1555	WL 0	WT 2860	WR 1432	TOTAL 9325
PEAK (7-8) VOLUMES =	0	0	0	276	0	309	0	1440	917	0	1463	698	5103
PEAK HR. FACTOR:		0.000			0.766			0.905			0.851		0.875

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: SR 99 SB Ramps DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 58) DAY: THURSDAY PROJECT# 07-8220-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	.5	0	2	2	0	3	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM				69		77		246	224		360	277	1253
3:15 PM				60		80		226	271		488	251	1376
3:30 PM				118		106		330	454		430	220	1658
3:45 PM				67		125		294	386		558	416	1846
4:00 PM				55		101		311	320		518	347	1652
4:15 PM				59		109		227	254		443	370	1462
4:30 PM				54		104		244	312		502	292	1508
4:45 PM				54		97		236	305		426	258	1376
5:00 PM				48		70		261	337		445	241	1402
5:15 PM				67		123		247	272		468	241	1418
5:30 PM				34		96		203	230		548	389	1500
5:45 PM				54		87		229	232		519	380	1501
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	0	0	0	739	0	1175	0	3054	3597	0	5705	3682	17952
PEAK (4-5) VOLUMES =	0	0	0	222	0	411	0	1018	1191	0	1889	1267	5998
PEAK HR. FACTOR:		0.000			0.826			0.821			0.848		0.896

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Pierce Rd DATE: 11/06/2007 LOCATION: City of Bakersfield

E-W STREET: Sillect Ave -SR 99 NB Ramps DAY: TUESDAY PROJECT# 07-8220-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	1	2	0	1	.5	.5	1.5	.5	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	30	66	34	4	57	14	54	27	11	21	3	2	323
7:15 AM	36	76	40	5	61	22	69	31	13	28	3	1	385
7:30 AM	37	60	67	7	57	17	100	52	22	26	4	1	450
7:45 AM	40	68	61	12	62	19	116	59	21	32	8	3	501
8:00 AM	46	83	59	15	69	28	129	63	24	29	6	5	556
8:15 AM	50	90	54	9	74	21	133	56	28	32	4	8	559
8:30 AM	54	79	62	10	81	23	117	46	30	37	7	6	552
8:45 AM	53	69	56	7	86	19	92	41	32	35	5	4	499
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 346	NT 591	NR 433	SL 69	ST 547	SR 163	EL 810	ET 375	ER 181	WL 240	WT 40	WR 30	TOTAL 3825
PEAK (7-8) VOLUMES =	143	270	202	28	237	72	339	169	67	107	18	7	1659
PEAK HR. FACTOR:		0.956			0.928			0.947			0.885		0.970

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Pierce Rd DATE: 11/06/2007 LOCATION: City of Bakersfield

E-W STREET: Sillect Ave -SR 99 NB Ramps DAY: TUESDAY PROJECT# 07-8220-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	1	2	0	1	.5	.5	1.5	.5	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	88	101	36	11	82	18	40	23	9	80	7	6	501
3:15 PM	82	105	40	3	73	7	50	24	12	61	4	4	465
3:30 PM	76	103	48	8	135	24	51	19	15	71	12	10	572
3:45 PM	89	88	32	10	111	18	46	20	20	81	9	11	535
4:00 PM	81	85	20	11	150	34	30	16	20	90	7	14	558
4:15 PM	95	87	32	7	85	22	34	14	19	94	12	9	510
4:30 PM	86	87	28	7	125	14	38	21	10	76	12	11	515
4:45 PM	120	86	13	8	113	15	45	18	10	65	10	15	518
5:00 PM	113	85	22	7	166	10	28	10	20	109	24	17	611
5:15 PM	109	72	9	2	110	19	38	19	18	69	7	2	474
5:30 PM	83	62	11	3	82	14	35	12	23	48	8	6	387
5:45 PM	82	65	16	6	63	13	19	14	17	37	3	4	339
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 1104	NT 1026	NR 307	SL 83	ST 1295	SR 208	EL 454	ET 210	ER 193	WL 881	WT 115	WR 109	TOTAL 5985
PEAK (4-5) VOLUMES =	382	345	93	33	473	85	147	69	59	325	41	49	2101
PEAK HR. FACTOR:		0.921			0.788			0.884			0.913		0.951

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Buck Owns-SR 99 NB Ramps DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 58) DAY: THURSDAY PROJECT# 07-8220-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	2	0	1	2	3	0	0	3	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	143		113	27		50	49	239			234	94	949
7:15 AM	144		237	38		49	75	311			299	80	1233
7:30 AM	254		256	44		64	85	390			289	75	1457
7:45 AM	316		267	46		88	85	395			398	129	1724
8:00 AM	187		221	51		70	73	304			289	113	1308
8:15 AM	145		212	44		71	74	323			246	114	1229
8:30 AM	113		198	43		75	80	231			243	75	1058
8:45 AM	191		209	64		80	65	165			274	74	1122
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	1493	0	1713	357	0	547	586	2358	0	0	2272	754	10080
PEAK (7-8) VOLUMES =	857	0	873	155	0	251	294	1335	0	0	1220	378	5363
PEAK HR. FACTOR:		0.807			0.840			0.895			0.793		0.830

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Buck Owens-SR 99 NB Ramps DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 58) DAY: THURSDAY PROJECT# 07-8220-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	0	1	2	0	1	2	3	0	0	3	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	235		160	74		92	151	266			434	134	1546
3:15 PM	218		213	63		83	94	229			410	120	1430
3:30 PM	208		205	89		116	136	276			465	142	1637
3:45 PM	342		241	100		115	82	213			422	123	1638
4:00 PM	296		173	117		112	143	234			457	95	1627
4:15 PM	304		151	134		105	100	205			429	111	1539
4:30 PM	214		158	110		103	60	223			518	138	1524
4:45 PM	262		202	105		102	91	190			390	102	1444
5:00 PM	328		178	158		146	96	200			388	141	1635
5:15 PM	206		158	85		115	129	238			454	121	1506
5:30 PM	227		165	70		108	71	150			321	135	1247
5:45 PM	153		143	42		75	81	163			428	104	1189
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	2993	0	2147	1147	0	1272	1234	2587	0	0	5116	1466	17962
PEAK (4-5) VOLUMES =	1076	0	684	466	0	422	394	852	0	0	1794	446	6134
PEAK HR. FACTOR:		0.823			0.929			0.843			0.924		0.983

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 11/06/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: TUESDAY PROJECT# 07-8220-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1	0	1	0	1	2	1	2	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	65	2	86	4	0	0	3	326	52	83	248	0	869
7:15 AM	63	3	103	3	3	6	1	478	94	118	296	1	1169
7:30 AM	80	3	138	6	4	5	5	483	114	151	302	5	1296
7:45 AM	81	2	114	4	6	5	9	498	195	156	373	6	1449
8:00 AM	95	6	121	8	4	3	12	432	137	143	301	7	1269
8:15 AM	63	5	111	3	3	4	7	451	115	153	278	1	1194
8:30 AM	79	2	100	4	4	5	10	361	99	142	287	1	1094
8:45 AM	90	7	121	2	2	8	4	371	98	139	262	5	1109
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 616	NT 30	NR 894	SL 34	ST 26	SR 36	EL 51	ET 3400	ER 904	WL 1085	WT 2347	WR 26	TOTAL 9449
PEAK (7-8) VOLUMES =	289	10	441	17	13	16	18	1785	455	508	1219	12	4783
PEAK HR. FACTOR:		0.922			0.917			0.875			0.877		0.899

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 11/06/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: TUESDAY PROJECT# 07-8220-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0.5	1	0	1	0	1	2	1	2	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	120	3	103	8	3	6	16	317	104	129	341	1	1151
3:15 PM	128	5	116	5	3	1	13	339	110	151	360	0	1231
3:30 PM	138	2	127	7	2	3	8	347	119	159	385	1	1298
3:45 PM	126	6	135	3	3	4	10	404	129	147	403	1	1371
4:00 PM	118	4	115	4	4	7	5	398	117	116	372	1	1261
4:15 PM	106	6	108	6	2	19	11	382	116	138	410	3	1307
4:30 PM	161	6	129	3	6	6	8	405	114	119	420	4	1381
4:45 PM	128	6	132	7	2	9	10	372	94	172	396	1	1329
5:00 PM	158	5	140	11	5	12	10	407	129	132	413	3	1425
5:15 PM	181	9	109	4	5	6	7	356	100	148	437	3	1365
5:30 PM	167	7	126	6	4	8	9	337	90	159	414	2	1329
5:45 PM	153	5	114	9	7	10	13	351	106	136	386	1	1291
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 1684	NT 64	NR 1454	SL 73	ST 46	SR 91	EL 120	ET 4415	ER 1328	WL 1706	WT 4737	WR 21	TOTAL 15739
PEAK (4-5) VOLUMES =	513	22	484	20	14	41	34	1557	441	545	1598	9	5278
PEAK HR. FACTOR:		0.960			0.679			0.921			0.956		0.965

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Olive St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	1	0	2	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM						0		402			329	0	731
7:15 AM						2		557			418	1	978
7:30 AM						0		596			466	0	1062
7:45 AM						0		618			529	1	1148
8:00 AM						0		538			447	0	985
8:15 AM						1		546			435	0	982
8:30 AM						4		457			420	2	883
8:45 AM						1		507			407	3	918
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	0	0	0	0	0	8	0	4221	0	0	3451	7	7687
PEAK (7-8) VOLUMES =	0	0	0	0	0	2	0	2173	0	0	1742	2	3919
PEAK HR. FACTOR:		0.000			0.250			0.930			0.886		0.910

CONTROL: One-Way Stop (SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Olive St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	1	0	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM						1		426			465	2	894
3:15 PM						1		453			497	3	954
3:30 PM						1		465			551	6	1023
3:45 PM						3		524			563	5	1095
4:00 PM						2		496			500	4	1002
4:15 PM						1		487			536	7	1031
4:30 PM						2		519			538	1	1060
4:45 PM						6		497			567	5	1075
5:00 PM						1		539			547	1	1088
5:15 PM						3		456			582	3	1044
5:30 PM						5		464			569	7	1045
5:45 PM						3		457			516	7	983
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	0	0	0	0	0	29	0	5783	0	0	6431	51	12294
PEAK (4-5) VOLUMES =	0	0	0	0	0	11	0	1999	0	0	2141	17	4168
PEAK HR. FACTOR:		0.000			0.500			0.933			0.959		0.980

CONTROL: One-Way Stop (SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Elm St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				0		0	3	402			327	0	732
7:15 AM				1		2	7	537			421	2	970
7:30 AM				0		0	4	599			451	0	1054
7:45 AM				0		1	10	637			522	1	1171
8:00 AM				3		0	5	522			460	1	991
8:15 AM				2		0	8	515			439	1	965
8:30 AM				0		2	4	438			409	2	855
8:45 AM				1		1	6	497			385	4	894
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	0	0	0	7	0	6	47	4147	0	0	3414	11	7632
PEAK (7-8) VOLUMES =	0	0	0	1	0	3	24	2175	0	0	1721	3	3927
PEAK HR. FACTOR:		0.000			0.583			0.897			0.888		0.894

CONTROL: 1-way stop sign (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Elm St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	1	2	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM				0		3	2	412			460	3	880
3:15 PM				1		6	4	444			490	0	945
3:30 PM				0		7	5	461			565	4	1042
3:45 PM				1		7	3	522			574	1	1108
4:00 PM				1		11	9	493			507	2	1023
4:15 PM				0		13	11	464			510	7	1005
4:30 PM				1		8	3	511			526	2	1051
4:45 PM				1		14	6	487			563	3	1074
5:00 PM				0		10	10	526			540	0	1086
5:15 PM				2		9	4	453			573	2	1043
5:30 PM				3		14	5	469			561	2	1054
5:45 PM				1		7	8	459			513	1	989
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	0	0	0	11	0	109	70	5701	0	0	6382	27	12300
PEAK (4-5) VOLUMES =	0	0	0	3	0	46	29	1955	0	0	2106	14	4153
PEAK HR. FACTOR:		0.000			0.779			0.914			0.976		0.980

CONTROL: 1-way stop sign (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Beech St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	1	2	0	0	10	6	371	1	1	303	1	699
7:15 AM	0	0	4	0	2	13	12	514	0	5	397	4	951
7:30 AM	1	0	1	1	1	17	7	585	2	2	420	2	1039
7:45 AM	1	1	3	0	0	21	11	605	0	6	484	1	1133
8:00 AM	0	1	2	0	0	24	24	480	0	4	418	1	954
8:15 AM	0	1	3	0	0	16	20	525	1	5	444	2	1017
8:30 AM	2	0	2	2	3	13	20	453	2	2	376	0	875
8:45 AM	0	0	3	1	0	14	16	472	3	6	352	0	867
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	7	4	20	4	6	128	116	4005	9	31	3194	11	7535
PEAK (7-8) VOLUMES =	5	2	10	1	3	61	36	2075	3	14	1604	8	3822
PEAK HR. FACTOR:		0.700			0.833			0.917			0.911		0.914

CONTROL: 2-Way stop sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Beech St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		1	0	0	1	8	4	422	1	0	444	0	881
3:15 PM		0	1	0	2	11	4	430	1	1	462	0	912
3:30 PM		1	0	0	0	15	7	469	4	0	526	1	1023
3:45 PM		2	4	0	3	12	6	536	5	3	552	0	1123
4:00 PM		0	3	1	0	11	4	474	3	2	477	1	976
4:15 PM		2	2	3	1	25	9	452	6	5	473	4	982
4:30 PM		0	1	0	0	18	13	481	7	3	500	1	1024
4:45 PM		5	0	0	4	13	8	485	7	0	541	0	1063
5:00 PM		1	1	1	0	18	10	485	3	3	543	5	1070
5:15 PM		1	5	0	1	32	12	476	6	2	585	1	1121
5:30 PM		0	1	2	0	25	10	441	4	0	523	0	1006
5:45 PM		0	3	2	0	19	10	455	5	2	479	1	976
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	0	13	21	9	12	207	97	5606	52	21	6105	14	12157
PEAK (4-5) VOLUMES =	0	7	6	4	5	67	34	1892	23	10	1991	6	4045
PEAK HR. FACTOR:		0.583			0.659			0.995			0.929		0.954

CONTROL: 2-Way stop sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Myrtle St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-011

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	0	0	0	1	1	1	382	2	1	327	3	719
7:15 AM	0	1	1	1	1	0	1	513	0	1	418	0	937
7:30 AM	1	0	2	0	0	2	1	574	1	4	437	1	1023
7:45 AM	0	0	0	0	0	2	3	550	5	4	500	1	1065
8:00 AM	3	1	0	0	1	1	0	486	3	2	443	1	941
8:15 AM	2	0	0	1	0	0	0	523	0	6	466	0	998
8:30 AM	0	0	1	2	0	1	2	465	2	7	406	0	886
8:45 AM	2	0	0	2	0	3	4	480	0	4	370	0	865
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	9	2	4	6	3	10	12	3973	13	29	3367	6	7434
PEAK (7-8) VOLUMES =	2	1	3	1	2	5	6	2019	8	10	1682	5	3744
PEAK HR. FACTOR:		0.563			0.875			0.931			0.923		0.945

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Myrtle St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-011

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	3	0	0	0	0	0	0	435	0	1	427	1	867
3:15 PM	0	0	1	1	0	0	2	449	1	2	456	1	913
3:30 PM	0	1	0	2	2	0	2	458	0	3	515	1	984
3:45 PM	1	0	1	0	3	3	0	517	2	0	534	1	1062
4:00 PM	0	1	2	0	0	4	0	493	1	5	500	5	1011
4:15 PM	1	0	1	0	1	5	3	466	3	0	493	0	973
4:30 PM	1	1	2	0	1	0	1	496	4	0	519	2	1027
4:45 PM	1	0	1	0	3	0	2	508	5	4	566	1	1091
5:00 PM	3	1	3	1	0	0	3	473	4	3	528	4	1023
5:15 PM	0	1	0	0	2	2	0	459	3	1	557	0	1025
5:30 PM	1	2	1	0	0	0	0	469	0	1	541	0	1015
5:45 PM	0	4	1	3	0	2	1	452	1	2	493	1	960
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	11	11	13	7	12	16	14	5675	24	22	6129	17	11951
PEAK (4-5) VOLUMES =	3	2	6	0	5	9	6	1963	13	9	2078	8	4102
PEAK HR. FACTOR:		0.500			0.563			0.950			0.957		0.955

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Spruce St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-012

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	1	0	0	1	3	396	0	0	356	2	759
7:15 AM	0	0	2	1	0	6	2	478	1	1	444	2	937
7:30 AM	0	1	0	0	0	3	3	572	0	3	462	4	1048
7:45 AM	2	0	0	0	0	0	7	552	0	2	525	4	1092
8:00 AM	0	1	2	1	0	4	6	482	1	4	460	6	967
8:15 AM	0	0	0	0	1	0	8	518	3	1	483	3	1017
8:30 AM	1	0	1	4	1	5	4	457	2	1	430	7	913
8:45 AM	1	3	2	0	0	6	2	452	0	4	379	5	854
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 4	NT 5	NR 8	SL 6	ST 2	SR 25	EL 35	ET 3907	ER 7	WL 16	WT 3539	WR 33	TOTAL 7587
PEAK (7-8) VOLUMES =	2	1	3	1	0	10	15	1998	1	6	1787	12	3836
PEAK HR. FACTOR:		0.500			0.450			0.936			0.921		0.944

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Spruce St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-012

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	5	0	1	0	8	3	445	0	1	452	3	918
3:15 PM	0	0	0	0	1	4	1	460	0	1	467	5	939
3:30 PM	1	0	0	0	1	6	3	478	0	1	534	4	1028
3:45 PM	0	0	1	0	0	4	2	489	1	3	547	2	1049
4:00 PM	0	0	2	3	0	3	2	505	1	2	536	4	1058
4:15 PM	2	1	0	1	0	2	1	470	0	2	516	5	1000
4:30 PM	0	0	0	0	0	0	0	516	0	1	546	6	1069
4:45 PM	0	0	0	4	1	4	0	531	1	4	562	3	1110
5:00 PM	3	2	3	0	2	7	2	492	1	5	515	2	1034
5:15 PM	2	1	0	0	1	3	0	466	0	1	540	7	1021
5:30 PM	0	1	0	0	1	6	3	449	4	3	513	4	984
5:45 PM	0	2	1	0	0	5	1	428	0	2	465	5	909
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	8	12	7	9	7	52	18	5729	8	26	6193	50	12119
PEAK (4-5) VOLUMES =	2	1	2	8	1	9	3	2022	2	9	2160	18	4237
PEAK HR. FACTOR:		0.417			0.500			0.953			0.961		0.954

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Pine St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-013

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	2	0	0	0	1	2	395	0	2	366	0	768
7:15 AM	1	0	0	2	2	0	3	491	1	2	460	1	963
7:30 AM	0	0	1	1	0	5	7	560	0	6	489	1	1070
7:45 AM	0	1	0	0	0	1	1	558	1	1	542	3	1108
8:00 AM	0	1	3	0	0	3	4	490	2	3	493	4	1003
8:15 AM	4	0	0	3	1	3	1	518	1	1	507	2	1041
8:30 AM	2	2	0	0	1	7	5	469	0	4	420	1	911
8:45 AM	1	1	0	1	1	4	3	455	0	1	395	1	863
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	8	7	4	7	5	24	26	3936	5	20	3672	13	7727
PEAK (7-8) VOLUMES =	1	3	1	3	2	7	13	2004	2	11	1857	5	3909
PEAK HR. FACTOR:		0.625			0.607			0.945			0.940		0.953

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Pine St DATE: 11/07/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: WEDNESDAY PROJECT# 07-8220-013

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	0	0			1	2	459	1	0	472	1	936
3:15 PM	1	0	1			4	2	470	0	1	488	0	967
3:30 PM	3	0	0			0	1	506	0	3	542	7	1062
3:45 PM	1	1	0			3	3	519	0	0	520	1	1048
4:00 PM	0	0	2			5	5	482	4	0	511	1	1010
4:15 PM	1	3	0			3	0	490	0	4	502	1	1004
4:30 PM	0	0	3			4	3	524	2	2	530	5	1073
4:45 PM	1	0	1			7	8	489	0	0	523	3	1032
5:00 PM	2	3	0			3	4	513	0	4	549	2	1080
5:15 PM	0	0	4			3	6	477	1	5	566	5	1067
5:30 PM	0	0	2			7	3	446	2	2	510	2	974
5:45 PM	0	1	2			4	5	452	4	0	489	6	963
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	9	8	15	0	0	44	42	5827	14	21	6202	34	12216
PEAK (4-5) VOLUMES =	2	3	6	0	0	19	16	1985	6	6	2066	10	4119
PEAK HR. FACTOR:		0.700			0.607			0.958			0.952		0.984

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Cedar St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: THURSDAY PROJECT# 07-8220-014

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	3	0	1	0	380	0	1	354	3	742
7:15 AM	0	2	1	0	1	0	1	469	0	2	433	0	909
7:30 AM	1	0	1	0	0	3	0	530	0	4	483	1	1023
7:45 AM	0	1	0	2	0	4	0	545	0	3	527	2	1084
8:00 AM	0	0	1	0	0	2	1	469	1	7	458	0	939
8:15 AM	1	1	0	1	0	0	2	496	0	5	486	1	993
8:30 AM	1	0	2	0	1	1	1	443	0	1	415	0	865
8:45 AM	0	0	2	0	0	0	2	468	0	4	392	1	869
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 3	NT 4	NR 7	SL 6	ST 2	SR 11	EL 7	ET 3800	ER 1	WL 27	WT 3548	WR 8	TOTAL 7424
PEAK (7-8) VOLUMES =	1	3	2	5	1	8	1	1924	0	10	1797	6	3758
PEAK HR. FACTOR:		0.750			0.500			0.938			0.929		0.932

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Cedar St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: THURSDAY PROJECT# 07-8220-014

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	0	6	0	0	4	1	469	1	1	479	1	962
3:15 PM	1	2	0	1	2	7	2	458	2	4	501	3	983
3:30 PM	1	0	2	0	0	5	2	511	3	2	532	0	1058
3:45 PM	0	4	3	0	1	6	7	527	3	5	511	2	1069
4:00 PM	4	5	0	0	0	9	4	509	2	1	479	5	1018
4:15 PM	0	0	1	0	5	1	2	500	1	3	475	2	990
4:30 PM	2	6	0	1	0	5	8	516	1	7	516	4	1066
4:45 PM	3	7	2	1	4	7	4	499	1	4	476	7	1015
5:00 PM	0	3	0	1	0	8	6	518	5	6	529	6	1082
5:15 PM	6	2	1	2	0	0	2	488	2	1	566	3	1073
5:30 PM	1	2	0	3	1	4	5	422	4	5	500	1	948
5:45 PM	1	3	2	0	0	3	2	455	1	2	467	0	936
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	19	34	17	9	13	59	45	5872	26	41	6031	34	12200
PEAK (4-5) VOLUMES =	9	18	3	2	9	22	18	2024	5	15	1946	18	4089
PEAK HR. FACTOR:		0.667			0.604			0.969			0.932		0.979

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Alder St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: THURSDAY PROJECT# 07-8220-015

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	1	0	2	1	394	0	0	345	0	743
7:15 AM	0	3	2	0	0	2	0	453	0	0	417	4	881
7:30 AM	1	0	0	3	0	3	0	511	0	0	491	0	1009
7:45 AM	1	0	2	0	1	0	1	554	2	3	516	1	1081
8:00 AM	0	0	0	2	1	1	0	475	1	2	470	0	952
8:15 AM	0	1	1	0	1	0	0	454	0	1	471	5	934
8:30 AM	2	0	0	0	3	2	0	443	3	4	406	2	865
8:45 AM	0	1	0	4	0	0	0	431	0	0	417	1	854
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	4	5	5	10	6	10	2	3715	6	10	3533	13	7319
PEAK (7-8) VOLUMES =	2	3	4	4	1	7	2	1912	2	3	1769	5	3714
PEAK HR. FACTOR:		0.500			0.500			0.897			0.942		0.920

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Alder St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: THURSDAY PROJECT# 07-8220-015

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	1	1	0	0	2	1	467	0	1	495	0	968
3:15 PM	3	0	5	0	0	0	2	438	2	3	517	0	970
3:30 PM	0	0	0	0	3	0	2	526	1	2	552	2	1088
3:45 PM	2	1	3	0	1	7	3	550	0	1	521	1	1090
4:00 PM	0	0	1	4	0	0	0	517	0	0	469	1	992
4:15 PM	6	4	0	3	2	5	5	486	3	0	463	0	977
4:30 PM	0	2	3	0	0	6	2	520	0	0	482	1	1016
4:45 PM	2	1	4	1	0	0	0	513	2	1	439	0	963
5:00 PM	1	2	2	0	5	3	1	539	1	0	546	5	1105
5:15 PM	5	0	0	1	2	8	4	479	0	2	571	3	1075
5:30 PM	1	2	4	1	1	3	1	429	0	3	496	3	944
5:45 PM	1	2	1	1	1	4	0	466	1	0	482	1	960
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 21	NT 15	NR 24	SL 11	ST 15	SR 38	EL 21	ET 5930	ER 10	WL 13	WT 6033	WR 17	TOTAL 12148
PEAK (4-5) VOLUMES =	8	7	8	8	2	11	7	2036	5	1	1853	2	3948
PEAK HR. FACTOR:		0.786			0.591			0.952			0.890		0.941

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: B St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: THURSDAY PROJECT# 07-8220-016

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	2	0	1	8	362	1	1	325	1	701
7:15 AM	0	0	0	1	0	3	13	439	1	0	385	2	844
7:30 AM	0	1	0	0	0	2	6	493	3	0	496	2	1003
7:45 AM	0	1	3	1	1	4	10	538	5	1	499	1	1064
8:00 AM	1	2	0	4	1	2	4	421	1	3	459	1	899
8:15 AM	0	0	2	0	2	1	7	437	0	0	439	1	889
8:30 AM	1	3	0	5	0	1	5	401	4	0	408	3	831
8:45 AM	1	0	4	0	0	3	8	466	2	1	402	1	888
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	3	7	9	13	4	17	61	3557	17	6	3413	12	7119
PEAK (7-8) VOLUMES =	0	2	3	4	1	10	37	1832	10	2	1705	6	3612
PEAK HR. FACTOR:		0.625			0.643			0.870			0.949		0.906

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: B St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St (SR 178) DAY: THURSDAY PROJECT# 07-8220-016

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	1	0	1	0	2	3	4	453	1	1	479	1	946
3:15 PM	0	0	1	0	0	2	4	446	3	2	506	2	966
3:30 PM	1	2	2	2	1	6	9	522	2	4	531	2	1084
3:45 PM	0	1	0	0	0	7	11	556	5	3	492	3	1078
4:00 PM	4	2	0	1	0	4	8	510	1	5	442	3	980
4:15 PM	0	0	3	3	2	8	5	493	2	2	433	2	953
4:30 PM	1	2	0	4	0	3	9	515	0	6	458	4	1002
4:45 PM	1	1	0	1	0	6	7	519	4	2	427	4	972
5:00 PM	2	0	5	3	3	4	4	546	6	3	536	4	1116
5:15 PM	0	3	1	0	2	7	3	486	0	5	581	5	1093
5:30 PM	4	0	2	1	3	6	7	419	7	5	478	7	939
5:45 PM	0	1	0	2	0	2	3	449	5	8	454	4	928
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 14	NT 12	NR 15	SL 17	ST 13	SR 58	EL 74	ET 5914	ER 36	WL 46	WT 5817	WR 41	TOTAL 12057
PEAK (4-5) VOLUMES =	6	5	3	9	2	21	29	2037	7	15	1760	13	3907
PEAK HR. FACTOR:		0.571			0.825			0.944			0.861		0.937

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: C St | DATE: 11/08/2007 | LOCATION: City of Bakersfield

E-W STREET: 24th St | DAY: THURSDAY | PROJECT# 07-8220-017

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0			0	1				0	327	3	331
7:15 AM	1	0			0	0				0	361	2	364
7:30 AM	0	0			0	3				0	512	0	515
7:45 AM	0	0			0	1				0	490	0	491
8:00 AM	0	0			0	0				0	474	1	475
8:15 AM	0	0			2	1				2	421	5	431
8:30 AM	1	1			0	4				0	409	2	417
8:45 AM	1	0			1	3				0	411	2	418
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	3	1	0	0	3	13	0	0	0	2	3405	15	3442
PEAK (7-8) VOLUMES =	1	0	0	0	0	5	0	0	0	0	1690	5	1701
PEAK HR. FACTOR:		0.000			0.583			0.000			0.930		0.928

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: C St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-017

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	1	0			0	1				1	497	0	500
3:15 PM	0	0			1	3				0	540	2	546
3:30 PM	0	0			0	1				0	519	0	520
3:45 PM	0	0			0	1				0	487	2	490
4:00 PM	0	1			0	2				0	425	3	431
4:15 PM	1	2			0	0				0	414	0	417
4:30 PM	0	0			0	3				1	449	4	457
4:45 PM	1	0			1	1				0	406	0	409
5:00 PM	0	0			0	0				1	537	1	539
5:15 PM	0	1			0	2				1	597	0	601
5:30 PM	0	0			0	4				0	465	6	475
5:45 PM	2	0			0	0				0	435	2	439
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	5	4	0	0	2	18	0	0	0	4	5771	20	5824
PEAK (4-5) VOLUMES =	2	3	0	0	1	6	0	0	0	1	1694	7	1714
PEAK HR. FACTOR:		0.250			0.438			0.000			0.945		0.941

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Drake St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-018

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0			3	1				0	316	0	320
7:15 AM	1	1			0	1				1	366	2	372
7:30 AM	3	0			0	1				1	515	4	524
7:45 AM	0	0			1	2				1	487	0	491
8:00 AM	1	1			1	0				3	470	4	480
8:15 AM	1	1			2	1				0	425	2	432
8:30 AM	4	0			0	1				1	399	1	406
8:45 AM	0	1			0	3				2	413	1	420
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	10	4	0	0	7	10	0	0	0	9	3391	14	3445
PEAK (7-8) VOLUMES =	4	1	0	0	4	5	0	0	0	3	1684	6	1707
PEAK HR. FACTOR:		0.583			0.667			0.000			0.919		0.919

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Drake St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-018

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	1	0			1	1				1	493	1	498
3:15 PM	4	1			0	2				3	506	0	516
3:30 PM	0	2			0	0				0	500	4	506
3:45 PM	0	0			3	1				4	459	1	468
4:00 PM	2	5			1	0				0	413	2	423
4:15 PM	0	1			0	1				3	391	5	401
4:30 PM	3	0			3	1				1	420	4	432
4:45 PM	2	0			4	1				4	394	0	405
5:00 PM	1	4			0	1				7	563	3	579
5:15 PM	1	2			2	1				7	632	1	646
5:30 PM	0	3			6	4				6	476	1	496
5:45 PM	2	1			1	2				4	459	2	471
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	16	19	0	0	21	15	0	0	0	40	5706	24	5841
PEAK (4-5) VOLUMES =	7	6	0	0	8	3	0	0	0	8	1618	11	1661
PEAK HR. FACTOR:		0.700			0.425			0.000			0.844		0.848

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Encina St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-019

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0			1	1				1	327	2	332
7:15 AM	2	3			0	0				0	371	0	376
7:30 AM	2	0			0	0				0	511	4	517
7:45 AM	0	0			1	1				2	497	1	502
8:00 AM	0	1			2	0				0	480	0	483
8:15 AM	0	4			3	1				4	441	3	456
8:30 AM	2	0			1	1				1	408	1	414
8:45 AM	3	6			2	0				5	424	3	443
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 9	NT 14	NR 0	SL 0	ST 10	SR 4	EL 0	ET 0	ER 0	WL 13	WT 3459	WR 14	TOTAL 3523
PEAK (7-8) VOLUMES =	4	3	0	0	2	2	0	0	0	3	1706	7	1727
PEAK HR. FACTOR:		0.438			0.500			0.000			0.943		0.947

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Encina St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-019

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	1			1	5				1	506	1	515
3:15 PM	1	0			0	3				0	523	2	529
3:30 PM	2	3			0	5				3	502	2	517
3:45 PM	3	2			5	2				0	466	0	478
4:00 PM	0	0			1	4				1	436	3	445
4:15 PM	0	0			2	6				5	420	2	435
4:30 PM	0	1			1	3				0	448	0	453
4:45 PM	4	2			1	8				4	400	1	420
5:00 PM	0	3			3	10				2	579	0	597
5:15 PM	1	2			0	13				0	643	1	660
5:30 PM	5	7			4	7				3	480	3	509
5:45 PM	2	4			0	11				1	474	5	497
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	18	25	0	0	18	77	0	0	0	20	5877	20	6055
PEAK (4-5) VOLUMES =	4	3	0	0	5	21	0	0	0	10	1704	6	1753
PEAK HR. FACTOR:		0.500			0.923			0.000			0.851		0.857

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: F St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-020

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	0	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	11	30			61	14				36	319	8	479
7:15 AM	11	54			77	20				29	370	5	566
7:30 AM	16	60			105	20				52	490	9	752
7:45 AM	9	107			130	13				78	505	14	856
8:00 AM	8	111			125	23				56	452	10	785
8:15 AM	10	71			83	19				56	396	22	657
8:30 AM	15	98			77	22				40	348	13	613
8:45 AM	14	112			98	22				34	419	12	711
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 94	NT 643	NR 0	SL 0	ST 756	SR 153	EL 0	ET 0	ER 0	WL 381	WT 3299	WR 93	TOTAL 5419
PEAK (7-8) VOLUMES =	47	251	0	0	373	67	0	0	0	195	1684	36	2653
PEAK HR. FACTOR:		0.824			0.875			0.000			0.896		0.891

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: F St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 07-8220-020

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	0	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	11	104			97	43				36	474	1	766
3:15 PM	14	86			116	39				36	496	4	791
3:30 PM	26	112			83	38				46	466	7	778
3:45 PM	17	70			115	21				38	447	5	713
4:00 PM	17	73			85	27				32	407	3	644
4:15 PM	22	110			89	36				37	384	4	682
4:30 PM	25	100			115	58				37	382	4	721
4:45 PM	24	118			101	55				35	340	0	673
5:00 PM	43	142			97	34				61	539	11	927
5:15 PM	30	133			133	41				46	600	9	992
5:30 PM	22	92			82	37				42	454	6	735
5:45 PM	15	70			73	35				36	460	8	697
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	266	1210	0	0	1186	464	0	0	0	482	5449	62	9119
PEAK (7-8) VOLUMES =	88	401	0	0	390	176	0	0	0	141	1513	11	2720
PEAK HR. FACTOR:		0.739			0.764			0.000			0.867		0.845

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: C St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 07-8220-021

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	8	0	0	0		0	0				8
7:15 AM	1	0	13	0	0	0		0	0				14
7:30 AM	0	0	10	2	0	0		1	1				14
7:45 AM	0	1	19	0	0	0		2	0				22
8:00 AM	0	0	17	0	1	0		2	0				20
8:15 AM	0	0	20	0	0	0		3	1				24
8:30 AM	2	0	14	0	0	0		2	0				18
8:45 AM	0	0	21	0	0	1		1	2				25
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	3	1	122	2	1	1	0	11	4	0	0	0	145
PEAK (7-8) VOLUMES =	1	1	50	2	0	0	0	3	1	0	0	0	58
PEAK HR. FACTOR:		0.881			0.500			0.688			0.000		0.870

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: C St | DATE: 11/08/2007 | LOCATION: City of Bakersfield

E-W STREET: 23rd St | DAY: THURSDAY | PROJECT# 07-8220-021

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	0	0	10	0	0	0	0	0	0				10
3:15 PM	0	0	13	0	0	1	0	3	0				17
3:30 PM	0	0	16	0	1	0	1	0	0				18
3:45 PM	0	0	19	0	0	2	0	1	1				23
4:00 PM	0	1	22	1	0	0	0	0	0				24
4:15 PM	0	1	16	0	0	0	0	1	0				18
4:30 PM	0	0	15	0	0	1	0	1	0				17
4:45 PM	1	0	21	0	0	0	0	3	2				27
5:00 PM	1	0	14	0	1	0	2	0	0				18
5:15 PM	1	1	19	0	0	0	1	1	0				23
5:30 PM	0	0	13	2	0	0	0	1	0				16
5:45 PM	0	1	17	0	0	1	0	2	1				22
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 3	NT 4	NR 195	SL 3	ST 2	SR 5	EL 4	ET 13	ER 4	WL 0	WT 0	WR 0	TOTAL 233
PEAK (4-5) VOLUMES =	1	2	74	1	0	1	0	5	2	0	0	0	86
PEAK HR. FACTOR:		0.837			0.500			0.350			0.000		0.796

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: D St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St (SR 178) DAY: THURSDAY PROJECT# 07-8220-022

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2.5	.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		0	0	1	0		0	358	1				360
7:15 AM		1	3	2	0		4	442	0				452
7:30 AM		1	0	0	1		0	486	1				489
7:45 AM		0	1	3	0		2	552	0				558
8:00 AM		0	2	1	4		0	399	1				407
8:15 AM		1	1	0	0		5	416	2				425
8:30 AM		0	2	1	1		1	393	2				400
8:45 AM		3	0	2	0		3	487	3				498
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	6	9	10	6	0	15	3533	10	0	0	0	3589
PEAK (7-8) VOLUMES =	0	2	4	6	1	0	6	1838	2	0	0	0	1859
PEAK HR. FACTOR:		0.500			0.550			0.852			0.000		0.854

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: D St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St (SR 178) DAY: THURSDAY PROJECT# 07-8220-022

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2.5	.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		3	0	0	0		0	461	0				464
3:15 PM		0	1	4	1		0	439	0				445
3:30 PM		0	0	3	2		0	538	1				544
3:45 PM		0	3	1	1		2	593	1				601
4:00 PM		1	0	6	0		0	518	0				525
4:15 PM		0	1	3	1		5	490	0				500
4:30 PM		0	2	5	0		1	518	2				528
4:45 PM		1	1	9	3		0	521	1				536
5:00 PM		0	0	11	0		1	569	2				583
5:15 PM		2	5	8	1		0	478	2				496
5:30 PM		1	1	4	2		3	432	0				443
5:45 PM		2	0	7	0		0	475	0				484
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 10	NR 14	SL 61	ST 11	SR 0	EL 12	ET 6032	ER 9	WL 0	WT 0	WR 0	TOTAL 6149
PEAK (4-5) VOLUMES =	0	2	4	23	4	0	6	2047	3	0	0	0	2089
PEAK HR. FACTOR:		0.417			0.708			0.901			0.000		0.903

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: E St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St (SR 178) DAY: THURSDAY PROJECT# 07-8220-023

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		0	0	1	2		0	347	0				350
7:15 AM		2	0	0	1		2	462	2				469
7:30 AM		2	0	1	0		1	499	0				503
7:45 AM		0	1	0	3		4	553	2				563
8:00 AM		1	0	0	0		0	387	0				388
8:15 AM		0	1	2	5		0	410	3				421
8:30 AM		3	1	4	0		1	386	0				395
8:45 AM		4	2	0	3		3	491	1				504
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	12	5	8	14	0	11	3535	8	0	0	0	3593
PEAK (7-8) VOLUMES =	0	4	1	2	6	0	7	1861	4	0	0	0	1885
PEAK HR. FACTOR:		0.750			0.417			0.855			0.000		0.854

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: E St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St (SR 178) DAY: THURSDAY PROJECT# 07-8220-023

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		0	0	0	0		0	479	3				482
3:15 PM		1	0	0	0		0	454	2				457
3:30 PM		2	0	0	0		3	549	0				554
3:45 PM		0	3	1	0		1	615	1				621
4:00 PM		0	0	5	0		3	497	0				505
4:15 PM		2	4	0	2		1	520	4				533
4:30 PM		0	1	0	0		4	533	0				538
4:45 PM		3	2	0	1		1	548	1				556
5:00 PM		0	0	3	1		0	594	1				599
5:15 PM		0	2	1	1		1	473	2				480
5:30 PM		1	2	0	1		0	446	0				450
5:45 PM		1	1	0	0		0	497	4				503
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 10	NR 15	SL 10	ST 6	SR 0	EL 14	ET 6205	ER 18	WL 0	WT 0	WR 0	TOTAL 6278
PEAK (4-5) VOLUMES =	0	5	7	5	3	0	9	2098	5	0	0	0	2132
PEAK HR. FACTOR:		0.500			0.438			0.927			0.000		0.929

CONTROL: 2-Way Stop (NB,SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: F St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 07-8220-024

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		26	9	20	66		17	345	5				488
7:15 AM		57	12	34	96		20	447	7				673
7:30 AM		77	27	27	125		38	470	3				767
7:45 AM		102	24	25	167		48	516	7				889
8:00 AM		70	11	23	156		56	346	8				670
8:15 AM		64	24	33	137		60	367	5				690
8:30 AM		58	15	39	126		33	355	15				641
8:45 AM		71	13	27	140		30	473	6				760
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	525	135	228	1013	0	302	3319	56	0	0	0	5578
PEAK (7-8) VOLUMES =	0	262	72	106	454	0	123	1778	22	0	0	0	2817
PEAK HR. FACTOR:		0.792			0.902			0.842			0.000		0.848

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: F St DATE: 11/08/2007 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 07-8220-024

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		85	20	34	102		43	452	10				746
3:15 PM		94	44	26	96		31	447	7				745
3:30 PM		93	29	25	135		26	527	11				846
3:45 PM		74	27	25	93		27	600	11				857
4:00 PM		125	44	29	113		32	472	9				824
4:15 PM		89	39	37	113		23	498	8				807
4:30 PM		96	24	35	94		31	527	6				813
4:45 PM		103	38	36	74		28	531	11				821
5:00 PM		153	31	24	107		20	528	15				878
5:15 PM		156	44	16	182		17	490	8				913
5:30 PM		113	25	30	119		16	434	9				746
5:45 PM		103	32	32	87		33	487	9				783
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	1284	397	349	1315	0	327	5993	114	0	0	0	9779
PEAK (4-5) VOLUMES =	0	413	145	137	394	0	114	2028	34	0	0	0	3265
PEAK HR. FACTOR:		0.806			0.717			0.970			0.000		0.938

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/13/2007 LOCATION: City of Bakersfield

E-W STREET: 21st St DAY: THURSDAY PROJECT# 07-8240-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	150	51	6	100	21	14	14	3	6	9	9	386
7:15 AM	3	147	100	8	185	19	16	23	2	20	15	7	545
7:30 AM	5	174	101	16	217	37	9	31	2	31	25	11	659
7:45 AM	5	171	90	27	287	54	13	15	2	35	27	7	733
8:00 AM	4	174	55	15	212	45	12	13	1	21	16	14	582
8:15 AM	4	140	51	14	219	43	22	23	2	10	25	9	562
8:30 AM	4	131	46	13	178	27	17	13	5	19	15	5	473
8:45 AM	5	152	33	8	167	30	24	25	3	8	24	7	486
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 33	NT 1239	NR 527	SL 107	ST 1565	SR 276	EL 127	ET 157	ER 20	WL 150	WT 156	WR 69	TOTAL 4426
PEAK (7-8) VOLUMES =	16	642	342	57	789	131	52	83	9	92	76	34	2323
PEAK HR. FACTOR:		0.870			0.806			0.771			0.837		0.865

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/13/2007 LOCATION: City of Bakersfield

E-W STREET: 21st St DAY: THURSDAY PROJECT# 07-8240-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	8	211	42	14	219	27	34	30	1	17	25	14	642
3:15 PM	10	226	49	6	233	25	22	14	10	31	27	22	675
3:30 PM	11	223	46	8	233	32	21	17	6	23	21	18	659
3:45 PM	11	229	60	15	223	40	17	19	17	35	26	9	701
4:00 PM	8	230	36	11	239	33	22	27	15	29	22	20	692
4:15 PM	7	196	48	11	236	31	35	33	10	31	21	16	675
4:30 PM	4	215	43	8	217	31	34	29	16	42	29	9	677
4:45 PM	6	201	74	8	253	29	30	24	6	25	17	21	694
5:00 PM	1	215	87	15	255	28	32	34	21	36	22	28	774
5:15 PM	5	207	67	12	187	13	35	31	11	32	24	28	652
5:30 PM	4	206	71	7	194	21	29	28	5	33	22	17	637
5:45 PM	4	206	39	9	170	19	15	29	6	21	9	12	539
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 79	NT 2565	NR 662	SL 124	ST 2659	SR 329	EL 326	ET 315	ER 124	WL 355	WT 265	WR 214	TOTAL 8017
PEAK (4-5) VOLUMES =	25	842	201	38	945	124	121	113	47	127	89	66	2738
PEAK HR. FACTOR:		0.905			0.941			0.874			0.863		0.911

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/06/2007 LOCATION: City of Bakersfield

E-W STREET: 19th St DAY: THURSDAY PROJECT# 07-8240-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	6	167	8	5	99	7	0	0	2	1	4	3	302
7:15 AM	10	221	8	4	173	11	2	2	4	1	3	3	442
7:30 AM	9	275	13	4	222	17	4	2	6	12	6	0	570
7:45 AM	20	301	24	9	277	19	1	1	7	8	9	4	680
8:00 AM	15	220	19	7	229	13	1	4	8	16	6	8	546
8:15 AM	9	209	18	8	197	15	4	5	10	9	6	3	493
8:30 AM	11	182	14	3	185	5	3	2	16	7	2	2	432
8:45 AM	11	196	20	3	181	7	1	4	8	10	3	2	446
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 91	NT 1771	NR 124	SL 43	ST 1563	SR 94	EL 16	ET 20	ER 61	WL 64	WT 39	WR 25	TOTAL 3911
PEAK (4-5) VOLUMES =	45	964	53	22	771	54	7	5	19	22	22	10	1994
PEAK HR. FACTOR:		0.820			0.834			0.697			0.725		0.842

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/06/2007 LOCATION: City of Bakersfield

E-W STREET: 19th St DAY: THURSDAY PROJECT# 07-8240-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	0	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	8	233	15	9	234	2	9	5	28	13	5	4	565
3:15 PM	6	223	25	6	228	8	7	8	15	6	6	11	549
3:30 PM	12	258	13	6	237	8	5	11	18	21	3	8	600
3:45 PM	9	268	20	5	291	6	8	7	17	17	5	5	658
4:00 PM	6	263	25	12	283	4	8	10	23	20	3	8	665
4:15 PM	14	249	17	8	260	4	5	5	30	12	3	8	615
4:30 PM	10	285	12	6	281	3	11	8	40	21	2	6	685
4:45 PM	1	270	17	3	278	2	6	6	31	9	7	6	636
5:00 PM	7	313	17	3	313	3	21	14	36	18	4	10	759
5:15 PM	6	259	23	6	273	3	12	14	24	21	3	6	650
5:30 PM	5	257	17	1	267	1	12	12	30	13	2	3	620
5:45 PM	3	257	6	3	188	2	1	1	12	6	2	7	488
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 87	NT 3135	NR 207	SL 68	ST 3133	SR 46	EL 105	ET 101	ER 304	WL 177	WT 45	WR 82	TOTAL 7490
PEAK (7-8) VOLUMES =	31	1067	71	29	1102	13	30	29	124	62	15	28	2601
PEAK HR. FACTOR:		0.905			0.920			0.785			0.883		0.899

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/06/2007 LOCATION: City of Bakersfield

E-W STREET: 18th St DAY: THURSDAY PROJECT# 07-8240-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	1	0	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		189	12	1	120					4		2	328
7:15 AM		253	31	13	178					6		4	485
7:30 AM		222	19	11	220					10		4	486
7:45 AM		332	36	21	252					12		5	658
8:00 AM		294	25	13	228					12		4	576
8:15 AM		251	25	10	165					15		4	470
8:30 AM		223	17	9	226					11		11	497
8:45 AM		186	25	9	203					8		4	435
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 1950	NR 190	SL 87	ST 1592	SR 0	EL 0	ET 0	ER 0	WL 78	WT 0	WR 38	TOTAL 3935
PEAK (7-8) VOLUMES =	0	996	98	46	770	0	0	0	0	32	0	15	1957
PEAK HR. FACTOR:		0.823			0.857			0.000			0.838		0.838

CONTROL: Signal

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/06/2007 LOCATION: City of Bakersfield

E-W STREET: 18th St DAY: THURSDAY PROJECT# 07-8240-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	1	0	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		247	14	1	267					37		12	578
3:15 PM		282	16	10	288					26		8	630
3:30 PM		245	22	5	326					25		9	632
3:45 PM		255	22	6	297					32		15	627
4:00 PM		257	21	14	330					31		18	671
4:15 PM		275	17	5	243					32		8	580
4:30 PM		285	20	10	274					51		15	655
4:45 PM		275	19	7	286					53		12	652
5:00 PM		290	22	5	301					58		20	696
5:15 PM		304	20	9	290					39		25	687
5:30 PM		292	31	7	305					20		30	685
5:45 PM		250	33	11	305					29		25	653
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	0	3257	257	90	3512	0	0	0	0	433	0	197	7746
PEAK (4-5) VOLUMES =	0	1092	77	36	1133	0	0	0	0	167	0	53	2558
PEAK HR. FACTOR:		0.958			0.975			0.000			0.788		0.977

CONTROL: Signal

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St | DATE: 12/11/2007 | LOCATION: City of Bakersfield

E-W STREET: Truxtun Ave | DAY: TUESDAY | PROJECT# 07-8240-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	2	2	1	2	2	1	2	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	40	69	48	8	45	71	90	154	37	21	56	8	647
7:15 AM	86	119	93	20	43	75	149	264	43	23	73	3	991
7:30 AM	85	154	138	27	87	123	146	260	42	36	70	16	1184
7:45 AM	147	185	155	28	89	139	202	312	39	50	99	7	1452
8:00 AM	121	168	157	28	97	110	49	209	31	39	88	19	1116
8:15 AM	111	138	104	16	96	125	138	210	51	53	79	7	1128
8:30 AM	86	111	92	14	69	97	111	159	38	33	80	5	895
8:45 AM	83	97	88	18	111	127	116	161	37	52	88	18	996
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 759	NT 1041	NR 875	SL 159	ST 637	SR 867	EL 1001	ET 1729	ER 318	WL 307	WT 633	WR 83	TOTAL 8409
PEAK (7-8) VOLUMES =	358	527	434	83	264	408	587	990	161	130	298	34	4274
PEAK HR. FACTOR:		0.854			0.942			0.764			0.902		0.840

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Oak St DATE: 12/11/2007 LOCATION: City of Bakersfield

E-W STREET: Truxtun Ave DAY: TUESDAY PROJECT# 07-8240-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	1	2	2	1	2	2	1	2	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	103	143	59	23	157	103	127	141	134	125	186	23	1324
3:15 PM	98	155	84	16	159	120	139	120	60	89	167	21	1228
3:30 PM	74	182	83	19	112	122	122	157	143	77	180	32	1303
3:45 PM	91	157	61	29	185	180	129	143	98	135	217	34	1459
4:00 PM	90	146	68	21	145	135	123	142	87	160	189	19	1325
4:15 PM	108	128	85	20	164	151	123	115	86	114	228	11	1333
4:30 PM	78	141	76	8	209	166	133	149	80	94	244	18	1396
4:45 PM	57	159	78	13	154	162	136	165	84	115	265	25	1413
5:00 PM	79	140	80	17	195	159	139	166	118	85	273	14	1465
5:15 PM	79	143	75	15	216	196	131	194	79	80	273	18	1499
5:30 PM	70	185	76	8	135	142	126	143	76	88	156	15	1220
5:45 PM	49	122	59	10	159	105	89	125	58	76	124	11	987
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 976	NT 1801	NR 884	SL 199	ST 1990	SR 1741	EL 1517	ET 1760	ER 1103	WL 1238	WT 2502	WR 241	TOTAL 15952
PEAK (4-5) VOLUMES =	333	574	307	62	672	614	515	571	337	483	926	73	5467
PEAK HR. FACTOR:		0.991			0.884			0.930			0.928		0.963

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: G St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	2.5	.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	1			1	2				4	336	1	346
7:15 AM	0	2			3	3				3	425	3	439
7:30 AM	3	5			2	1				7	535	3	556
7:45 AM	6	6			4	2				7	619	3	647
8:00 AM	2	5			3	1				9	534	4	558
8:15 AM	3	0			5	3				5	480	8	504
8:30 AM	2	1			2	5				4	419	4	437
8:45 AM	2	7			3	8				2	415	5	442
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 19	NT 27	NR 0	SL 0	ST 23	SR 25	EL 0	ET 0	ER 0	WL 41	WT 3763	WR 31	TOTAL 3929
PEAK (7-8) VOLUMES =	10	14	0	0	10	8	0	0	0	21	1915	10	1988
PEAK HR. FACTOR:		0.625			0.656			0.000			0.880		0.875

CONTROL: 2-way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: G St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0	2.5	.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	5	7			5	13				4	508	5	547
3:15 PM	6	8			5	16				3	593	3	634
3:30 PM	4	5			5	9				4	563	6	596
3:45 PM	0	6			4	10				10	560	9	599
4:00 PM	2	2			3	7				12	454	9	489
4:15 PM	4	3			4	15				3	538	10	577
4:30 PM	2	6			5	12				3	524	9	561
4:45 PM	1	7			7	17				1	455	8	496
5:00 PM	2	3			3	27				2	583	3	623
5:15 PM	5	4			0	15				2	470	5	501
5:30 PM	2	6			5	17				3	524	2	559
5:45 PM	2	4			8	18				4	516	8	560
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	35	61	0	0	54	176	0	0	0	51	6288	77	6742
PEAK (4-5) VOLUMES =	9	18	0	0	19	51	0	0	0	19	1971	36	2123
PEAK HR. FACTOR:		0.732			0.798			0.000			0.947		0.937

CONTROL: 2-way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: G St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		1	0	7	5		5	399	5				422
7:15 AM		2	1	3	3		3	502	2				516
7:30 AM		4	4	9	4		4	467	6				498
7:45 AM		0	2	8	3		8	567	6				594
8:00 AM		6	1	8	6		3	492	7				523
8:15 AM		6	3	5	7		3	460	5				489
8:30 AM		1	3	8	1		5	412	9				439
8:45 AM		3	2	8	5		3	445	3				469
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	23	16	56	34	0	34	3744	43	0	0	0	3950
PEAK (7-8) VOLUMES =	0	7	7	27	15	0	20	1935	19	0	0	0	2030
PEAK HR. FACTOR:		0.625			0.786			0.889			0.000		0.897

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: G St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		4	6	8	5		1	529	5		1		559
3:15 PM		4	5	10	5		0	539	6		0		569
3:30 PM		1	5	3	4		5	465	4		0		487
3:45 PM		3	5	4	2		6	576	2		0		598
4:00 PM		3	14	4	1		3	567	4		0		596
4:15 PM		1	8	11	7		1	531	2		0		561
4:30 PM		2	3	10	2		1	528	8		0		554
4:45 PM		3	8	10	3		2	548	7		0		581
5:00 PM		1	13	8	3		5	558	2		0		590
5:15 PM		1	1	9	4		5	554	6		0		580
5:30 PM		3	3	5	1		2	566	4		0		584
5:45 PM		3	2	5	0		2	494	6		0		512
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 29	NR 73	SL 87	ST 37	SR 0	EL 33	ET 6455	ER 56	WL 0	WT 1	WR 0	TOTAL 6771
PEAK (4-5) VOLUMES =	0	9	33	35	13	0	7	2174	21	0	0	0	2292
PEAK HR. FACTOR:		0.589			0.827			0.987			0.000		0.989

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: H St | DATE: 02/21/2008 | LOCATION: City of Bakersfield

E-W STREET: 24th St | DAY: THURSDAY | PROJECT# 08-8048-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	1	0	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	9	39	0		13	4				23	326	4	418
7:15 AM	16	34	0		16	4				27	424	8	529
7:30 AM	18	48	0		22	18				38	509	15	668
7:45 AM	20	75	0		24	5				30	598	16	768
8:00 AM	19	60	0		29	13				21	495	13	650
8:15 AM	20	62	1		20	11				19	432	15	580
8:30 AM	17	52	0		28	15				29	379	14	534
8:45 AM	12	48	1		24	6				34	376	11	512
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 131	NT 418	NR 2	SL 0	ST 176	SR 76	EL 0	ET 0	ER 0	WL 221	WT 3539	WR 96	TOTAL 4659
PEAK (7-8) VOLUMES =	63	196	0	0	75	31	0	0	0	118	1857	43	2383
PEAK HR. FACTOR:		0.850			0.845			0.000			0.854		0.868

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: H St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	1	0	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	25	45			38	21				57	464	8	658
3:15 PM	35	55			45	30				62	500	9	736
3:30 PM	42	51			64	37				55	483	11	743
3:45 PM	41	47			43	22				50	530	13	746
4:00 PM	39	43			48	20				52	435	8	645
4:15 PM	35	48			56	19				58	481	10	707
4:30 PM	29	54			66	17				65	477	12	720
4:45 PM	34	49			49	21				46	425	13	637
5:00 PM	36	60			74	28				58	497	8	761
5:15 PM	25	49			48	21				43	462	11	659
5:30 PM	35	34			30	23				36	458	10	626
5:45 PM	38	34			35	17				27	446	5	602
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	414	569	0	0	596	276	0	0	0	609	5658	118	8240
PEAK (4-5) VOLUMES =	137	194	0	0	219	77	0	0	0	221	1818	43	2709
PEAK HR. FACTOR:		0.917			0.743			0.000			0.945		0.966

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: H St DATE: 02/26/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: TUESDAY PROJECT# 08-8048-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		33	24	1	38		16	353	5				470
7:15 AM		36	32	1	41		16	496	10				632
7:30 AM		45	46	3	60		19	532	2				707
7:45 AM		76	46	4	49		20	512	4				711
8:00 AM		61	43	6	46		21	432	11				620
8:15 AM		65	25	4	31		20	448	9				602
8:30 AM		51	23	5	54		19	387	8				547
8:45 AM		49	24	6	55		16	420	9				579
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	416	263	30	374	0	147	3580	58	0	0	0	4868
PEAK (7-8) VOLUMES =	0	190	148	9	188	0	71	1893	21	0	0	0	2520
PEAK HR. FACTOR:		0.789			0.833			0.938			0.000		0.939

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: H St | DATE: 02/26/2008 | LOCATION: City of Bakersfield

E-W STREET: 23rd St | DAY: TUESDAY | PROJECT# 08-8048-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		62	38	16	76		24	549	18				783
3:15 PM		82	56	15	112		16	493	9				783
3:30 PM		68	57	12	119		17	500	7				780
3:45 PM		63	46	15	81		18	538	19				780
4:00 PM		68	56	15	105		17	502	7				770
4:15 PM		54	44	12	96		15	525	10				756
4:30 PM		54	53	13	92		17	558	10				797
4:45 PM		73	56	11	109		21	545	9				824
5:00 PM		87	69	15	113		19	512	12				827
5:15 PM		68	59	14	109		8	514	14				786
5:30 PM		59	62	10	60		3	579	9				782
5:45 PM		63	36	11	49		9	496	8				672
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 801	NR 632	SL 159	ST 1121	SR 0	EL 184	ET 6311	ER 132	WL 0	WT 0	WR 0	TOTAL 9340
PEAK (4-5) VOLUMES =	0	249	209	51	402	0	70	2130	36	0	0	0	3147
PEAK HR. FACTOR:		0.832			0.930			0.957			0.000		0.978

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Eye St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	2	0		0	0				3	327	4	336
7:15 AM	0	1	0		1	2				6	413	2	425
7:30 AM	0	1	0		0	4				10	501	3	519
7:45 AM	1	1	0		0	3				5	622	3	635
8:00 AM	0	8	0		0	3				7	501	6	525
8:15 AM	0	3	1		1	4				11	470	3	493
8:30 AM	2	1	0		1	2				4	405	4	419
8:45 AM	3	1	1		0	3				10	433	3	454
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 6	NT 18	NR 2	SL 0	ST 3	SR 21	EL 0	ET 0	ER 0	WL 56	WT 3672	WR 28	TOTAL 3806
PEAK (7-8) VOLUMES =	1	5	0	0	1	9	0	0	0	24	1863	12	1915
PEAK HR. FACTOR:		0.469			0.750			0.000			0.850		0.855

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Eye St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	1	2			3	12				9	477	2	506
3:15 PM	5	1			1	17				13	531	3	571
3:30 PM	3	1			2	21				11	475	5	518
3:45 PM	1	0			1	29				7	488	4	530
4:00 PM	2	3			4	21				10	438	2	480
4:15 PM	4	2			2	28				16	444	7	503
4:30 PM	1	3			5	24				9	471	8	521
4:45 PM	4	1			1	16				13	450	4	489
5:00 PM	2	3			1	20				13	489	5	533
5:15 PM	2	2			3	14				8	474	5	508
5:30 PM	1	2			2	17				10	476	6	514
5:45 PM	1	1			1	12				9	429	4	457
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	27	21	0	0	26	231	0	0	0	128	5642	55	6130
PEAK (4-5) VOLUMES =	11	9	0	0	12	89	0	0	0	48	1803	21	1993
PEAK HR. FACTOR:		0.583			0.717			0.000			0.926		0.930

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Eye St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		0	1	1	2		1	333	4				342
7:15 AM		0	3	1	8		4	478	7				501
7:30 AM		0	4	0	9		1	593	5				612
7:45 AM		0	1	0	5		4	626	8				644
8:00 AM		2	1	1	4		5	495	13				521
8:15 AM		2	5	1	9		2	436	8				463
8:30 AM		2	2	2	4		1	369	7				387
8:45 AM		2	5	2	3		6	421	4				443
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 8	NR 22	SL 8	ST 44	SR 0	EL 24	ET 3751	ER 56	WL 0	WT 0	WR 0	TOTAL 3913
PEAK (7-8) VOLUMES =	0	0	9	2	24	0	10	2030	24	0	0	0	2099
PEAK HR. FACTOR:		0.688			0.778			0.877			0.000		0.884

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Eye St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		1	8	3	6		0	589	4				611
3:15 PM		2	6	4	7		2	543	5				569
3:30 PM		1	10	5	8		2	559	7				592
3:45 PM		0	6	2	4		0	596	4				612
4:00 PM		3	10	5	9		3	582	8				620
4:15 PM		4	13	8	12		1	575	8				621
4:30 PM		2	10	3	5		3	607	4				634
4:45 PM		2	9	2	7		2	578	2				602
5:00 PM		2	12	3	9		2	593	9				630
5:15 PM		6	18	3	4		1	609	6				647
5:30 PM		2	15	4	5		1	635	7				669
5:45 PM		1	12	2	5		1	532	5				558
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	26	129	44	81	0	18	6998	69	0	0	0	7365
PEAK (4-5) VOLUMES =	0	11	42	18	33	0	9	2342	22	0	0	0	2477
PEAK HR. FACTOR:		0.688			0.771			0.951			0.000		0.952

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chester Ave DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	10	72			71	9				20	282	15	479
7:15 AM	15	73			97	19				33	443	14	694
7:30 AM	17	91			114	14				40	567	10	853
7:45 AM	14	124			128	17				43	509	12	847
8:00 AM	17	136			120	20				35	515	8	851
8:15 AM	26	173			111	24				46	417	20	817
8:30 AM	21	122			70	18				25	398	13	667
8:45 AM	18	95			82	13				30	336	15	589
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 138	NT 886	NR 0	SL 0	ST 793	SR 134	EL 0	ET 0	ER 0	WL 272	WT 3467	WR 107	TOTAL 5797
PEAK (7-8) VOLUMES =	56	360	0	0	410	59	0	0	0	136	1801	51	2873
PEAK HR. FACTOR:		0.751			0.945			0.000			0.900		0.987

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chester Ave DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	32	140			164	53				34	356	7	786
3:15 PM	31	119			170	46				39	433	11	849
3:30 PM	35	114			198	55				47	378	14	841
3:45 PM	28	125			184	49				41	395	12	834
4:00 PM	32	142			141	47				51	346	10	769
4:15 PM	37	116			139	58				32	342	19	743
4:30 PM	31	101			149	42				37	391	13	764
4:45 PM	33	111			160	37				28	377	14	760
5:00 PM	36	123			181	43				31	400	9	823
5:15 PM	29	118			144	33				23	390	18	755
5:30 PM	25	100			117	28				17	412	15	714
5:45 PM	21	133			102	25				20	374	13	688
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 370	NT 1442	NR 0	SL 0	ST 1849	SR 516	EL 0	ET 0	ER 0	WL 400	WT 4594	WR 155	TOTAL 9326
PEAK (4-5) VOLUMES =	133	470	0	0	589	184	0	0	0	148	1456	56	3036
PEAK HR. FACTOR:		0.907			0.908			0.000			0.915		0.975

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chester Ave DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	1	2	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		64	39	28	69		20	354	9				583
7:15 AM		71	46	31	96		27	431	12				714
7:30 AM		79	54	37	139		38	527	7				881
7:45 AM		89	57	31	153		70	485	20				905
8:00 AM		79	41	29	130		86	408	15				788
8:15 AM		90	35	21	126		77	367	11				727
8:30 AM		99	23	24	83		49	334	14				626
8:45 AM		65	23	20	107		33	388	10				646
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	0	636	318	221	903	0	400	3294	98	0	0	0	5870
PEAK (7-8) VOLUMES =	0	303	196	127	457	0	155	1797	48	0	0	0	3083
PEAK HR. FACTOR:		0.897			0.905			0.918			0.000		0.912

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chester Ave DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	1	1	2	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		129	19	39	166		19	546	7				925
3:15 PM		109	23	42	178		23	550	9				934
3:30 PM		117	26	63	203		26	560	10				1005
3:45 PM		102	30	43	206		30	551	9				971
4:00 PM		110	35	35	183		35	525	14				937
4:15 PM		83	48	31	159		48	511	17				897
4:30 PM		64	60	27	147		60	506	20				884
4:45 PM		85	32	38	127		32	513	12				839
5:00 PM		99	25	46	152		25	544	14				905
5:15 PM		106	20	41	135		20	562	12				896
5:30 PM		92	18	35	107		18	545	9				824
5:45 PM		95	40	35	72		40	493	17				792
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	1191	376	475	1835	0	376	6406	150	0	0	0	10809
PEAK (4-5) VOLUMES =	0	342	175	131	616	0	175	2055	63	0	0	0	3557
PEAK HR. FACTOR:		0.952			0.896			0.982			0.000		0.957

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: K St DATE: 02/27/2008 LOCATION: City of Bakersfield

E-W STREET: 24h St DAY: WEDNESDAY PROJECT# 08-8048-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	0			0	7				6	360	16	390
7:15 AM	4	1			0	6				7	483	21	522
7:30 AM	5	3			1	5				10	620	23	667
7:45 AM	4	1			1	4				13	572	27	622
8:00 AM	6	2			0	3				17	521	16	565
8:15 AM	7	2			1	6				12	424	20	472
8:30 AM	3	2			2	4				11	399	18	439
8:45 AM	5	2			1	5				10	376	22	421
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	35	13	0	0	6	40	0	0	0	86	3755	163	4098
PEAK (7-8) VOLUMES =	14	5	0	0	2	22	0	0	0	36	2035	87	2201
PEAK HR. FACTOR:		0.813			0.833			0.000			0.892		0.891

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: K St DATE: 02/27/2008 LOCATION: City of Bakersfield

E-W STREET: 24h St DAY: WEDNESDAY PROJECT# 08-8048-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	9	8			5	5				8	403	9	447
3:15 PM	7	9			6	8				6	436	10	482
3:30 PM	12	11			7	7				8	411	11	467
3:45 PM	10	14			8	11				12	420	8	483
4:00 PM	8	15			5	4				7	354	8	401
4:15 PM	14	10			5	8				10	400	2	449
4:30 PM	11	9			6	6				11	458	6	507
4:45 PM	9	7			8	6				9	439	4	482
5:00 PM	4	3			2	6				8	435	6	464
5:15 PM	10	7			6	5				12	415	5	460
5:30 PM	7	8			9	7				7	446	7	491
5:45 PM	8	5			5	4				10	421	4	457
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	109	106	0	0	72	77	0	0	0	108	5038	80	5590
PEAK (4-5) VOLUMES =	42	41	0	0	24	24	0	0	0	37	1651	20	1839
PEAK HR. FACTOR:		0.750			0.804			0.000			0.952		0.943

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: K St DATE: 02/28/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		1	2	8	3		11	485	11				521
7:15 AM		2	4	3	1		15	602	11				638
7:30 AM		2	1	6	2		10	612	13				646
7:45 AM		0	1	9	2		15	441	10				478
8:00 AM		2	0	7	3		14	388	4				418
8:15 AM		1	1	6	4		15	370	6				403
8:30 AM		2	1	9	12		12	429	11				476
8:45 AM		1	0	1	1		4	399	2				408
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	11	10	49	28	0	96	3726	68	0	0	0	3988
PEAK (7-8) VOLUMES =	0	5	8	26	8	0	51	2140	45	0	0	0	2283
PEAK HR. FACTOR:		0.542			0.773			0.880			0.000		0.884

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: K St DATE: 02/28/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: THURSDAY PROJECT# 08-8048-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		2	1	11	7		17	579	3				620
3:15 PM		2	1	16	7		14	575	4				619
3:30 PM		3	2	12	9		14	539	6				585
3:45 PM		2	1	15	10		16	614	3				661
4:00 PM		2	3	10	10		10	581	5				621
4:15 PM		2	4	15	5		18	566	4				614
4:30 PM		2	3	12	3		16	560	7				603
4:45 PM		3	3	7	9		10	575	6				613
5:00 PM		2	3	11	5		12	579	5				617
5:15 PM		1	2	12	7		13	610	6				651
5:30 PM		3	3	10	7		12	621	7				663
5:45 PM		3	4	16	6		11	567	7				614
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 27	NR 30	SL 147	ST 85	SR 0	EL 163	ET 6966	ER 63	WL 0	WT 0	WR 0	TOTAL 7481
PEAK (4-5) VOLUMES =	0	9	13	44	27	0	54	2282	22	0	0	0	2451
PEAK HR. FACTOR:		0.750			0.841			0.957			0.000		0.960

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: L St DATE: 02/21/2008 LOCATION: City of Bakersfield

E-W STREET: 24th St DAY: THURSDAY PROJECT# 08-8048-011

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	4	3			7	2				29	448	2	495
7:15 AM	8	5			11	1				35	527	3	590
7:30 AM	7	7			9	3				47	692	1	766
7:45 AM	5	8			13	4				66	634	4	734
8:00 AM	11	8			10	2				61	572	5	669
8:15 AM	9	9			12	3				76	469	1	579
8:30 AM	11	11			10	1				54	438	1	526
8:45 AM	13	9			9	2				42	417	2	494
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	68	60	0	0	81	18	0	0	0	410	4197	19	4853
PEAK (7-8) VOLUMES =	24	23	0	0	40	10	0	0	0	177	2301	10	2585
PEAK HR. FACTOR:		0.776			0.779			0.000			0.894		0.900

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: L St | DATE: 02/21/2008 | LOCATION: City of Bakersfield

E-W STREET: 24th St | DAY: THURSDAY | PROJECT# 08-8048-011

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	0	0	0.5	2	0.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	13	10			7	3				35	393	5	466
3:15 PM	10	14			11	4				40	416	5	500
3:30 PM	16	16			8	4				41	383	7	475
3:45 PM	8	17			12	2				53	433	6	531
4:00 PM	14	21			9	5				58	366	4	477
4:15 PM	11	16			12	2				42	389	6	478
4:30 PM	17	16			9	3				51	447	3	546
4:45 PM	13	13			5	3				35	436	5	510
5:00 PM	16	18			7	4				30	417	4	496
5:15 PM	13	10			6	6				36	448	4	523
5:30 PM	8	14			8	8				46	479	3	566
5:45 PM	10	7			11	2				31	418	3	482
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	149	172	0	0	105	46	0	0	0	498	5025	55	6050
PEAK (4-5) VOLUMES =	55	66	0	0	35	13	0	0	0	186	1638	18	2011
PEAK HR. FACTOR:		0.772			0.734			0.000			0.920		0.925

CONTROL: 2-Way Stop Sign (NS)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: L St DATE: 02/27/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: WEDNESDAY PROJECT# 08-8048-012

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	2	0	.5	2	.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		6	9	14	47		16	279	21				392
7:15 AM		6	19	12	93		21	476	24				651
7:30 AM		13	17	15	111		21	582	28				787
7:45 AM		15	21	19	151		19	553	53				831
8:00 AM		15	24	12	112		29	425	30				647
8:15 AM		25	20	13	88		20	389	25				580
8:30 AM		20	8	11	57		14	355	14				479
8:45 AM		14	17	14	46		28	381	17				517
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 114	NR 135	SL 110	ST 705	SR 0	EL 168	ET 3440	ER 212	WL 0	WT 0	WR 0	TOTAL 4884
PEAK (7-8) VOLUMES =	0	40	66	60	402	0	77	1890	126	0	0	0	2661
PEAK HR. FACTOR:		0.833			0.772			0.896			0.000		0.877

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: L St DATE: 02/27/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: WEDNESDAY PROJECT# 08-8048-012

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	2	0	.5	2	.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		19	31	16	26		11	485	15				603
3:15 PM		23	36	16	25		18	538	15				671
3:30 PM		23	33	16	26		18	488	9				613
3:45 PM		24	34	17	34		11	511	21				652
4:00 PM		31	28	18	24		19	556	10				686
4:15 PM		31	45	17	22		20	565	8				708
4:30 PM		33	35	21	27		21	535	10				682
4:45 PM		28	56	16	28		17	593	14				752
5:00 PM		38	90	17	25		18	542	19				749
5:15 PM		34	70	14	26		29	599	11				783
5:30 PM		28	60	18	20		22	624	12				784
5:45 PM		23	55	29	23		19	576	7				732
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 335	NR 573	SL 215	ST 306	SR 0	EL 223	ET 6612	ER 151	WL 0	WT 0	WR 0	TOTAL 8415
PEAK (4-5) VOLUMES =	0	123	164	72	101	0	77	2249	42	0	0	0	2828
PEAK HR. FACTOR:		0.789			0.932			0.950			0.000		0.978

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: M St | DATE: 2/27/2008 | LOCATION: City of Bakersfield

E-W STREET: 24th St | DAY: WEDNESDAY | PROJECT# 08-8048-013

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	1	0	0	0	0	0	3	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	5	20			9	6				1	424	10	475
7:15 AM	9	26			24	10				0	559	10	638
7:30 AM	8	30			23	11				3	764	9	848
7:45 AM	10	52			52	27				2	703	24	870
8:00 AM	21	31			38	9				0	651	13	763
8:15 AM	15	34			18	19				4	553	6	649
8:30 AM	15	29			20	20				1	473	3	561
8:45 AM	10	17			18	16				0	475	7	543
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	93	239	0	0	202	118	0	0	0	11	4602	82	5347
PEAK (7-8) VOLUMES =	32	128	0	0	108	54	0	0	0	6	2450	53	2831
PEAK HR. FACTOR:		0.810			0.623			0.000			0.880		0.899

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: M St | DATE: 2/27/2008 | LOCATION: City of Bakersfield

E-W STREET: 24th St | DAY: WEDNESDAY | PROJECT# 08-8048-013

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	1	0	0	0	0	0	3	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM	20	31			22	22				1	430	8	534
3:15 PM	15	23			16	23				0	524	1	602
3:30 PM	19	35			20	26				2	440	4	546
3:45 PM	15	24			19	14				0	420	4	496
4:00 PM	19	31			23	19				1	463	13	569
4:15 PM	20	34			19	10				1	410	3	497
4:30 PM	24	24			22	28				3	441	9	551
4:45 PM	16	41			22	19				1	404	6	509
5:00 PM	15	76			54	63				0	417	3	628
5:15 PM	16	30			23	20				2	407	2	500
5:30 PM	14	31			19	23				1	433	2	523
5:45 PM	10	21			11	10				0	377	8	437
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	203	401	0	0	270	277	0	0	0	12	5166	63	6392
PEAK (4-5) VOLUMES =	79	130	0	0	86	76	0	0	0	6	1718	31	2126
PEAK HR. FACTOR:		0.838			0.870			0.000			0.891		0.919

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: M St DATE: 2/27/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: WEDNESDAY PROJECT# 08-8048-014

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	1	0	0.5	2	0.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		8	5	4	13		13	337	6				386
7:15 AM		8	2	7	17		20	505	10				569
7:30 AM		12	16	9	27		16	634	15				729
7:45 AM		18	6	8	42		31	555	18				678
8:00 AM		27	11	9	27		20	396	12				502
8:15 AM		30	13	7	25		20	354	18				467
8:30 AM		20	8	9	13		13	345	9				417
8:45 AM		20	5	7	18		16	404	8				478
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	0	143	66	60	182	0	149	3530	96	0	0	0	4226
PEAK (7-8) VOLUMES =	0	46	29	28	99	0	80	2031	49	0	0	0	2362
PEAK HR. FACTOR:		0.658			0.730			0.839			0.000		0.850

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: M St DATE: 2/27/2008 LOCATION: City of Bakersfield

E-W STREET: 23rd St DAY: WEDNESDAY PROJECT# 08-8048-014

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	1	0	0.5	2	0.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM		34	15	15	15		14	506	14				613
3:15 PM		20	12	9	14		10	516	10				591
3:30 PM		25	21	10	13		15	559	16				659
3:45 PM		17	13	8	22		10	557	16				643
4:00 PM		38	32	16	18		13	597	11				725
4:15 PM		33	31	11	22		17	594	7				715
4:30 PM		23	43	7	28		23	551	5				680
4:45 PM		32	28	9	12		18	623	11				733
5:00 PM		62	69	13	35		16	651	8				854
5:15 PM		28	72	16	17		18	707	10				868
5:30 PM		28	63	10	19		9	659	7				795
5:45 PM		22	26	8	12		6	564	5				643
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 362	NR 425	SL 132	ST 227	SR 0	EL 169	ET 7084	ER 120	WL 0	WT 0	WR 0	TOTAL 8519
PEAK (4-5) VOLUMES =	0	126	134	43	80	0	71	2365	34	0	0	0	2853
PEAK HR. FACTOR:		0.729			0.682			0.931			0.000		0.936

CONTROL: Signalized

APPENDIX B
Existing Conditions Field Observation Data

RBF CONSULTING
800-479-3808 - www.rbf.com

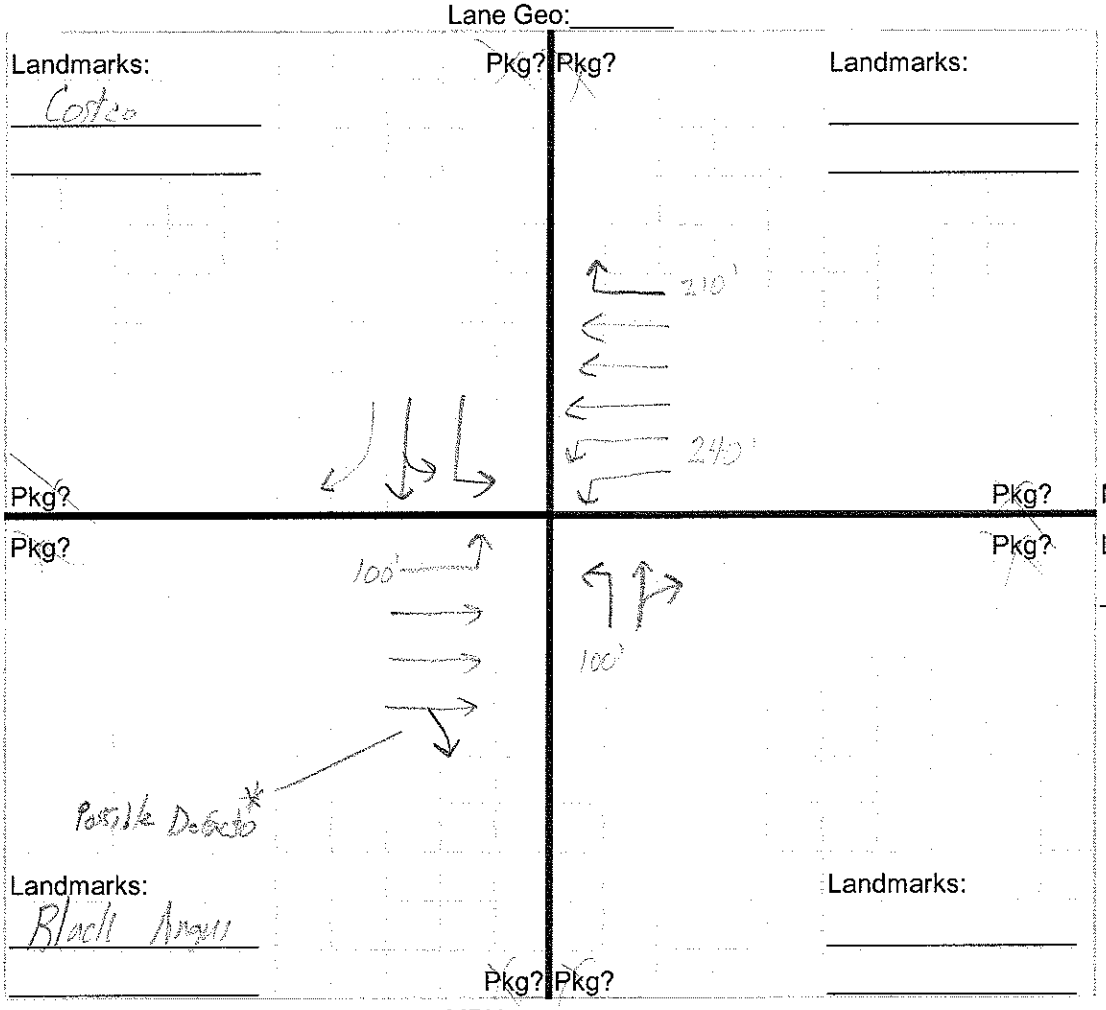
Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

2

P ____

N/S Street: Camino Del Rio Ct

E/W Street: SR-58 - Rosedale



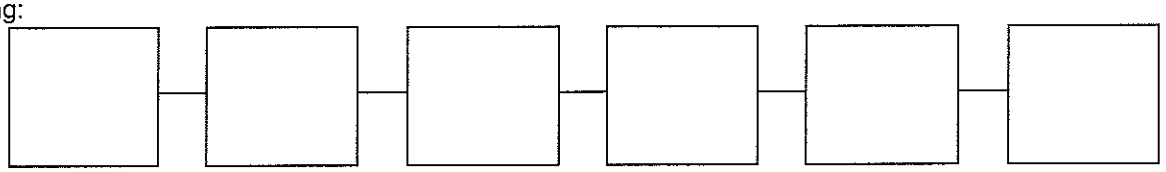
NOTES: ____

LEFT TURNS:

N/S: Protected (Split) Lead-Lag Permitted

E/W: (Protected) Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

3

P ____

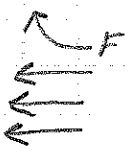
N/S Street: SR-99 SB Ramps

E/W Street: SR-58 - Rosedale

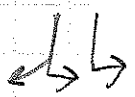
MPH: ____
Lane Geo: ____

Landmarks: Carl's Jr
Pkg? Pkg?

Landmarks:

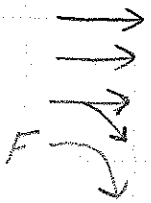


MPH: 40
Pkg?



Pkg?
MPH: ____

Lane Geo: ____
Pkg?



Pkg?
Lane Geo: ____

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: ____

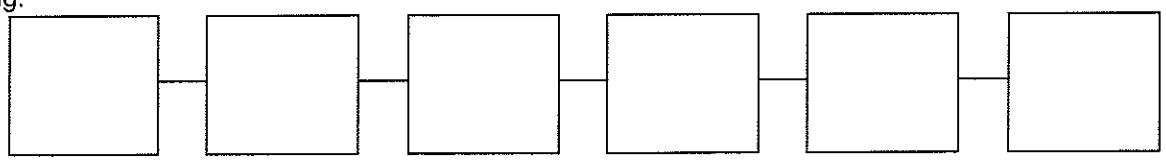
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

6

P ____

N/S Street: SR-99 NB Ramps

E/W Street: 24th - Rosedale

MPH: 40
Lane Geo: ____

Landmarks: Denny's

Pkg? Pkg?

Landmarks:

220' Dir Lane only

OV

OV ~490'

MPH: ____ Pkg? Pkg? MPH: ____

Lane Geo: Pkg? Pkg? Lane Geo:

165'

F

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: ____

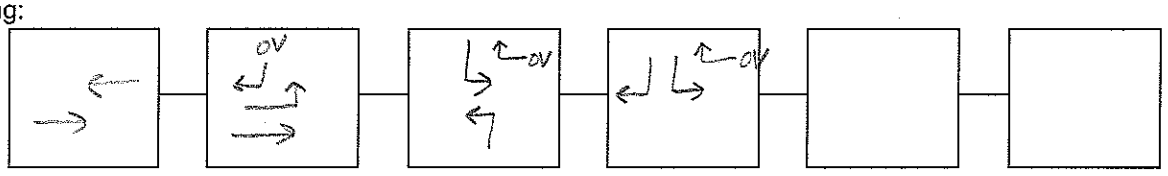
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

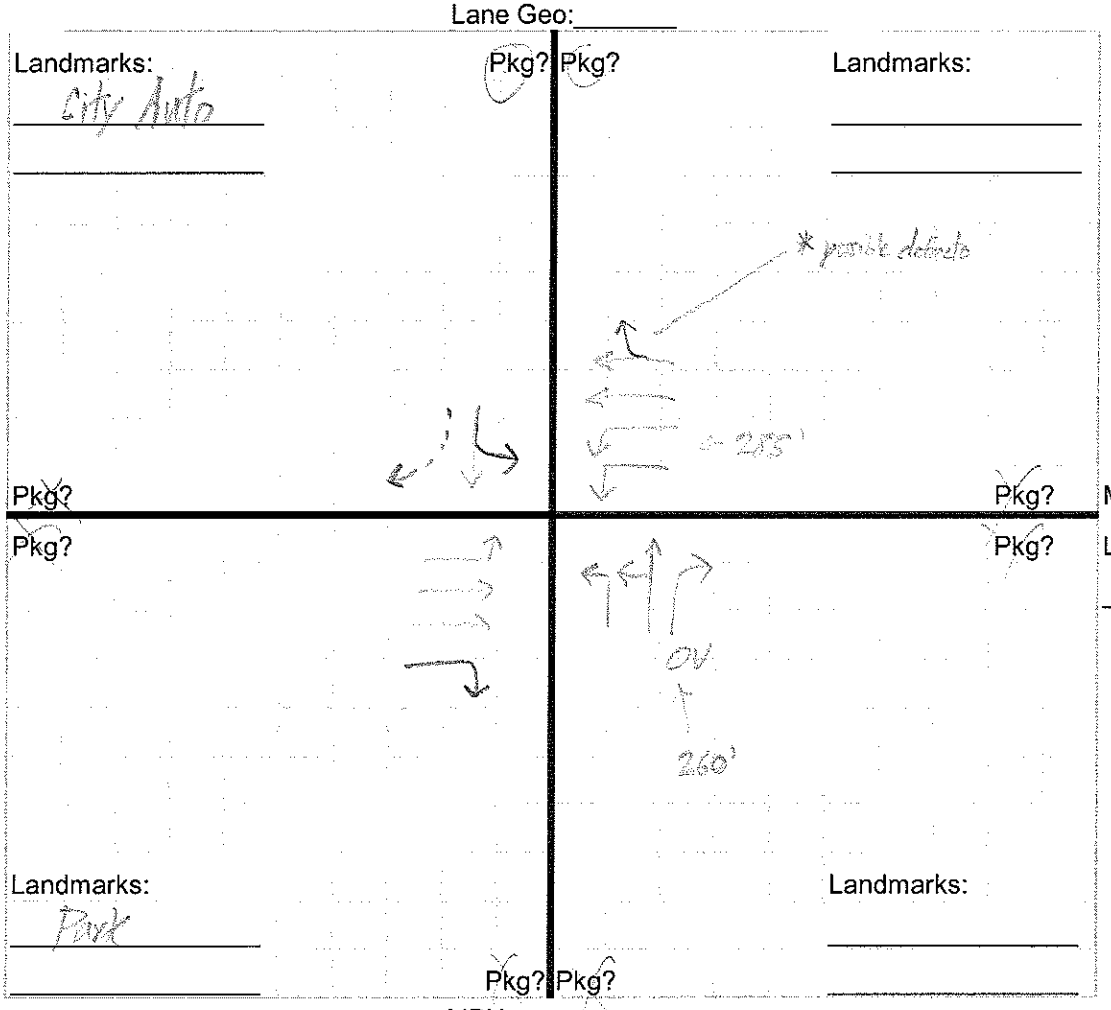
Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

8

P ____

N/S Street: Oak St

E/W Street: 24th St



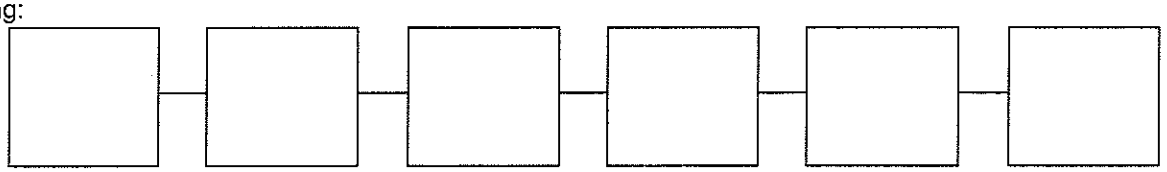
NOTES: ____

LEFT TURNS:

N/S: Protected (Split) Lead-Lag Permitted

E/W: (Protected) Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

13

P ____

N/S Street: Olive St

E/W Street: 24th St

One-way stop

MPH: ____
Lane Geo: 2U

Landmarks:

Pkg? Pkg?

Landmarks:

MPH: 40
Lane Geo:

Pkg?
Pkg?

Pkg?
Pkg?

MPH: 40
Lane Geo:

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: ____

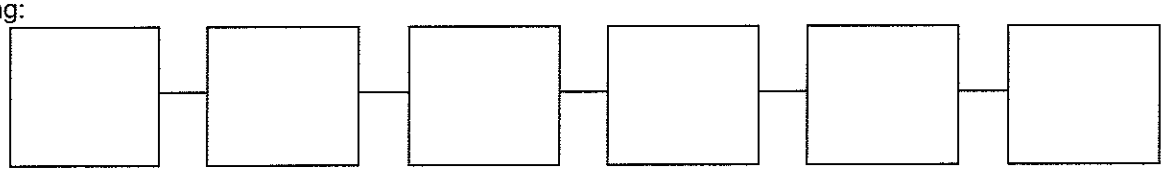
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

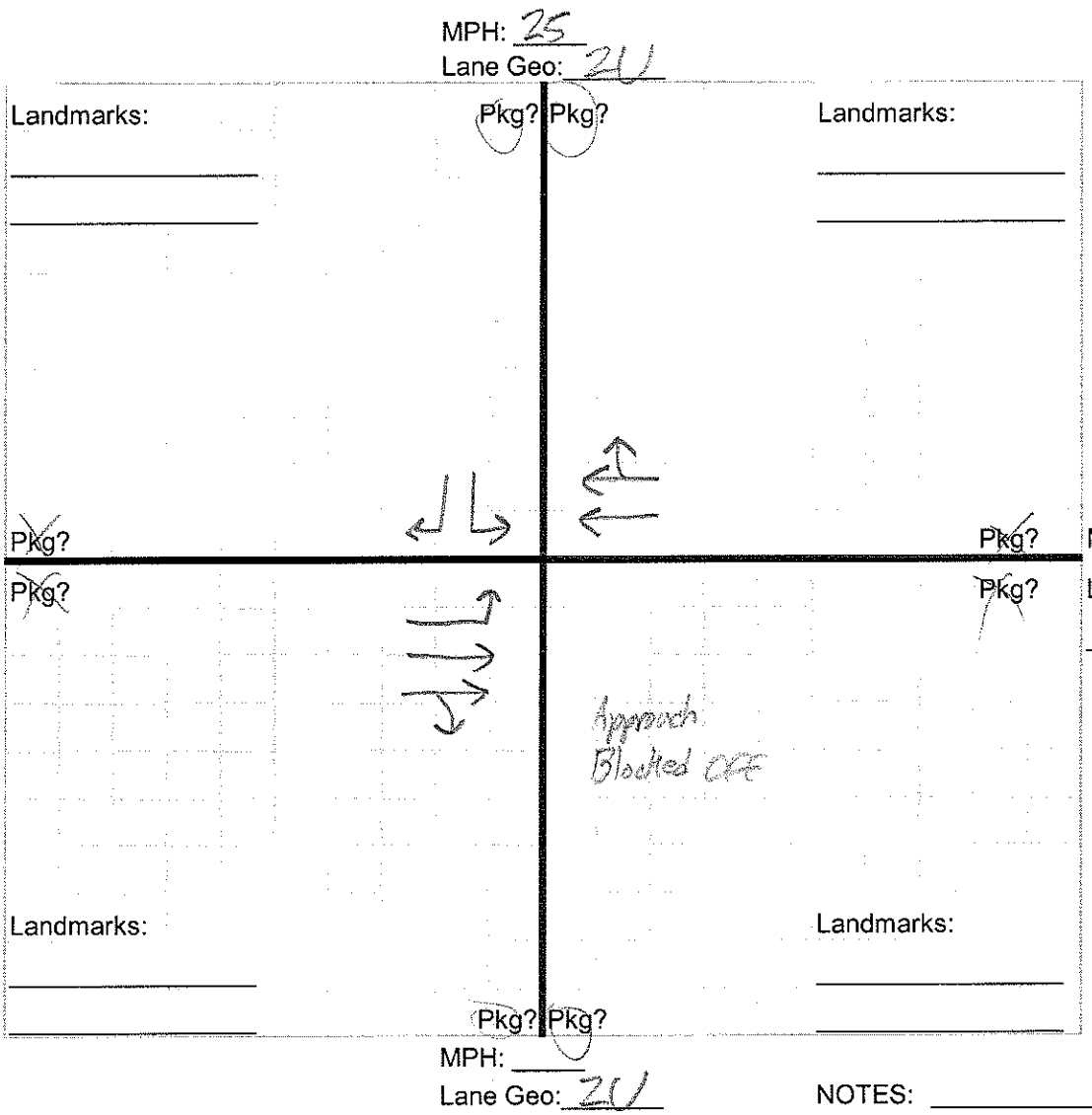
Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

14

P ____

N/S Street: Elm St

E/W Street: 24th St



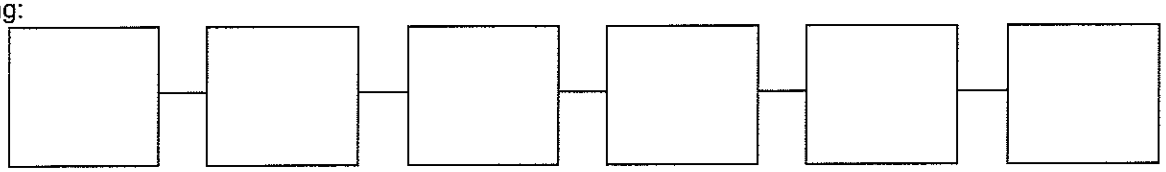
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

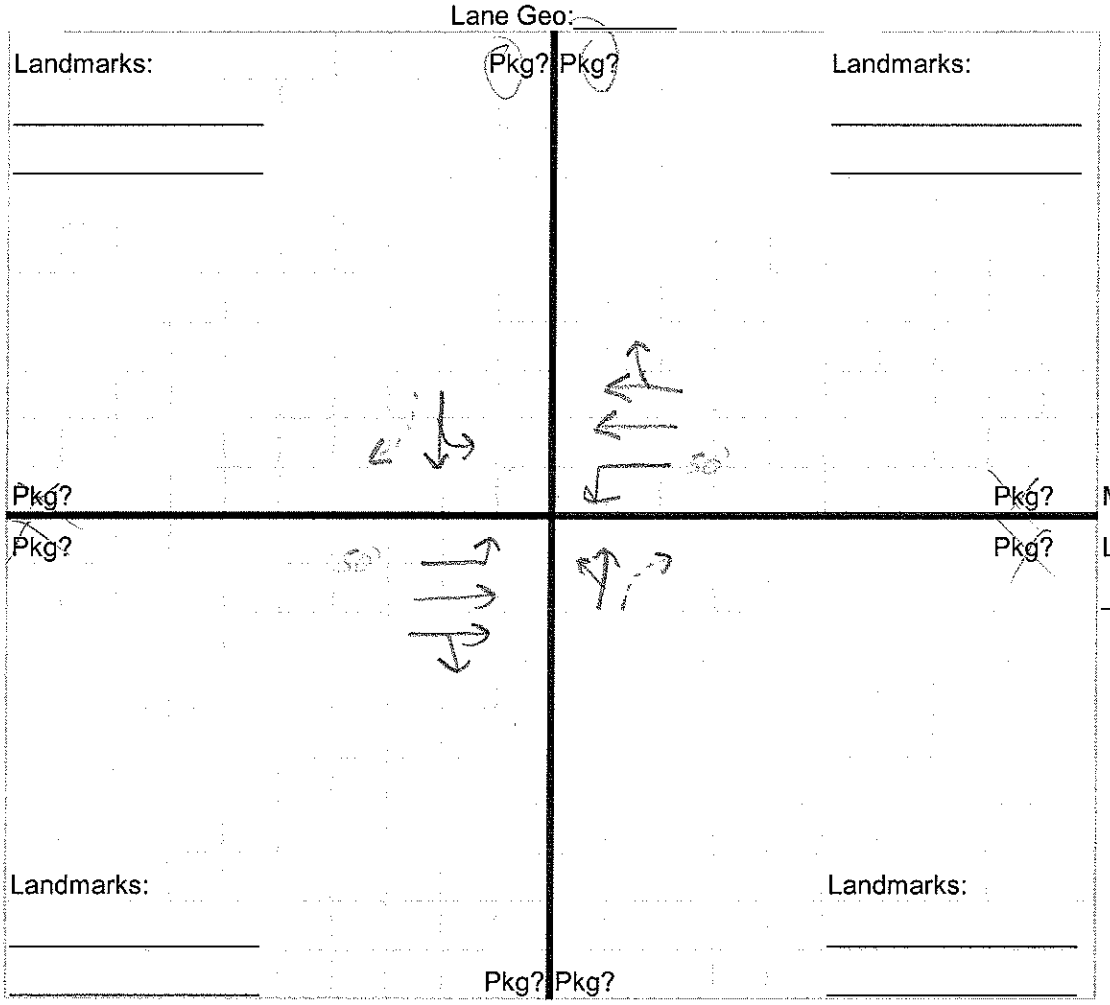
Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

16

P ____

N/S Street: Beech St

E/W Street: 24th St



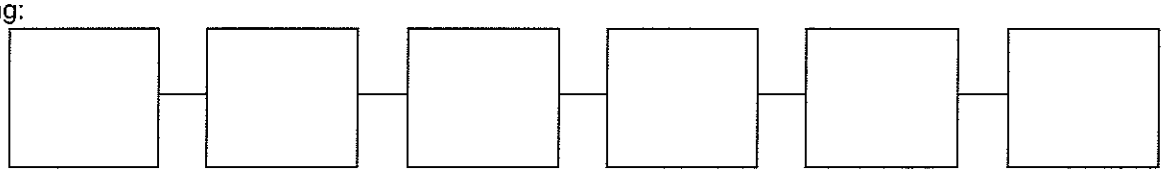
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

18

P ____

N/S Street: Myrtle St

E/W Street: 24th

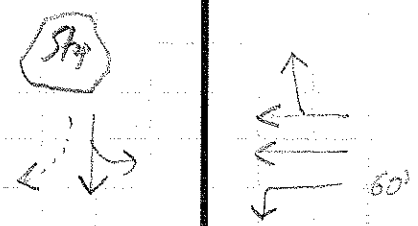
2-way Stop

MPH: 25
Lane Geo: 2U

Landmarks:

Pkg? Pkg?

Landmarks:

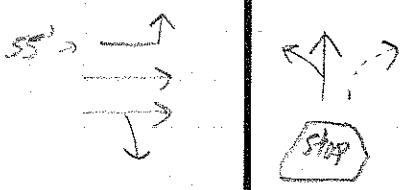


MPH: 40
Pkg?

Pkg?
MPH: 40

Lane Geo:
Pkg?

Pkg?
Lane Geo:



Landmarks:

Landmarks:

Pkg? Pkg?

MPH:
Lane Geo: 2U

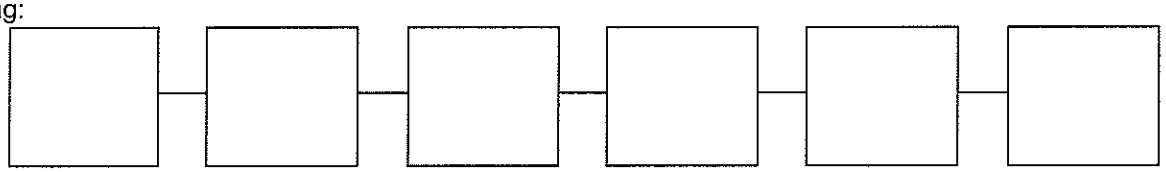
NOTES:

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

20

P ____

N/S Street: Spruce St

E/W Street: 24th St

2-way Stop

MPH: ____
Lane Geo: 2U

Landmarks:

Pkg? Pkg?

Landmarks:

Stop

MPH: ____ Pkg?

Pkg?

MPH: ____

Lane Geo: Pkg?

Pkg?

Lane Geo:

50'

Stop

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: 2U

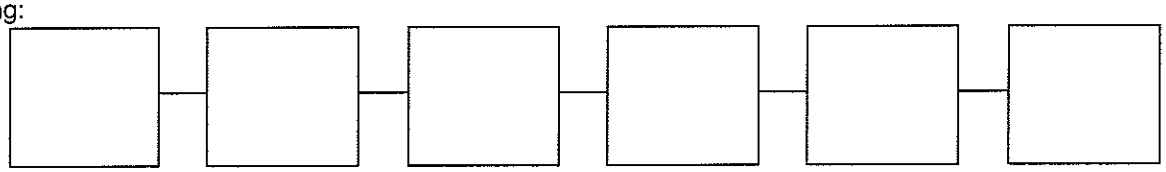
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

22

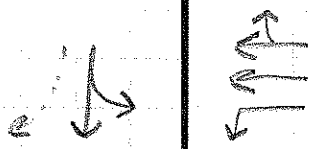
P ____

N/S Street: Pine St

E/W Street: 24th St

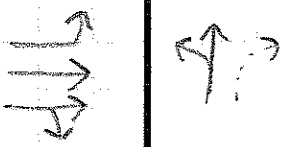
MPH: ____
Lane Geo: ____

Landmarks:
Pkg? Pkg?
Landmarks:



MPH: 40
Pkg?
Pkg?
MPH: 40

Lane Geo: 4D Paint
Pkg?
Pkg?
Lane Geo: 4D Paint



Landmarks:
Landmarks:
Pkg? Pkg?

MPH: ____
Lane Geo: ____

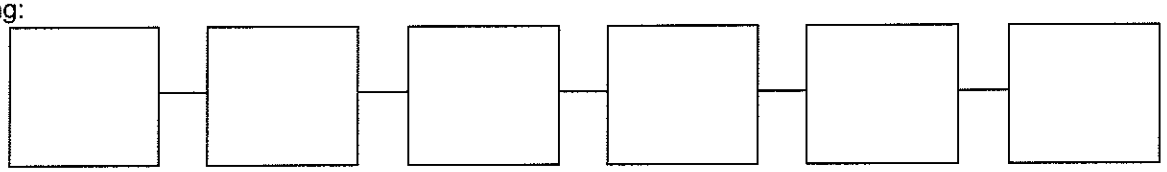
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

24

P ____

N/S Street: Cedar St

E/W Street: 24th St

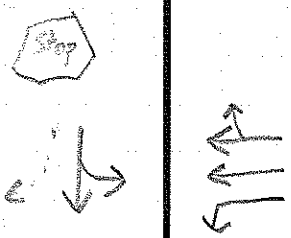
2-way Stop

MPH: 25
Lane Geo: 2U

Landmarks:

Pkg? Pkg?

Landmarks:

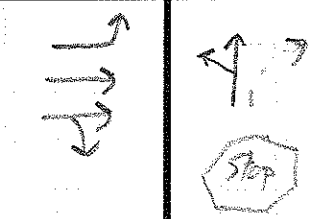


MPH: ____ Pkg?

Lane Geo: Pkg?

Pkg? MPH: 40

Pkg? Lane Geo: 4D Paint



Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____

Lane Geo: ____

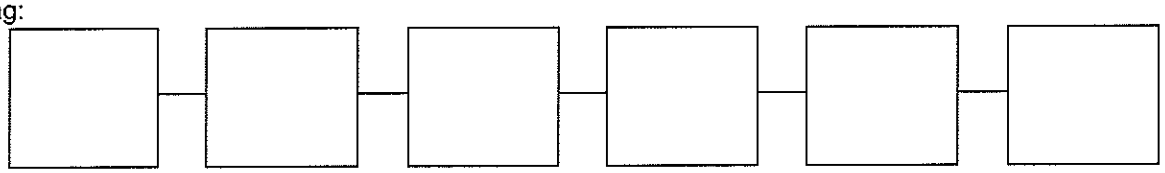
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 11/13/07 Time:
Calculated by: DK

26

P ____

N/S Street: Alder St - A St

E/W Street: 24th St

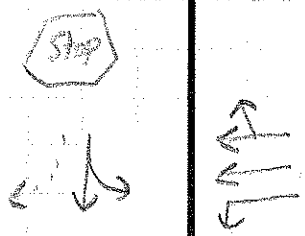
2-way Stop

MPH: ____
Lane Geo: ____

Landmarks:

Pkg? Pkg?

Landmarks:



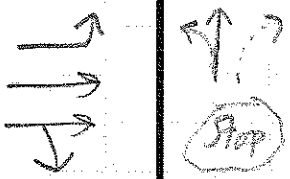
MPH: 40
Pkg?

Pkg?
MPH: 35

Lane Geo:

Pkg?

Pkg?
Lane Geo: 4D Bus



Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: 2V

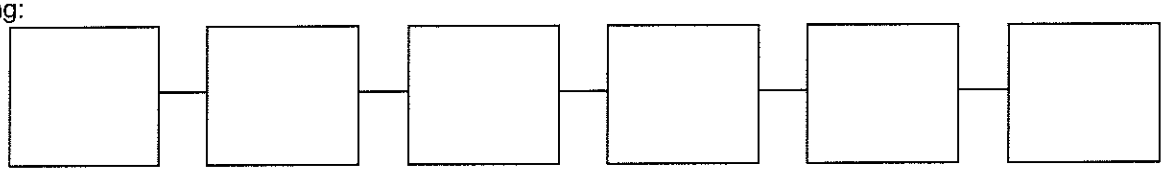
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 11/13/07 Time:
Calculated by: DK

28

P ____

N/S Street: B St - Bay St

E/W Street: 24th St

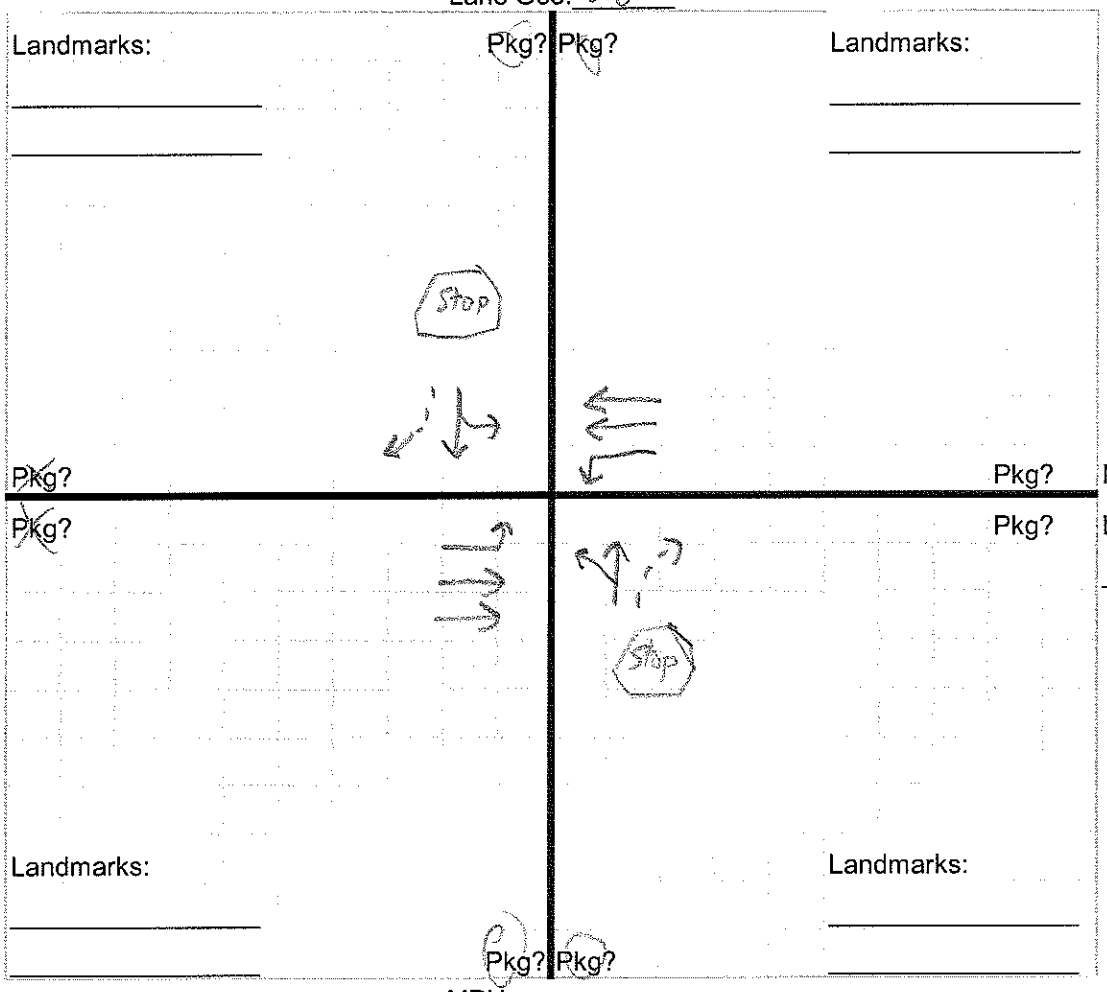
2-way Stop

MPH: ____
Lane Geo: 2U

Landmarks:

Pkg? Pkg?

Landmarks:



MPH: 35 Pkg?

Pkg? MPH: 35

Lane Geo: 4D Paint

Pkg?

Pkg? Lane Geo: 4D Paint

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: 2U

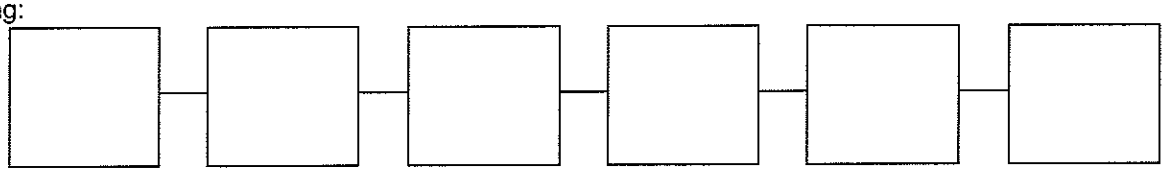
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Date: 11/13/07 Time:
Calculated by: DK

30

P ____

N/S Street: C St

E/W Street: 24th St

2-way Stop

MPH: ____
Lane Geo: 2U

Landmarks: Pkg? Pkg? Landmarks: Westchester Professional Building

Stop

MPH: 35 Pkg? Pkg? MPH: 35
Lane Geo: Pkg? Pkg? Lane Geo:

Stop

Landmarks: Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: 2U

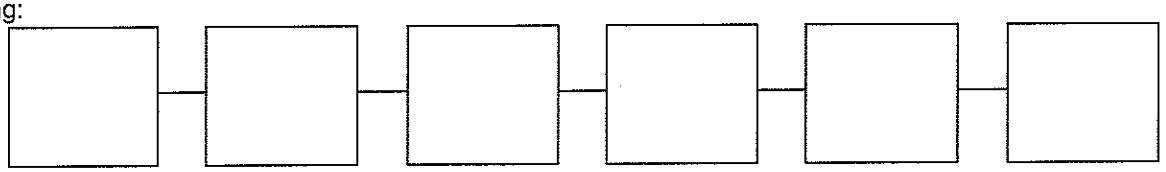
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 11/13/07 Time:
Calculated by: DK

32

P ____

N/S Street: Drake St - D St

E/W Street: 24th St

MPH: ____
Lane Geo: 2U

Landmarks:

Pkg? Pkg?

Landmarks:



MPH: ____ Pkg? Pkg? MPH: ____

Lane Geo: Pkg? Pkg? Lane Geo:



Landmarks:

Landmarks: Audio Video

Pkg? Pkg?

MPH: ____
Lane Geo: 2U

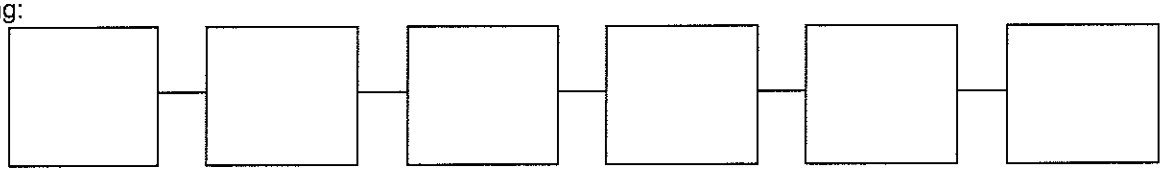
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 11/13/07 Time:
Calculated by: DK

35

P ____

N/S Street: Encina - E St

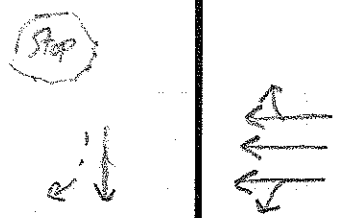
E/W Street: 24th St

2-way Stop

MPH: ____
Lane Geo: 2U

Landmarks:
Pkg?

Pkg?
Landmarks:
Pep Boys



MPH: ____
Lane Geo: ____
Pkg?

Pkg?
MPH: ____
Lane Geo: ____
Pkg?



Landmarks:
Tony's Auto Upholstery
Pkg?

Pkg?
Landmarks:

MPH: ____
Lane Geo: 2U

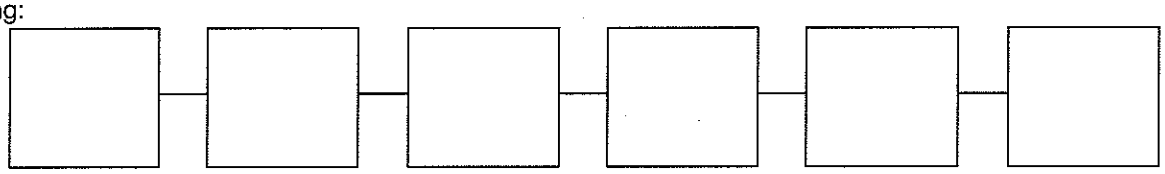
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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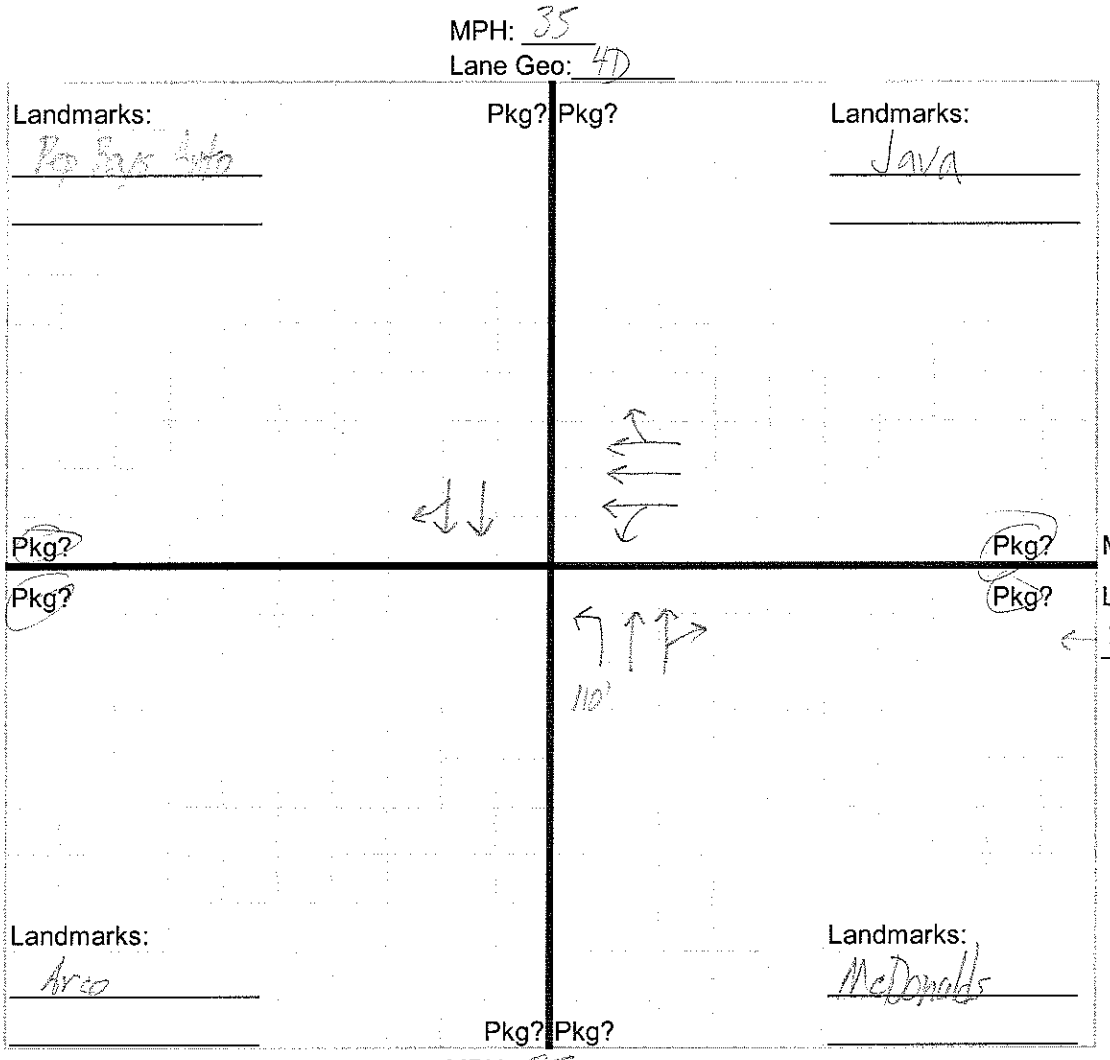
Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

39

P ____

N/S Street: F St

E/W Street: 24th



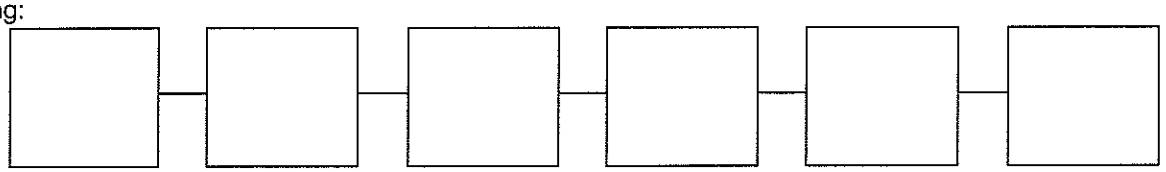
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 06/19/08 Time:
Calculated by: DK

1

P ____

N/S Street: G St

E/W Street: 24th

2-way Stop

MPH: ____
Lane Geo: 2U

Landmarks:
Pkg? Pkg?

Landmarks:

Stop

MPH: ____
Lane Geo:

Pkg?
Pkg?

Pkg?
Pkg?

MPH: ____
Lane Geo:

Stop

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: 2U

NOTES:

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:

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Location:
Date: 06/19/08 Time:
Calculated by: DK

3

P ____

N/S Street: H St

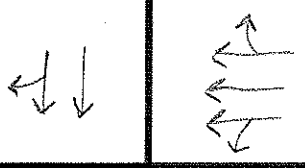
E/W Street: 24th

Signal

MPH: ____
Lane Geo: ____

Landmarks:
Pkg? Pkg?

Landmarks:



MPH: ____ Pkg? Pkg? MPH: ____

Lane Geo: Pkg? Pkg? Lane Geo:

Landmarks:

Landmarks:

Pkg? Pkg?

MPH: 35
Lane Geo: ____

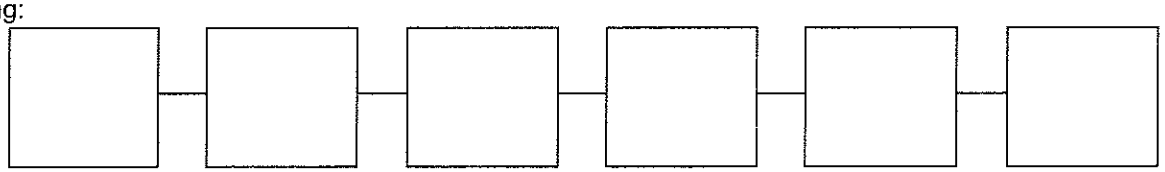
NOTES: ____

LEFT TURNS:

N/S: Protected Split
Lead-Lag Permitted

E/W: Protected Split
Lead-Lag Permitted

Phasing:



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Location:
Date: 06/19/08 Time:
Calculated by: DK

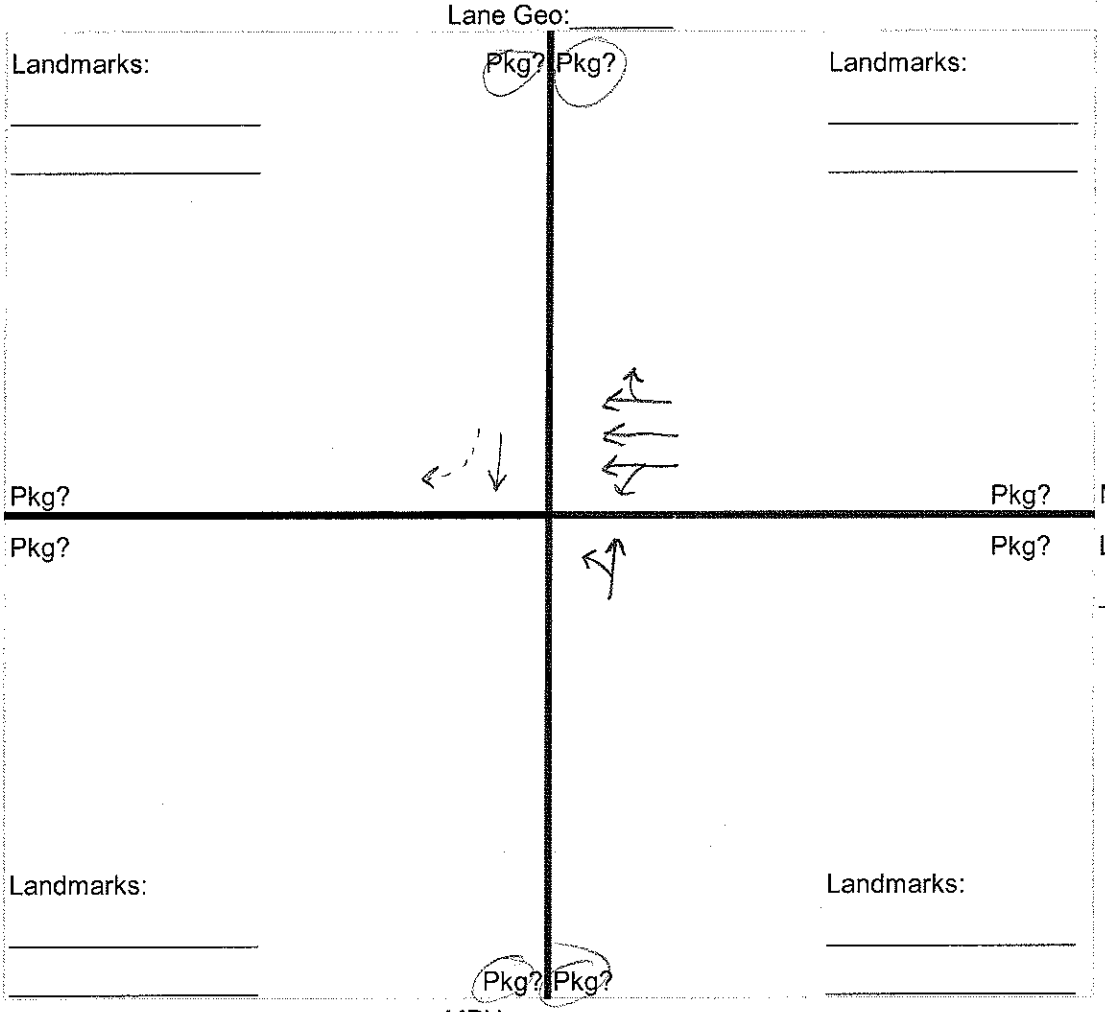
5

P ____

N/S Street: Eye St

E/W Street: 24th

2-way Stop



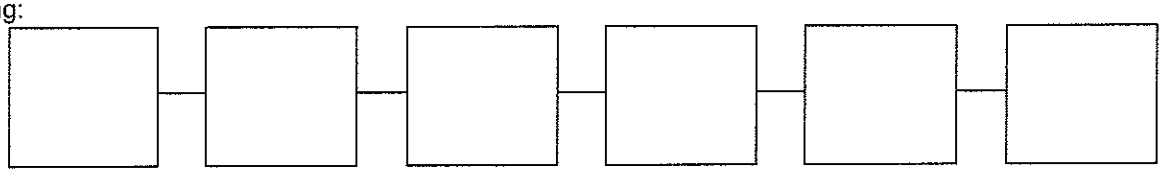
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 06/19/08 Time:
Calculated by: DK

7

P ____

N/S Street: Chester

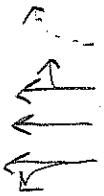
E/W Street: 24th

Signal

MPH: ____
Lane Geo: ____

Landmarks:
Pkg? Pkg?

Landmarks:

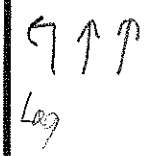


MPH: ____ Pkg?

Pkg? MPH: ____

Lane Geo: Pkg?

Pkg? Lane Geo:



Landmarks:

Landmarks:

Pkg? Pkg?

MPH: 35
Lane Geo: ____

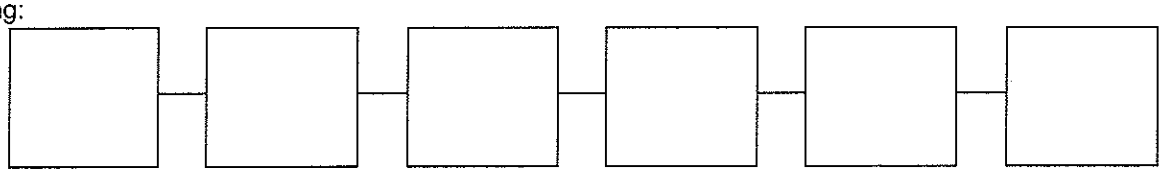
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 06/19/08 Time:
Calculated by: DK

9

P ____

N/S Street: K St

E/W Street: 24th

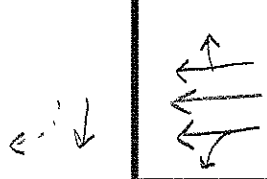
2-way Stop

MPH: ____
Lane Geo: ____

Landmarks:

Pkg? Pkg?

Landmarks:



MPH: ____ Pkg?

Pkg? MPH: ____

Lane Geo: Pkg?

Pkg? Lane Geo:



since only one lane to receive

Landmarks:

Landmarks:
Downtown Auto Sales

Pkg? Pkg?

MPH: ____
Lane Geo: ____

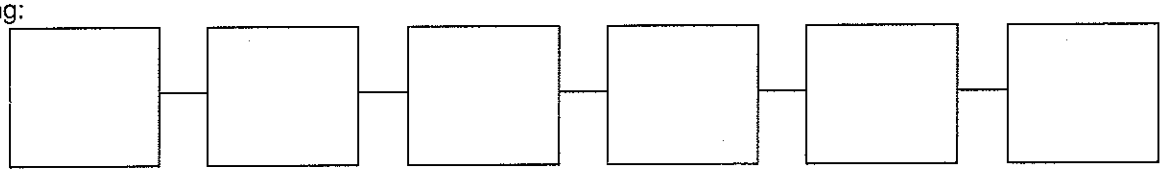
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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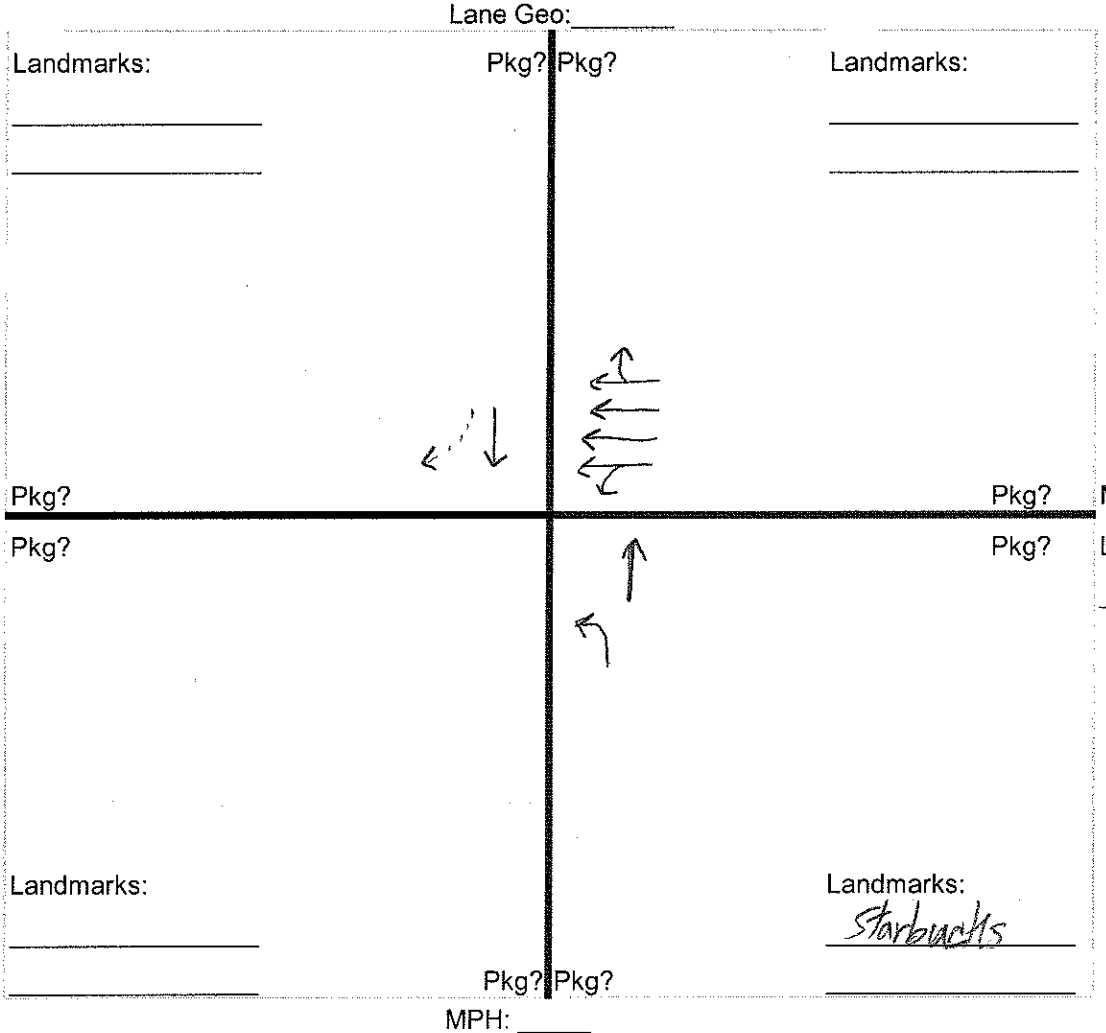
Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

11

P ____

N/S Street: L St

E/W Street: 24th St



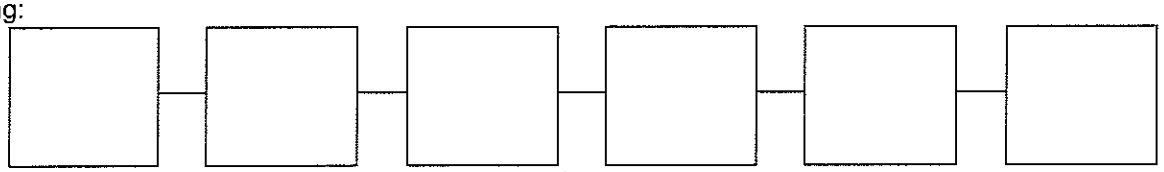
NOTES: _____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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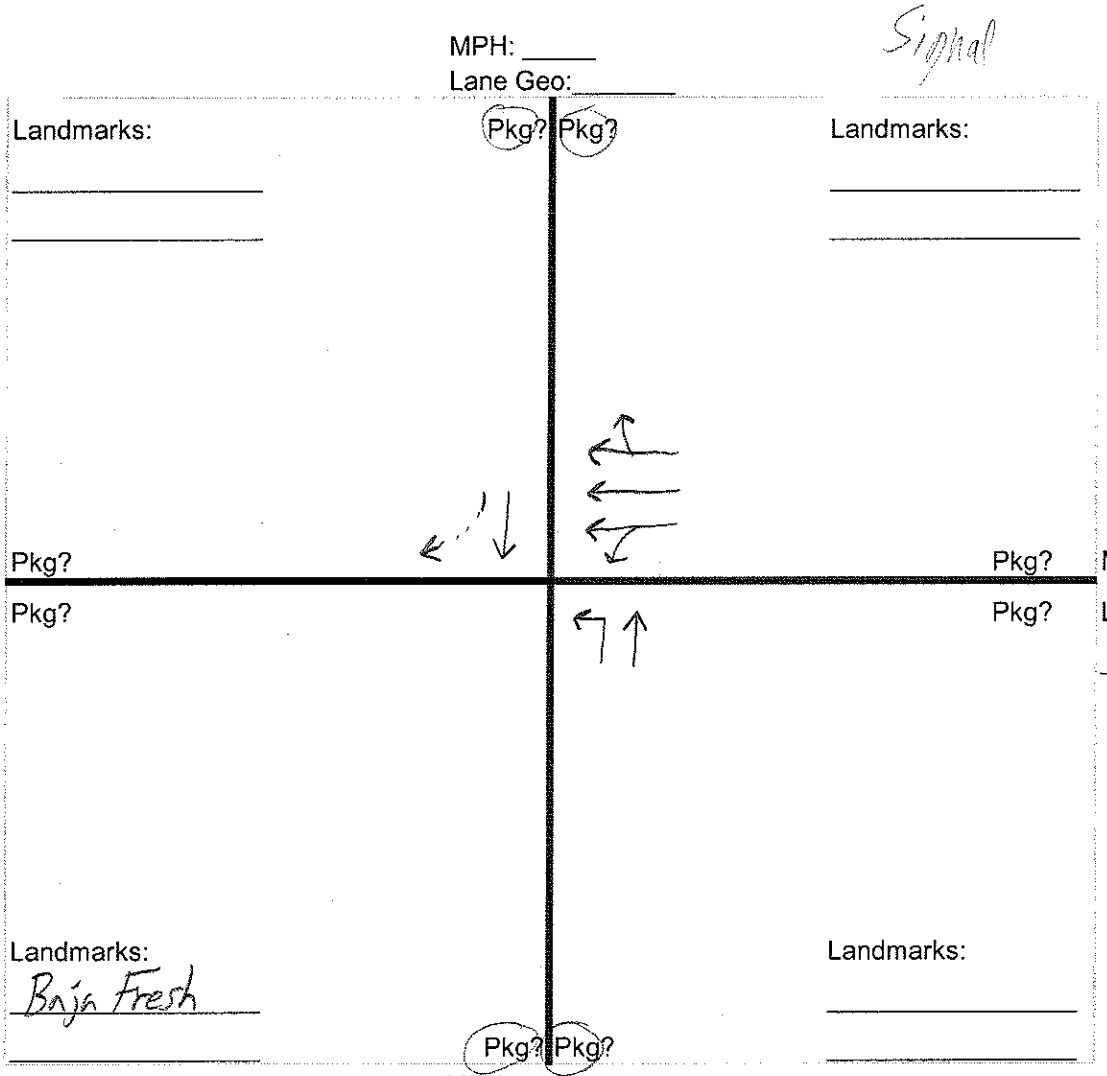
Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

13

P ____

N/S Street: M st

E/W Street: 24th St



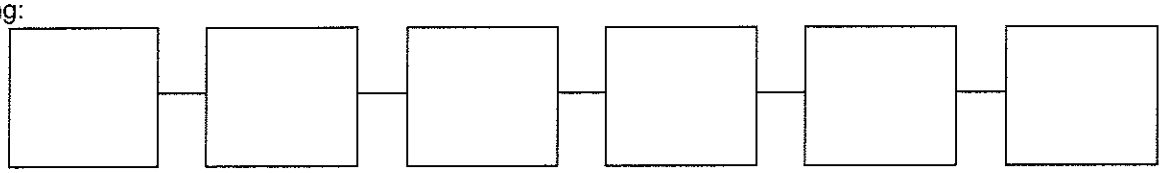
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Date: 11/13/07 Time:
Calculated by: DK

33

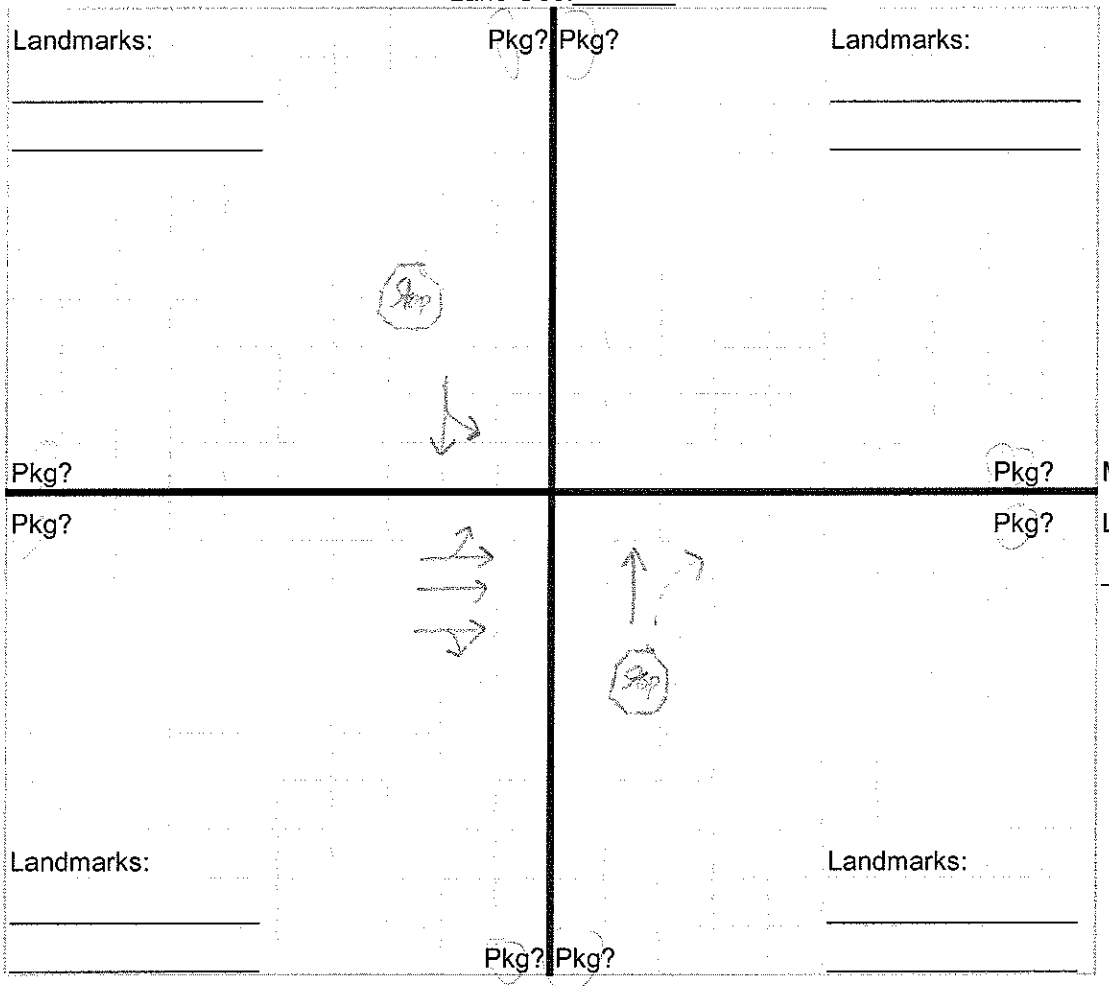
P ____

N/S Street: D St

E/W Street: 23rd St

2-way Stop

MPH: ____
Lane Geo: ____



MPH: 35
Lane Geo: 3 lanes →

MPH: 35
Lane Geo:

MPH: ____
Lane Geo: ____

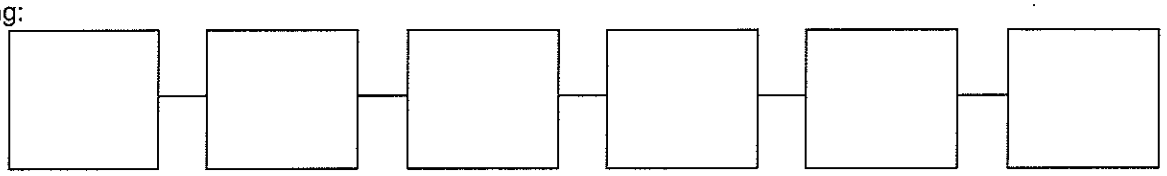
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Calculated by: DK

36

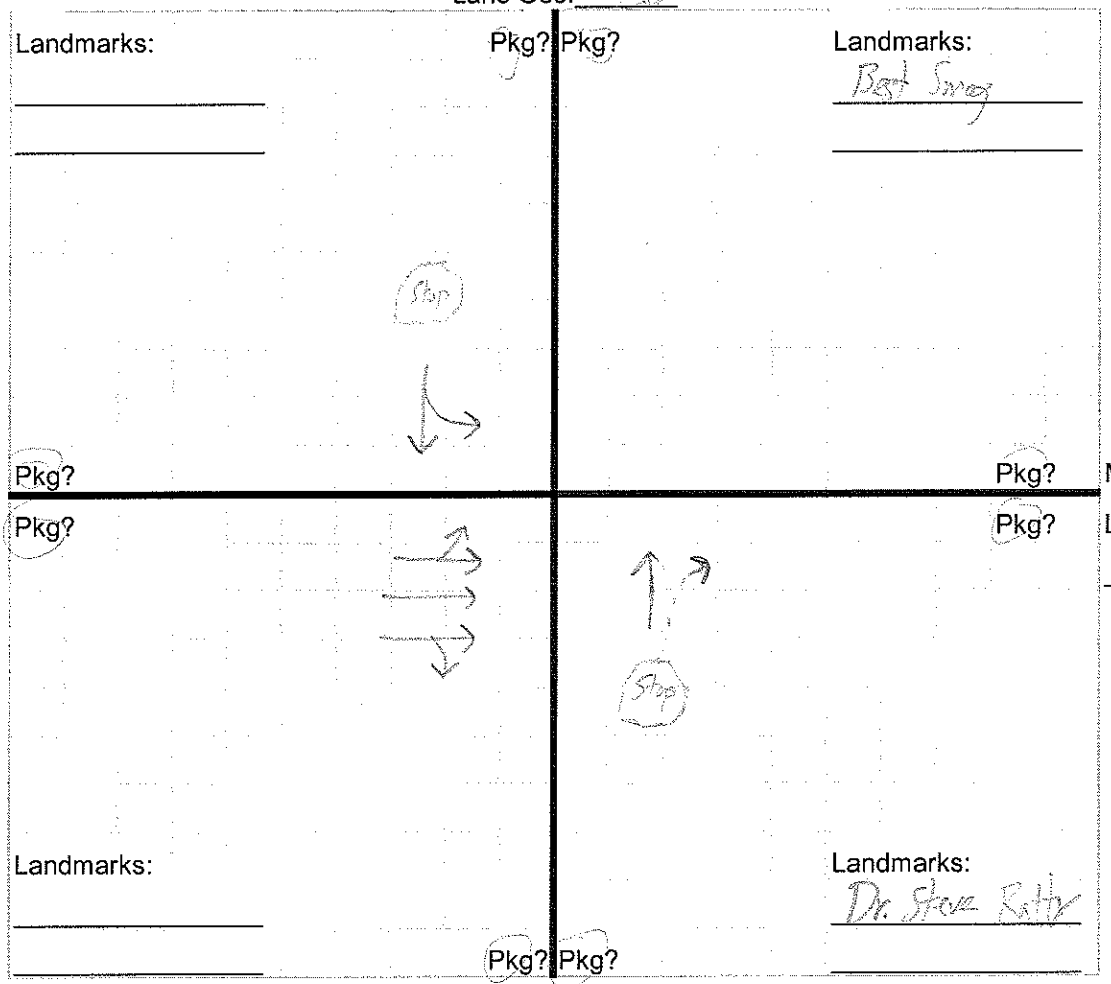
P ____

N/S Street: E St

E/W Street: 23rd St

2-way Stop

MPH: ____
Lane Geo: 2L



MPH: ____
Lane Geo: 2L

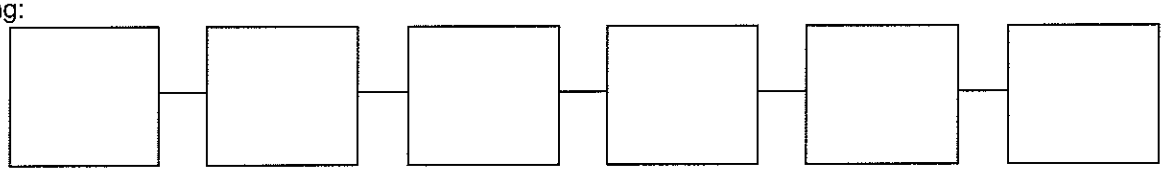
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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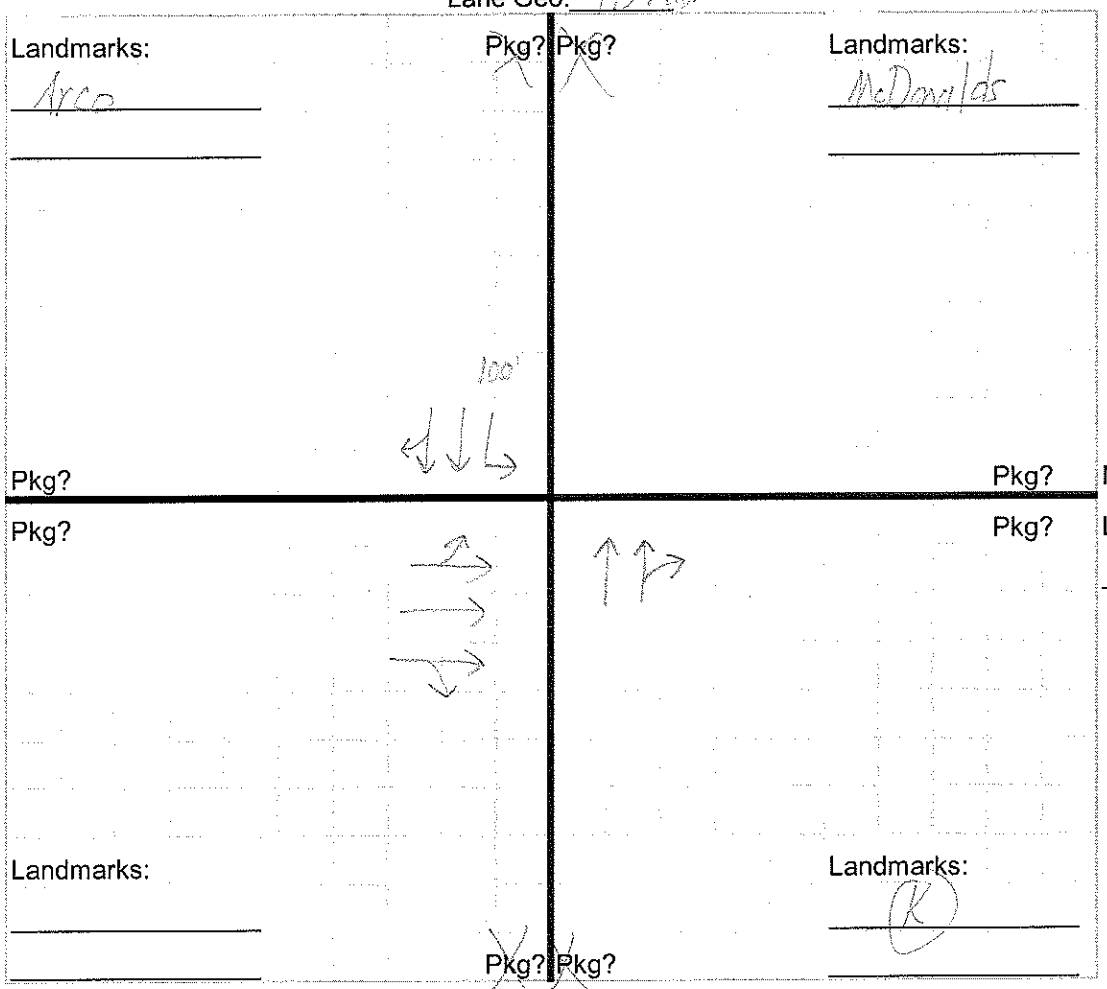
Job: Bakersfield - 30100816
Location:
Date: 11/13/07 Time:
Calculated by: DK

40

P ____

N/S Street: F St

E/W Street: 23rd St



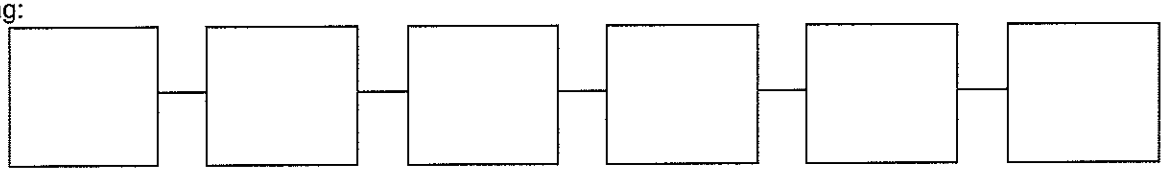
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 06/19/08 Time:
Calculated by: DK

2

P ____

N/S Street: G St

E/W Street: 23rd St

2-way Stop

MPH: ____
Lane Geo: ____

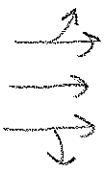
Landmarks:
Pkg? Pkg?

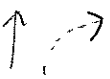
Landmarks:



MPH: ____ Pkg? Pkg? MPH: 35

Lane Geo: Pkg? Pkg? Lane Geo:





Landmarks:

Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: ____

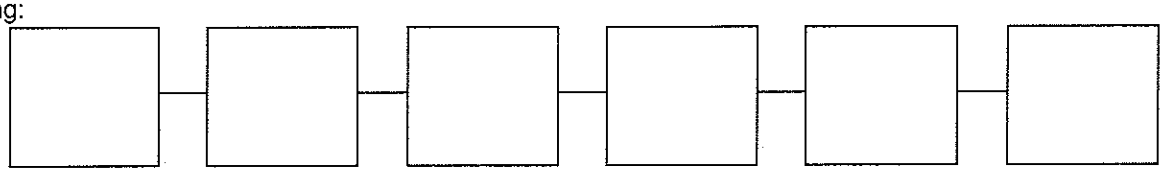
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



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Location:
Date: 06/19/08 Time:
Calculated by: DK

4

P ____

N/S Street: H St

E/W Street: 23rd St

Signal

MPH: ____
Lane Geo: ____

Landmarks:

Pkg? ~~Pkg?~~ ↑
No Parking

Landmarks:

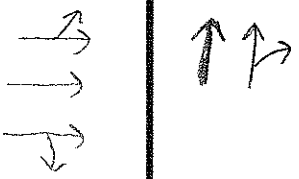
Permitted
↓ ↳

MPH: ____ Pkg?

Pkg? MPH: 35

Lane Geo: Pkg?

Pkg? Lane Geo:



Landmarks:

Landmarks:

Pkg? Pkg?

MPH: 35
Lane Geo: ____

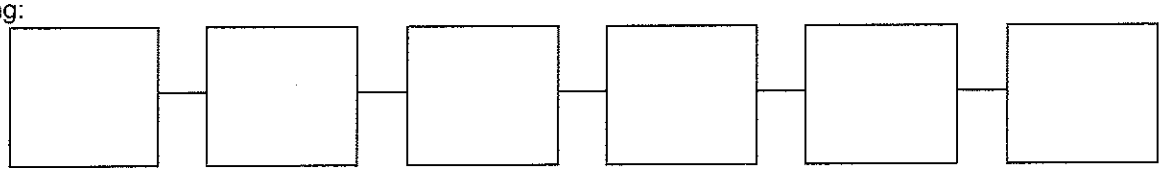
NOTES: ____

LEFT TURNS:

N/S: Protected Split
Lead-Lag (Permitted)

E/W: Protected Split
Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

6

P ____

N/S Street: Eye St

E/W Street: 23rd

MPH: ____
Lane Geo: ____

Landmarks:
Pkg? Pkg?

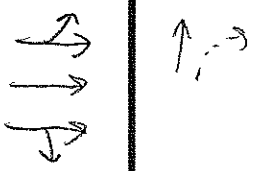
Landmarks:

MPH: ____ Pkg?

Pkg? MPH: 35

Lane Geo: Pkg?

Pkg? Lane Geo:



Landmarks:
Rite Aid

Landmarks:
Lorenes

Pkg? Pkg?

MPH: ____
Lane Geo: ____

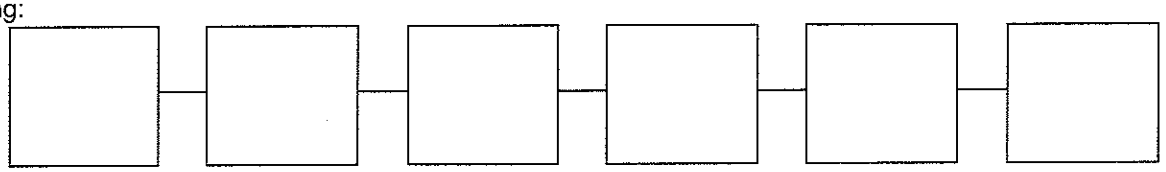
NOTES: ____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

8

P ____

N/S Street: Chester

E/W Street: 23rd

Signal

MPH: ____
Lane Geo: ____

Landmarks:
Pkg? Pkg?
Landmarks:

MPH: ____ Pkg?
Pkg? MPH: 35
Lane Geo: Pkg?
Pkg? Lane Geo:

Landmarks:
Landmarks:

Pkg? Pkg?

MPH: ____
Lane Geo: ____

NOTES: ____

LEFT TURNS:

N/S: Protected Split
Lead-Lag Permitted

E/W: Protected Split
Lead-Lag Permitted

Phasing:

RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

10

P ____

N/S Street: K St

E/W Street: 23rd

2-way Stop

MPH: _____
Lane Geo: _____

Landmarks:
_____
_____

Pkg? Pkg?

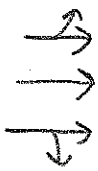
Landmarks:
_____
_____

MPH: _____ Pkg?

Pkg? MPH: _____

Lane Geo: Pkg?

Pkg? Lane Geo:
_____





Landmarks:
_____
_____

Landmarks:
_____
_____

Pkg? Pkg?

MPH: _____
Lane Geo: _____

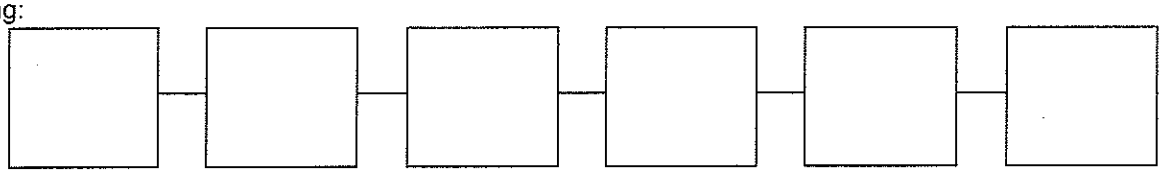
NOTES: _____

LEFT TURNS:

N/S: Protected Split Lead-Lag Permitted

E/W: Protected Split Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

12

P ____

N/S Street: L

E/W Street: 23rd

Signal

MPH: ____
Lane Geo: ____

Landmarks: Chevron

Pkg? Pkg?

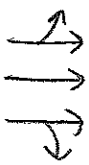
Landmarks:

MPH: ____ Pkg?



Pkg? MPH: ____

Lane Geo: Pkg?





Pkg? Lane Geo: ____

Landmarks: Wells Fargo

Pkg? Pkg?

Landmarks:

MPH: ____
Lane Geo: ____

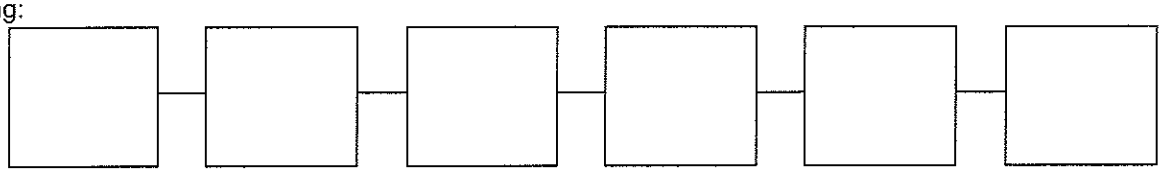
NOTES: ____

LEFT TURNS:

N/S: Protected Split
Lead-Lag ~~Permitted~~

E/W: Protected Split
Lead-Lag Permitted

Phasing:



RBF CONSULTING
800-479-3808 - www.rbf.com

Job: Bakersfield - 30100816
Location:
Date: 06/19/08 Time:
Calculated by: DK

14

P ____

N/S Street: M St

E/W Street: 23rd St

MPH: ____
Lane Geo: ____

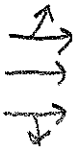
Landmarks:
____
____

Pkg? Pkg?

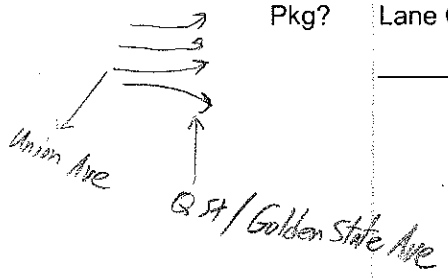
Landmarks:
____
____

MPH: ____ Pkg? Pkg? MPH: ____

Lane Geo: Pkg? Pkg? Lane Geo:
____







Landmarks:
Western Dental
____

Pkg? Pkg?

Landmarks:
____
____

MPH: 25
Lane Geo: ____

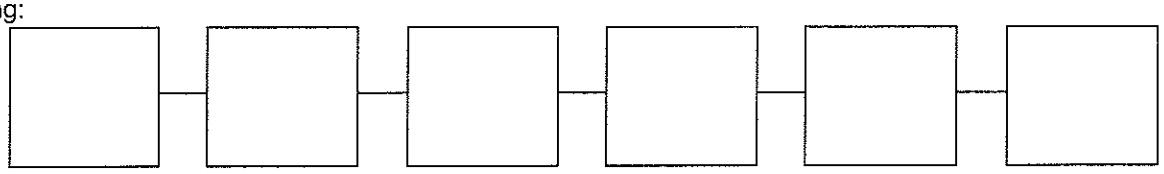
NOTES: ____

LEFT TURNS:

N/S: Protected Split
Lead-Lag Permitted

E/W: Protected Split
Lead-Lag Permitted

Phasing:

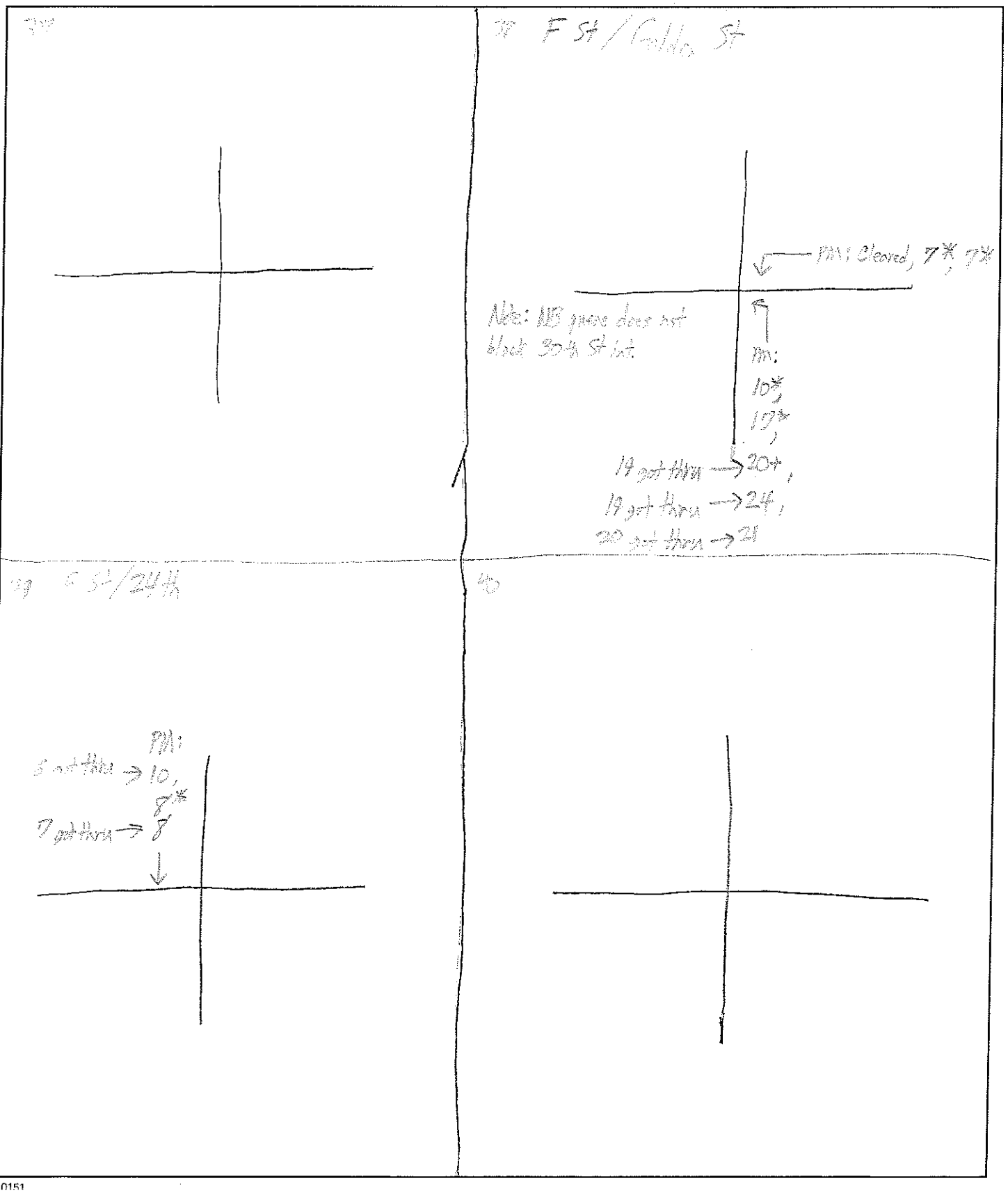


RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION
800.479.3808 • www.RBF.com

JOB NAME Bakersfield
JOB NO. 30100816
SHEET NO. _____ OF _____
DESIGNED BY _____ DATE 11-13-07
CHECKED BY DK DATE _____

Queue Conditions



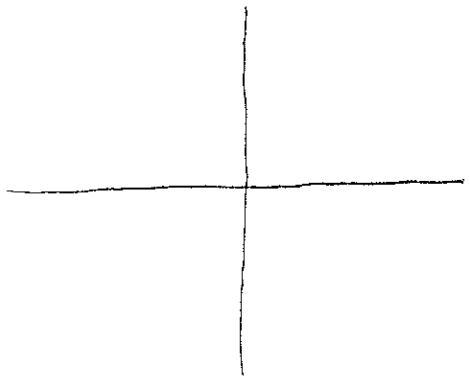
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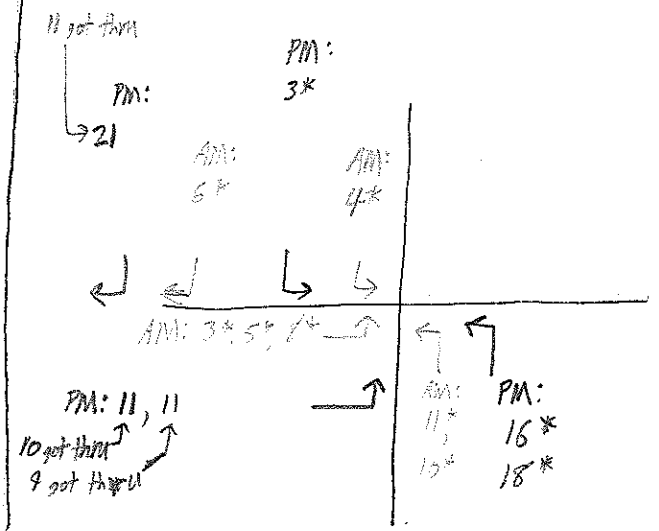
JOB NAME Bakersfield
JOB NO. 30100816
SHEET NO. _____ OF _____
DESIGNED BY _____ DATE 11-13-07
CHECKED BY DK DATE _____

Queue Conditions

5

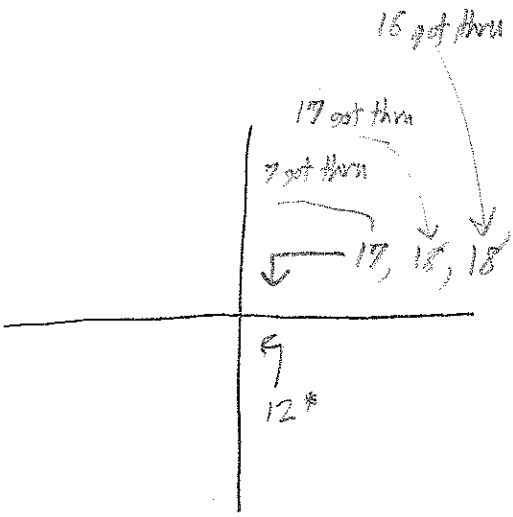


6 SR-99 NB Ramps / 24th 3:45 pm

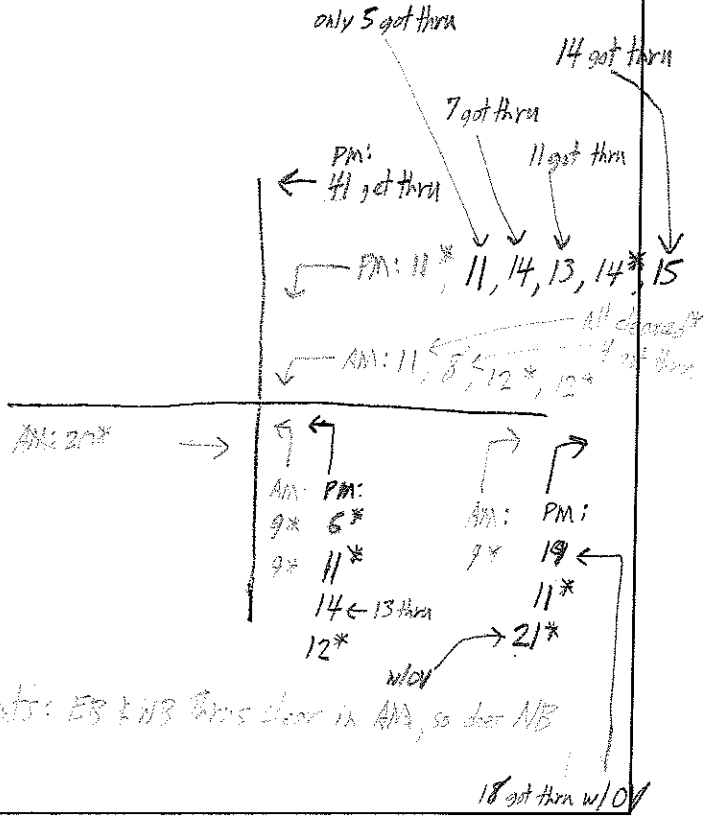


EB & WB flows clear in AM

7 ~~Westwind Dr~~ / Truxtun Ave SB / 24th
5:30 pm



8 Oak St / 24th 3:30 pm



Comments: EB & NB flows clear in AM, so does NB

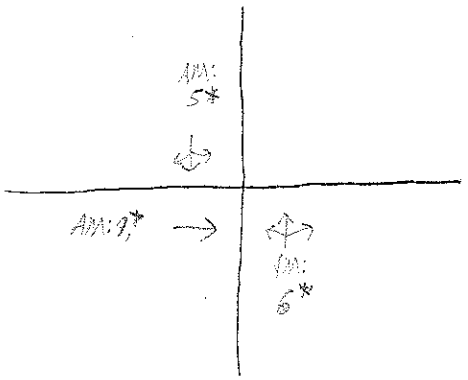
RBF CONSULTING

PLANNING ■ DESIGN ■ CONSTRUCTION
800.479.3808 • www.RBF.com

JOB NAME Bakersfield
JOB NO. 30100816
SHEET NO. _____ OF _____
DESIGNED BY _____ DATE 11-13-07
CHECKED BY DK DATE _____

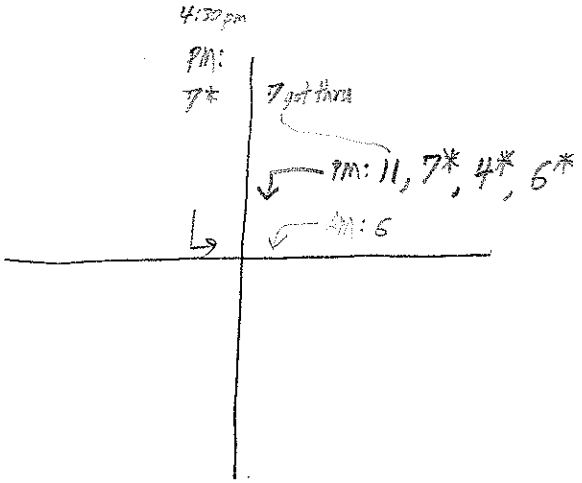
Queue Conditions

1 Gibson / SR-58



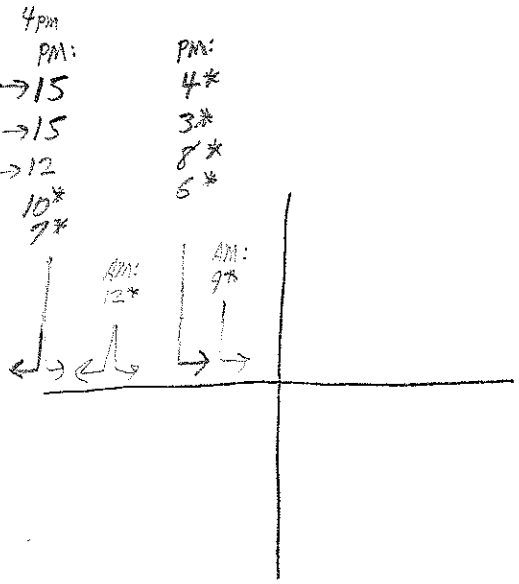
Comments: All queues clear

2 Chester Del Court / SR-58



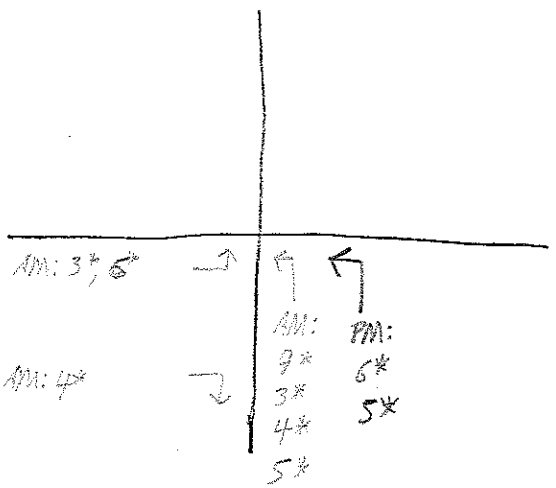
Comments: No significant queues, All clear

3 SR-99 EB Ramps / SR-58



Comments: Queues clear

4 Buck Owens Bl/ Sillect - SR-99 NB Ramps



All queues clear in AM

RBF CONSULTING

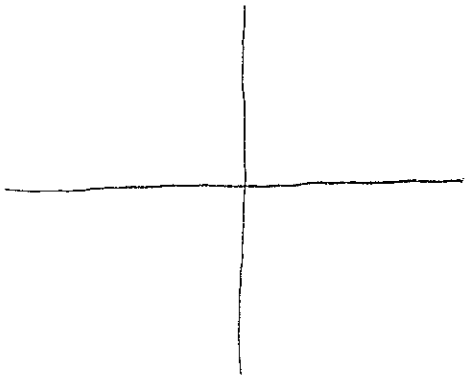
PLANNING ■ DESIGN ■ CONSTRUCTION
800.479.3808 • www.RBF.com

JOB NAME Bakersfield
JOB NO. 30100816
SHEET NO. _____ OF _____
DESIGNED BY _____ DATE 11-13-07
CHECKED BY DK DATE _____

Queue Conditions

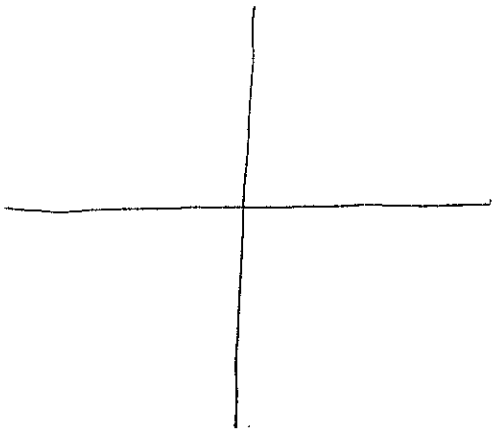
9 Oak / 21st St

PM: All queues clear

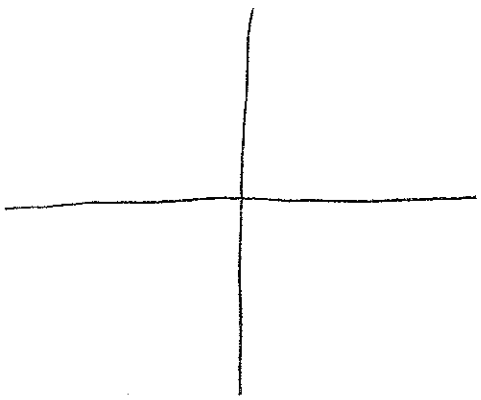


10 Oak / 19th St

PM: All queues clear



11 Oak



12 Oak / Traxton

PM:
← 18 thrus get by, but queue is α
17 "

10 got thru
9 got thru
7 got thru
8 got thru

Clears in PM ↳

← PM: 10, 10, 10, 13

PM: 9, 12
8 got thru →
9 got thru →

APPENDIX C
Existing Conditions Traffic Signal Timing Data

CALTRAN'S C-8 PROGRAM Version 3

F-PAGE

CO/RTE/PM: KER-99-25.51 KER-178-0.073

Location: 99NBOFF@SR 178/PIERCE(B.O. BLVD)

Card installed: 5/7/2003

Signal installed: 3/21/1963

Timing By: O

Reviewed By: ARL **Date:** February 6, 2008

	Direction		EB		SB	EBLT	WB	SBLT	NB
	Det. Dist.		200		200		200	O/L"A"	120
	Phase	1	2	3	4	5	6	7	8
0	Walk						7		
1	D. Walk						16		
2	Min Grn		10		8	6	10	6	8
3	Type III		20		20		20		20
4	Add Intial								
5	Passage		4.5		4.5	2.0	4.5	2.0	3.3
6	Max Gap		6.1		6.0	2.0	6.1	2.0	4.3
7	Min Gap		2.0		2.0	2.0	2.0	2.0	2.0
8	Max 1		30		25	15	30	15	25
9	Max 2		40		35	25	40	25	35
A	Max 3								
B									
C	Red by		0.1		0.1		0.1		0.1
D	Every		0.7		0.6		0.7		1.1
E	Yellow		3.9		3.9	3.2	3.9	3.2	3.9
F	Red		1.0		2.0	2.0	1.0	1.0	2.0
*	*C/O w/mid*								
	Speed		40		40	25	40	25	35

9	C	D	E		F
	Gap Set = 3	TB Select = 1	EV Select		Permitted Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr		Red Lock
	C Serve Min	TB Min	EVA Delay		Yellow Lock
	Max Type	Ped Select=	EVA Hold		Vehicle Recall
		7-wire Select	EV-B Delay		Ped Recall
			EV-B Hold		Permitted Ped Ph's
			EV-C Delay		"A" Arrow
			EV-C Hold		"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay		Double Entry
Year			EV-D Hold		Max 2 Extension
Month	OL-A Grn=		EV Max Timer		Lag Phases
Date	OL-B Grn=		RR2 TRCLR		Red Rest
DOW	OL-C Grn=		EV Clr Tmr		Coord Walk
Hour	OL-D Grn=		EV DelayTimer		Max 3 Extension
Minute			RR Clr Timer		Yellow Start
Seconds	RAM ADD		EV Timer		First Serve

PERMITTED PHASES

LIGHTS

	1	2	3	4	5	6	7	8	
0		2		4	5	6	7	8	0
1		2				6			1
2					5				2
3		2				6			3
4									4
5						6			5
6									6
7									7
8				4				8	8
9		2		4	5	6	7	8	9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4				8	E
F		2				6			F

* - FOR INFO ONLY

OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-99-25.51

LOCATION 99NBOFF@SR 178/PIERCE(B.O. BLVD)

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION: SAME CABINET

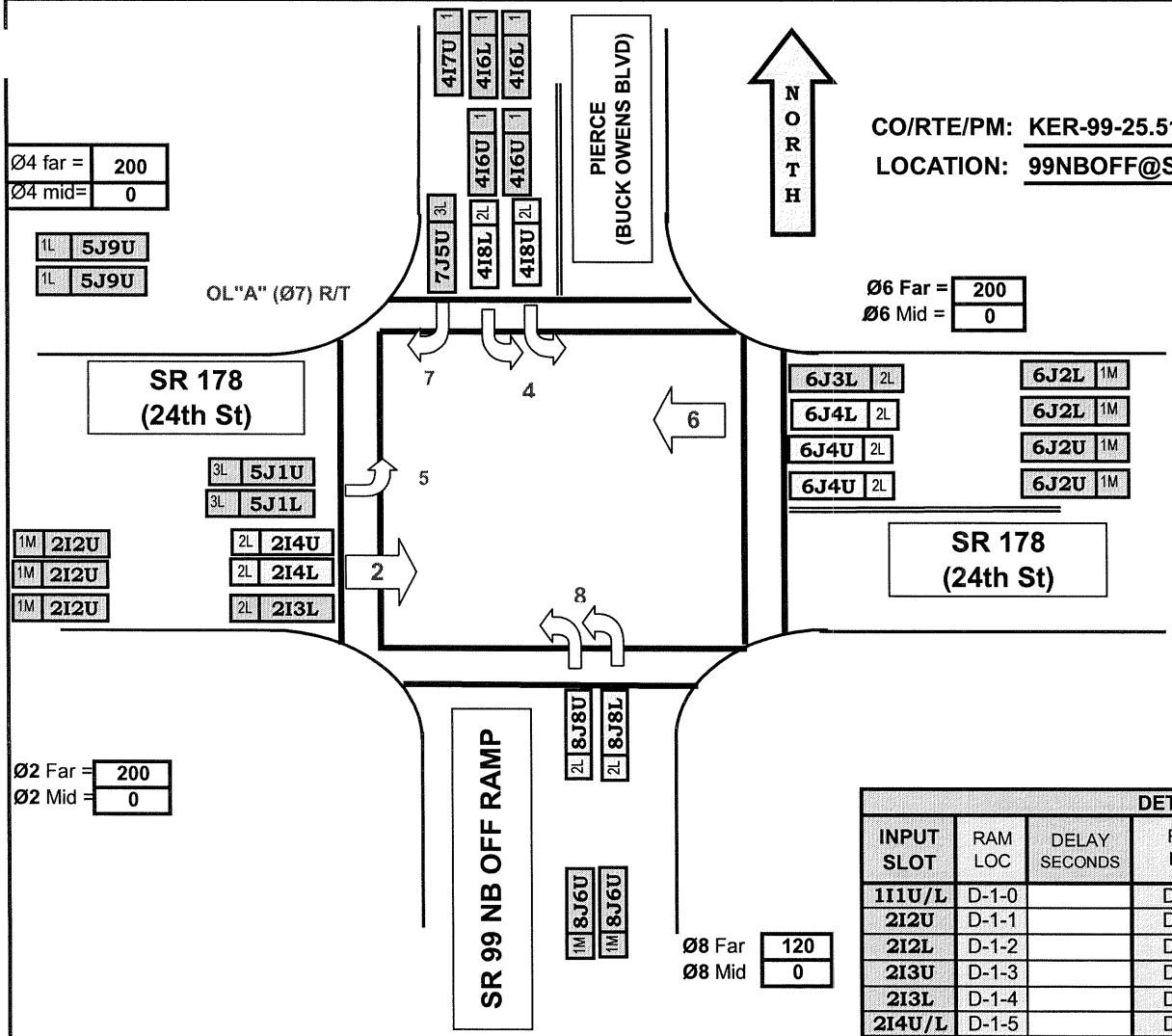
	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # **16**	Cycle Length	120	140	100	120	140	140	140			LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	5	7	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	5	7	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	24	24	20	24	29	28	28			Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green	23	19	15	15	19	19	20			Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	5	7	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	5	8	6
7	Trans CP	Ph. 7 Green	16	16	20	11	17	16	16			Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	5	7	7
8	Flash Start	Ph. 8 Green	32	33	20	24	39	33	35			Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	97	73	50	44	15	15	15			Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

SW. ON		
1		LOCATION
2		
3		
4		
5	X	
6		
7		
8		

4 1 2 PROM

DIP SWCH		FEATURES
1		
2		
3		
4		
5		
6		
7		
8		

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-99-25.51

LOCATION: 99NBOFF@SR 178/PIERCE(B.O. BLVD)

332 CABINET - INPUT FILE LAYOUT

SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES

1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

DETECTOR SETTINGS CONTROL CODE "D"

INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2	2.0	D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4	2.0	6J3L	D-2-4	15.0	D-4-4	2.0
2I4U/L	D-1-5		D-3-5	2.0	6J4U/L	D-2-5		D-4-5	2.0
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B	2.0	8J8U/L	D-2-B		D-4-B	2.0
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-99-25.51 LOCATION: 99NBOFF@SR 178/PIERCE(B.O. BLVD)

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6 MAGS FAR	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2 NEAR	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10 MAGS FAR	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6 NEAR	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12 NEAR	Ph 2 Call&TP3 T4-3&4 NEAR	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8 NEAR	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2 LT NEAR	Ph 6 Cnt&Ext T3-5&6 MAGS FAR	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2 NEAR 2 LANES	Ph 7 Cnt&Ext T5-5&6 RT OL"A"	Ph 8 Cnt&Ext T5-9&10 MAGS FAR	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6 NEAR	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4 LT NEAR	Ph 6 Cnt&Ext T3-7&8 MAGS FAR	Ph 6 Cnt&Ext T3-11&12 NEAR	Ph 6 Call&TP3 T5-3&4 NEAR	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8 NEAR	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

ISOLATORS

COMMENTS:

1. SB R/T setup as O/L "A" with detection assigned to Phase 7
2. WB R/T setup as O/L "B" no detection assigned. O/L not allowed with 2, 5, and 6 because of Phase 6 Ped. O/L "B" installed on: 9-19-96 by Maint. Day Labor

CO/RTE/PM: KER-99-25.51 **LOCATION:** 99NBOFF@SR 178/PIERCE(E

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	6/18/96'	213L AND 6J3L REASSIGN FUNCTION TO CALL/TYPE 3(7&8)
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL	YL			EX	CT	CA	T3			1	2	3	4	5	6	7	8	RL	YL			EX	CT	CA	T3
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*		7	8	4	J3L						*							*		7	8
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*							*	*		
7	I6U				*									*	*			7	J6U								*						*	*		
8	I6L				*									*	*			8	J6L								*						*	*		
9	I7U				*									*	*			9	J7U								*						*	*		
A	I7L				*	5								*				A	J7L								*						*			
B	I8				*											*	*	B	J8								*						5		*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*							*	*		

C-8 PROGRAM

CO\RTE\PM: KER-99-25.51

LOCATIONS: 99NBOFF@SR 178/PIERCE(B.O. BLVD)

CONTROL CODE "D"

	D	PHASE FLAG								E	PHASE FLAG								F	PHASE FLAG								
	MAX RECALL	1	2	3	4	5	6	7	8	MIN RECALL	1	2	3	4	5	6	7	8	PED RECALL	1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

O/L "A" SB R/T
O/L "B" WB R/T

	F	PHASE FLAGS								
		1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		E	PHASE FLAGS								F	PHASE FLAGS								
		1	2	3	4	5	6	7	8	"NOT"	1	2	3	4	5	6	7	8	"ON"	1	2	3	4	5	6	7	8	
A										OL "A"						6		8	OL "A"		2		4	5		7		A
B										OL "B"		2			5	6			OL "B"				4			7	8	B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN	2	3	4	

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-99-25.51 LOCATION: 99NBOFF@SR 178/PIERCE(B.O. BLVD)

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

PUSH/PULL F-PAGE

CO/RTE/PM: KER-99-25.9
Location: 99NBRAMPS@PIERCE(B.O.B)-SILLECT

Card installed: 6/30/1998
Signal installed: 4/23/1991

Timing By: O
Reviewed By: ARL **Date:** February 6, 2008

	Direction	SBLT	NB	WB	EB	NBLT	SB		
	Det. Dist.		200	120	120		200		0
	Phase	1	2	3	4	5	6	7	8
0	Walk		7	7			7		
1	D. Walk		20	21			20		
2	Min Grn	6	10	8	8	6	10		
3	Type III		20	20	20		20		
4	Add Intial								
5	Passage	2.0	5.5	4.1	4.1	2.0	5.5		
6	Max Gap	2.0	7.3	5.4	5.4	2.0	7.3		
7	Min Gap	2.0	2.0	2.0	2.0	2.0	2.0		
8	Max 1	15	30	25	25	15	30		
9	Max 2	25	40	35	35	25	40		
A	Max 3								
B									
C	Red by		0.1	0.1	0.1		0.1		
D	Every		0.6	0.7	0.7		0.6		
E	Yellow	3.2	3.6	3.2	3.2	3.2	3.6		
F	Red	0.5	1.0	0.5	1.0	2.0	1.0		
*	*C/O w/mid*								
	Speed	*25*	35	*30*	30	*25*	35		

9	C	D	E		F
	Gap Set = 3	TB Select = 1	EV Select		Permitted Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr		Red Lock
	C Serve Min	TB Min	EVA Delay		Yellow Lock
	Max Type	Ped Select=	EVA Hold		Vehicle Recall
		7-wire Select	EV-B Delay		Ped Recall
			EV-B Hold		Permitted Ped Ph's
			EV-C Delay		"A" Arrow
			EV-C Hold		"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay		Double Entry
Year			EV-D Hold		Max 2 Extension
Month	OL-A Grn=		EV Max Timer		Lag Phases
Date	OL-B Grn=		RR2 TRCLR		Red Rest
DOW	OL-C Grn=		EV Clr Tmr		Coord Walk
Hour	OL-D Grn=		EV DelayTimer		Max 3 Extension
Minute			RR Clr Timer		Yellow Start
Seconds	RAM ADD		EV Timer		First Serve

PERMITTED PHASES

	LIGHTS								
	1	2	3	4	5	6	7	8	
0	1	2	3	4	5	6			0
1		2				6			1
2									2
3		2				6			3
4									4
5		2	3			6			5
6									6
7									7
8									8
9	1	2	3	4	5	6			9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4					E
F		2				6			F

* - FOR INFO ONLY

OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-99-25.9

LOCATION 99NBRAMPS@PIERCE(B.O.B)-SILLECT

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION:

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # **18**	Cycle Length	120	140	100	110	105					LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green	8	9	10	11	10					Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green	20	22	25	26	25					Force Off Phase 3	Perm. Phase 3	Y-COORD "C"	"D"	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	22	22	25	25	25					Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green	20	20	20	24	24					Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green										Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A										Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

SW. ON

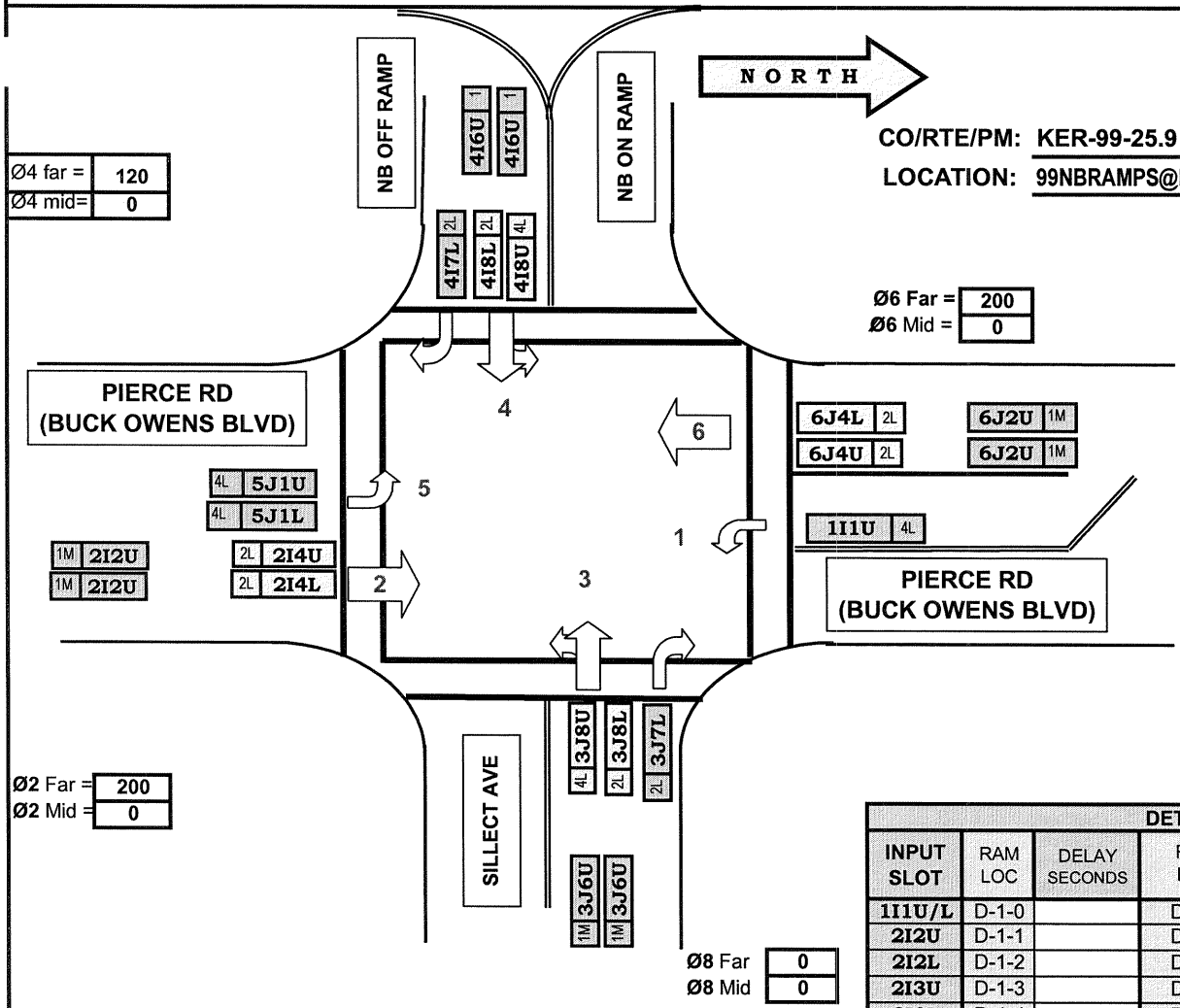
4	1	
1	2	X
2	3	
	4	
P	5	X
R	6	
O	7	
M	8	

LOCATION

D	1	
I	2	
P	3	
	4	
S	5	
W	6	
C	7	
H	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-99-25.9

LOCATION: 99NBRAMPS@PIERCE(B.O.B)-SILLECT

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5	2.0	6J4U/L	D-2-5		D-4-5	2.0
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	1.0
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-99-25.9 LOCATION: 99NBRAMPS@PIERCE(B.O.B)-SILLECT

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2 LT NEAR	Ph 2 Cnt&Ext T2-5&6 MAGS FAR	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2 LT NEAR	Ph 6 Cnt&Ext T3-5&6 MAGS FAR	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 3 Cnt&Ext T5-9&10 MAGS FAR	Ph 8 Cnt&Ext T7-1&2	Ph 3 Call&TP3 T7-5&6 NEAR	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4 LT NEAR	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 3 Ext T7-3&4 RT NEAR	Ph 3 Call&TP3 T7-7&8 NEAR	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

ISOLATORS

COMMENTS:

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1		REASSIGNED PHASE DISPLAY J6U, J7L & J8 TO PHASE 3.
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL	YL			EX	CT	CA	T3			1	2	3	4	5	6	7	8	RL	YL			EX	CT	CA	T3
										1	2	3	4	5	6	7	8											1	2	3	4	5	6	7	8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*								*	*		
2	I2L		*											*	*			2	J2L						*								*	*		
3	I3U		*											*	*			3	J3U						*								*	*		
4	I3L		*											*				4	J3L						*								*			
5	I4		*													*	*	5	J4						*										*	*
6	I5			*										*	*			6	J5							*								*	*		
7	I6U				*									*	*			7	J6U			3					*							*	*		
8	I6L				*									*	*			8	J6L								*							*	*		
9	I7U				*									*	*			9	J7U								*							*	*		
A	I7L				*									*				A	J7L			3					*							*			
B	I8				*											*	*	B	J8			3					*							5		*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*								*	*		

C-8 PROGRAM

CO\RTE\PM: KER-99-25.9 **LOCATIONS:** 99NBRAMPS@PIERCE(B.O.B)-SILLECT

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT			3					*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-99-25.9 LOCATION: 99NBRAMPS@PIERCE(B.O.B)-SILLECT

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

PUSH/PULL F-PAGE

CO/RTE/PM: KER-178-0.36
Location: SR 178(24th) AT OAK ST
Timing By: *Anthony R Lopez*
Reviewed By: ARL **Date:** February 6, 2008

Card installed: 6/30/1998
Signal installed: 8/23/1960

	Direction	WBLT	EB			EBLT	WB	SB	NB
	Det. Dist.		250		0		250		250
	Phase	1	2	3	4	5	6	7	8
0	Walk		7				7		7
1	D. Walk		18				12		30
2	Min Grn	6	10			6	10	6	8
3	Type III		25				20		20
4	Add Intial	2.0							
5	Passage	2.0	5.7			2.0	5.7	1.0	5.6
6	Max Gap	2.0	7.2			2.0	6.9	2.0	7.3
7	Min Gap	2.0	2.0			2.0	2.0	2.0	2.0
8	Max 1	15	45			15	50	15	20
9	Max 2	25	55			25	60	25	30
A	Max 3								
B									
C	Red by		0.1				0.1		0.1
D	Every		0.7				0.5		0.5
E	Yellow	3.2	3.9			3.2	3.9	3.9	3.9
F	Red	2.0	2.0			1.0	1.0	0.5	2.0
*	*C/O w/mid*								
	Speed	*25*	40			*25*	40	*40*	40

9	C	D	E		F
	Gap Set = 3	TB Select = 1	EV Select		Permitted Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr		Red Lock
	C Serve Min	TB Min	EVA Delay		Yellow Lock
	Max Type	Ped Select=	EVA Hold		Vehicle Recall
		7-wire Select	EV-B Delay		Ped Recall
			EV-B Hold		Permitted Ped Ph's
			EV-C Delay		"A" Arrow
			EV-C Hold		"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay		Double Entry
Year			EV-D Hold		Max 2 Extension
Month	OL-A Grn=		EV Max Timer		Lag Phases
Date	OL-B Grn=		RR2 TRCLR		Red Rest
DOW	OL-C Grn=		EV Clr Tmr		Coord Walk
Hour	OL-D Grn=		EV DelayTimer		Max 3 Extension
Minute			RR Clr Timer		Yellow Start
Seconds	RAM ADD		EV Timer		First Serve

* - FOR INFO ONLY

PERMITTED PHASES

	LIGHTS								
	1	2	3	4	5	6	7	8	
0	1	2			5	6	7	8	0
1									1
2									2
3		2				6			3
4									4
5		2				6		8	5
6	1							8	6
7									7
8									8
9	1	2			5	6	7	8	9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E								8	E
F		2				6			F

OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-178-0.36

LOCATION SR 178(24th) AT OAK ST

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

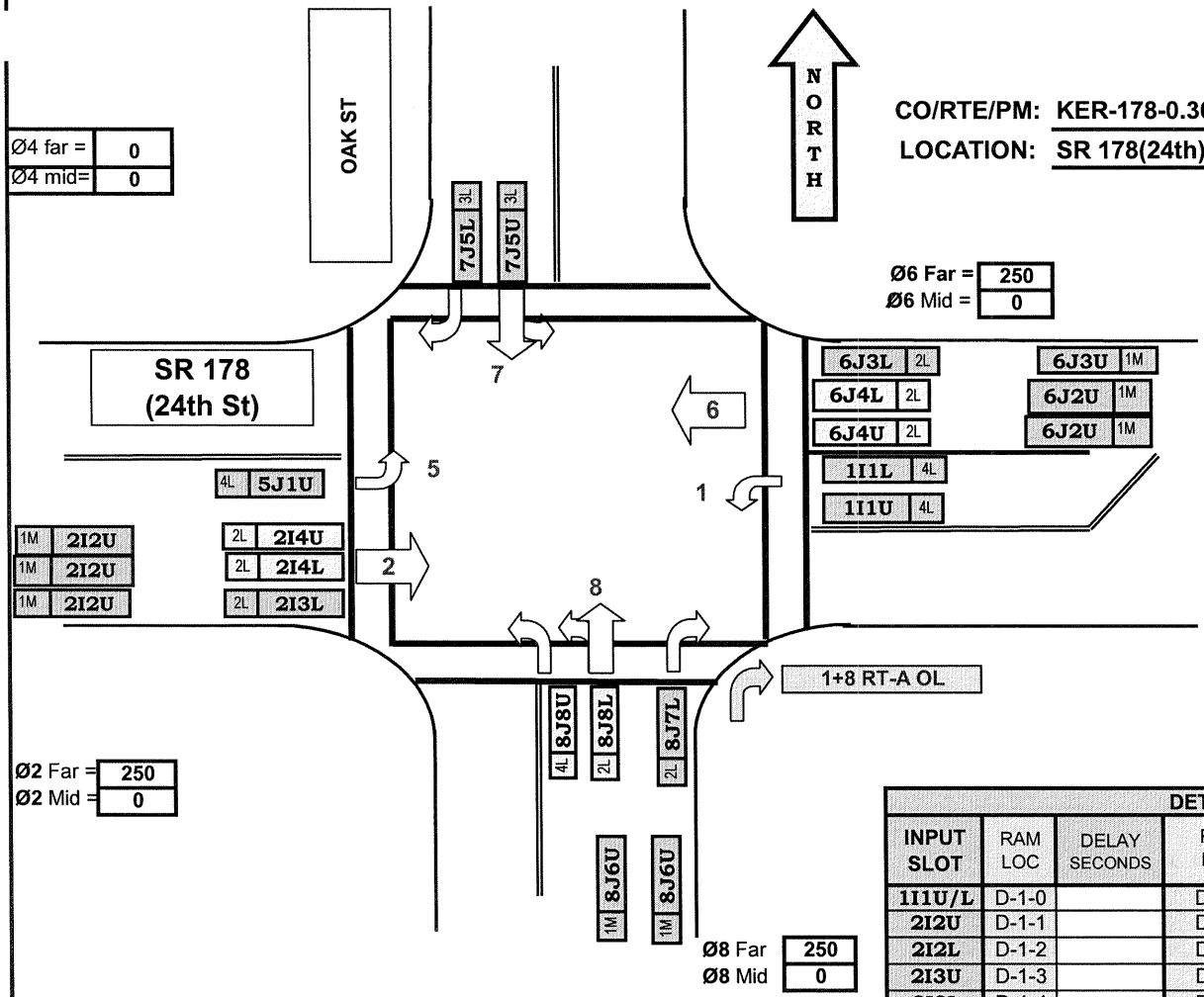
MASTER LOCATION: SR178-NB99OFF-PIERCE(B.O.BLVD)

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # **17**	Cycle Length	120	140	100	120	140	140	140			LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green	25	25	20	20	24	25	27			Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	5	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	5	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	5	8	3
4	Last CP	Ph. 4 Green										Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	5	8	4
5	Type Flash	Ph. 5 Green	9	10	9	9	8	9	9			Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	5	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	5	8	6
7	Trans CP	Ph. 7 Green	10	10	10	10	10	10	10			Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	5	8	7
8	Flash Start	Ph. 8 Green	17	24	14	20	21	25	20			Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	20	60	27	22	10	10	5			Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE				8	E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

4 PROM	SW. ON		LOCATION
1	2		
2	3		
	4		
	5	x	
	6		
	7		
	8		

DIP SWCH			FEATURES
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-178-0.36

LOCATION: SR 178(24th) AT OAK ST

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4	2.0	6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5	2.0	6J4U/L	D-2-5		D-4-5	2.0
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6	3.0	D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	3.0
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D	15.0	D-4-D	

CO\RTE\PM: KER-178-0.36 LOCATION: SR 178(24th) AT OAK ST

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2 LT TURN	Ph 2 Cnt&Ext T2-5&6 MAGS FAR	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2 NEAR	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10	
LOWER	Ph 1 Cnt&Ext T2-3&4 LT TURN	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12 RT TURN NEAR	Ph 2 Call&TP3 T4-3&4 NEAR	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12	

ISOLATORS

I11	I12	I13	I14
Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12

"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2 LT TURN	Ph 6 Cnt&Ext T3-5&6 MAGS FAR	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2 NEAR	Ph 7 Cnt&Ext T5-5&6 LT TURN NEAR	Ph 8 Cnt&Ext T5-9&10 MAGS FAR	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6 LT TURN NEAR	Ph 5 Cnt&Ext T7-9&10	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4 NEAR	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4 RT NEAR	Ph 8 Call&TP3 T7-7&8 NEAR	Ph 7 Cnt&Ext T7-11&12 NEAR	

J11	J12	J13	J14
T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: KER-178-0.36 **LOCATION:** SR 178(24th) AT OAK ST

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1		REASSIGNED FUNCTION FOR 2I3L AND 8J7L TO CALL/TYPE 3 (7&8)
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL	YL			EX	CT	CA	T3			1	2	3	4	5	6	7	8	RL	YL			EX	CT	CA	T3
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*		7	8	4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*		7	8
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-178-0.36 **LOCATIONS:** SR 178(24th) AT OAK ST

CONTROL CODE "D"

	D	PHASE FLAG								E	PHASE FLAG								F	PHASE FLAG								
	MAX RECALL	1	2	3	4	5	6	7	8	MIN RECALL	1	2	3	4	5	6	7	8	PED RECALL	1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS								
		1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		1	2	3	4	5	6	7	8	E "NOT"	1	2	3	4	5	6	7	8	F "ON"	1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN	2	3	4	

4 wire settings

GDI MODEM						
UP		2		4		
DOWN	1		3		5	

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-178-0.36 LOCATION: SR 178(24th) AT OAK ST

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

INTERSECTION: 21&OAK 0336

Group Assignment: **California West**
Field Master Assignment: **NONE**
System Reference Number: **15**

N/S Street Name: **OAK ST**
E/W Street Name: **21st ST**

Notes:

Change Record					
Change	By	Date	Change	By	Date

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	3	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	1	<C/0+0+2>
Area Address	15	<C/0+0+3>
QuicNet Channel	COM7:	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>
All Red Start	5.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8	Row
	Phase Names ---->									
0	Ped Walk	0	7	0	7	0	7	0	7	0
1	Ped FDW	0	9	0	12	0	9	0	12	1
2	Min Green	4	4	4	4	4	4	4	4	2
3	Type 3 Disconnect	0	0	0	0	0	0	0	0	3
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4
5	Veh Extension	1.0	1.5	2.0	1.5	1.0	1.5	2.0	1.5	5
6	Max Gap	1.0	1.5	3.0	1.5	1.0	1.5	3.0	1.5	6
7	Min Gap	1.0	1.5	0.5	1.5	1.0	1.5	0.5	1.5	7
8	Max Limit	12	35	20	26	12	35	20	26	8
9	Max Limit 2	0	50	30	40	30	50	30	40	9
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0	A
B	PE Min Ped FDW	0	0	7	0	0	0	7	7	B
C	Cond Serv Check	0	0	10	0	0	0	10	10	C
D	Reduce Every	0.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0	D
E	Yellow Change	3.0	3.9	3.0	3.6	3.0	3.9	3.0	3.6	E
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	F

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0
	Max Initial	Alternate Walk	Alternate FDW	Alternate Initial	Alternate Extension

Alternate Timing <C+0+F=1>

E	
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	2
EV-B Delay	0
EV-B Clear	2
EV-C Delay	0
EV-C Clear	2
EV-D Delay	0
EV-D Clear	2
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

F		Row
Permit	12_456__	0
Red Lock	_____	1
Yellow Lock	_____	2
Min Recall	_2___6__	3
Ped Recall	_____	4
View Set Peds	- - - - -	5
Rest In Walk	_____	6
Red Rest	_____	7
Dual Entry	_____	8
Max Recall	_____	9
Soft Recall	_____	A
Max 2	_____	B
Cond. Service	_____	C
Man Cntrl Calls	_____	D
Yellow Start	___4____	E
First Phases	_2___6__	F

Phase Functions <C+0+F=1>

Row	Column Numbers ---->	Overlap 1	2	3	4	5	6	7	8
	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Overlap Assignments <C+0+E=29>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Extended Status
6 = International Ped
7 = Flash - Clear Outputs
8 = Split Ring

Extra 2 Flags
1 = AWB During Initial
2 = LMU Installed
3 = Disable Min Walk
4 = QuicNet/4 System
5 = Ignore P/P on EV
6 =
7 = Reserved
8 =

Row		C
0	EV-A	0
1	EV-B	0
2	EV-C	0
3	EV-D	0
4	RR-1 *	- - -
5	RR-2 *	- - -
6	SE-1	0
7	SE-2	0

Preempt Priority <C+0+E=125>
(* RR-1 is always Highest, and RR-2 is always Second Highest)

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

Configuration <C+0+E=125>

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	12345678
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

Configuration <C+0+E=125>

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12345678
Sequential Timing	12345678
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reservice	2 6
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	
Start-up Ped Calls	

Specials <C+0+F=2>

Flash to PE & PE Non-Lock
1 = EV A 5 = RR 1
2 = EV B 6 = RR 2
3 = EV C 7 = SE 1
4 = EV D 8 = SE 2

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	2
Phase 1	10
Phase 2	10
Phase 3	10
Phase 4	10
Phase 5	10
Phase 6	10
Phase 7	10
Phase 8	10

Coordination Transition Minimums <C+0+C=5>

Coord Extra
1 = Programmed WALK Time for Sync Phases
2 = Always Terminate Sync Phase Peds

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name ---->										
0	Cycle Length	108	100	108	0	100	100	100	100	100	0
1	Phase 1 - ForceOff	18	73	13	0	55	55	55	55	55	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	20	20	20	0	20	20	20	20	20	3
4	Phase 4 - ForceOff	45	55	57	0	40	40	40	40	40	4
5	Phase 5 - ForceOff	70	18	70	0	55	55	55	55	55	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	20	20	20	0	20	20	20	20	20	7
8	Phase 8 - ForceOff	40	40	40	0	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	43	22	39	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Perm 1 - End	5	5	0	15	15	15	15	15	15	D
E	Hold Release	255	255	255	255	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination - Bank 1 <C+0+C=1>

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

Sync Phases <C+0+C=1>

Row		Plan 1	2	3	4	5	6	7	8	9	Row
0	Ped Adjustment	0	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	16	11	11	0	0	0	0	0	0	1
2	Perm 2 - End	20	14	15	0	0	0	0	0	0	2
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0	3
4	Perm 3 - End	0	0	0	0	0	0	0	0	0	4
5	Reservice Time	0	0	0	0	0	0	0	0	0	5
6	Reservice Phases										6
7											7
8	Pretimed Phases										8
9	Max Recall										9
A	Perm 1 Veh Phase	1	5	1	12345678	12345678	12345678	12345678	12345678	12345678	A
B	Perm 1 Ped Phase				12345678	12345678	12345678	12345678	12345678	12345678	B
C	Perm 2 Veh Phase	4 8	1 4 8	4 8							C
D	Perm 2 Ped Phase	4 8	4 8	4 8							D
E	Perm 3 Veh Phase										E
F	Perm 3 Ped Phase										F

Coordination - Bank 2 <C+0+C=2>

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	1 4 6 8	1
2	Plan 2 - Lag	2 45 8	2
3	Plan 3 - Lag	1 4 6 8	3
4	Plan 4 - Lag	2 4 6 8	4
5	Plan 5 - Lag	2 4 6 8	5
6	Plan 6 - Lag	2 4 6 8	6
7	Plan 7 - Lag	2 4 6 8	7
8	Plan 8 - Lag	2 4 6 8	8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

Lag Phases <C+0+C=1>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set Monday	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	0	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	0	NOT-1	0	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	0	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	0	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

Assignable Inputs <C=0+E=126>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	0	NOT-1	0	TOD Out 1	0	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	0	OR-1	0	TOD Out 2	0	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	0	OR-2	0	TOD Out 3	0	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	0	OR-3	0	TOD Out 4	0	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	0	AND-1	0	TOD Out 5	0	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	0	AND-2	0	TOD Out 6	0	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	0	AND-3	0	TOD Out 7	0	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	0	NOT-2	0	TOD Out 8	0	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	0	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	0	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

Assignable Outputs <C=0+E=127>

Row	Column Numbers ----> / Phase Names ---->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 2 <C=0+F=2>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Row		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 3 <C=0+F=3>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Transition Type
0.X = Shortway
1.X = Lengthen
X.1 thru X.4 = Number of cycles when lengthing

Daylight Savings Date
If set to all zeros, standard dates will be used.

Low Priority
1 = Channel A
2 = Channel B
3 = Channel C
4 = Channel D

Transition Type	0.3	<C/5+1+9>

TBC Transition

Lag Hold Phases	1___5___	<C/5+1+A>

Coordinated Lag Hold Phases

Sync Output Time	0.0	<C/5+1+C>

7-Wire Master

Begin Month	4	<C/5+2+A>
Begin Week	1	<C/5+2+B>
End Month	10	<C/5+2+C>
End Week	5	<C/5+2+D>

Daylight Savings Time

Time B4 Yellow	0.0	<F/1+C+E>
Phase Number	0	<F/1+C+F>

Advance Warning Beacon - Sign 1

Time B4 Yellow	0.0	<F/1+D+E>
Phase Number	0	<F/1+D+F>

Advance Warning Beacon - Sign 2

Long Failure	0.7	<F/1+0+6>
Short Failure	0.7	<F/1+0+7>

Power Cycle Correction (Default = 0.7)

Min Time (seconds)	0	<F/1+0+8>

Min Green Before PE Force Off

Max Time (minutes)	2	<F/1+0+9>

Max Preempt Time Before Failure

Min Time (seconds)	0	<F/1+0+A>

Min Time Between Same Preempts
(Does Not Apply To Railroad Preempt)

Low Pri. Channel	_____	<E/125+C+8>

Disable Low Priority Channel

Column Numbers ---->	0	1	2	3	1	3
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		39	45_7_	_2_____	123	0.0	0.0
1		40	45_7_	_____6__	123	0.0	0.0
2		41	45_7_	____4___	123	0.0	0.0
3		42	45_7_	_____8__	123	0.0	0.0
4		43	45_7_	_2_____	123	0.0	0.0
5		44	45_7_	_____6__	123	0.0	0.0
6		45	45_7_	____4___	123	0.0	2.0
7		46	45_7_	_____8__	123	0.0	0.0
8		47	67_____	_2_____	123	0.0	0.0
9		48	67_____	_____6__	123	0.0	0.0
A		49	67_____	____4___	123	0.0	0.0
B		50	67_____	_____8__	123	0.0	0.0
C		55	45_7_	_____5__	123	0.0	0.0
D		56	45_7_	1_____	123	0.0	0.0
E		57	45_7_	_____7__	123	0.0	0.0
F		58	45_7_	_____3__	123	0.0	0.0

	4	5	6	7	2	4
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		59	45_7_	_____5__	123	0.0	0.0
1		60	45_7_	1_____	123	0.0	0.0
2		61	45_7_	_____7__	123	0.0	0.0
3		62	45_7_	___3____	123	0.0	0.0
4		63	45_7_	_2_____	123	0.0	0.0
5		64	45_7_	_____6__	123	0.0	0.0
6		65	45_7_	____4___	123	0.0	0.0
7		66	45_7_	_____8__	123	0.0	0.0
8		67	_2_____	_2_____	123	0.0	0.0
9		68	_2_____	_____6__	123	0.0	0.0
A		69	_2_____	____4___	123	0.0	0.0
B		70	_2_____	_____8__	123	0.0	0.0
C		76	45_7_	_2_____	123	0.0	0.0
D		77	45_7_	_____6__	123	0.0	0.0
E		78	45_7_	____4___	123	0.0	0.0
F		79	45_7_	_____8__	123	0.0	0.0

Detector Assignments <C+0+E=126> <C+0+D=0>

Detector Attributes
1 = Full Time Delay
2 = Ped Call
3 =
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

Det. Assignments
1 = Det. Set 1
2 = Det. Set 2
3 = Det. Set 3
4 =
5 =
6 = Failure - Min Recall
7 = Failure - Max Recall
8 = Report on Failure

Column Numbers ---->	Ped / Phase / Overlap 1	2	3	4	5	6	7	8	Row
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	0	0	0	0	0	0	0	0	5
Overlap Yellow	0	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

Redirect Phase Outputs <C+0+E=127>

Cabinet Type	0	<E/125+D+0>

Enable Redirection
(Enable Redirection = 30)

Max OFF (minutes)	255	<D/0+0+1>
Max ON (minutes)	255	<D/0+0+2>

Detector Failure Monitor

	D	Row
Output Port 1		0
Output Port 2		1
Output Port 3		2
Output Port 4		3
Output Port 5		4
Output Port 6		5
Output Port 7		6
		7

Dimming <C+0+E=125>

	D
Number of Digits	0
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

<C+0+C=5>

Dial-Back Telephone Number

Disable Alarms
1 = Stop Time
2 = Flash Sense
3 = Keyboard Entry
4 = Manual Plan
5 = Police Control
6 = External Alarm
7 = Detector Failure
8 =

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

Delay Logic Times
<C+0+D=0> (seconds)

Omit Alarm		<C/5+F+0>

Disable Alarm Reporting

Time	10	<C/5+C+0>

Redial Time (minutes)
(View Redial Timer at E/2+D+6)

Row	Time	Plan	Offset	Day of Week
0	07 . 00	1	A	_23456_
1	08 : 30	2	A	_23456_
2	16 : 15	3	A	_23456_
3	00 : 00	0	0	
4	18 : 30	E	A	_23456_
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct	Day of Week	Column 4 Phases/Bits
06 : 59	E	1234567	1
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=0.1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 8

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct	Holiday Type	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=0.2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 1 <C+0+E=27>

Notes:

0 <E/27+5+F>
Limited Service Interval

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 2 <C+0+E=28>

Notes:

0 <E/28+5+F>
Limited Service Interval

INTERSECTION: 19&OAK 0274

Group Assignment: **California West**
Field Master Assignment: **NONE**
System Reference Number: **16**

N/S Street Name: **OAK ST**
E/W Street Name: **19th ST**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	4	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	1	<C/0+0+2>
Area Address	16	<C/0+0+3>
QuicNet Channel	COM7:	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>
All Red Start	5.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	8	0	17	0	8	0	17
2	Min Green	4	10	0	4	4	10	0	4
3	Type 3 Disconnect	0	20	0	0	0	20	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	1.0	2.0	0.0	1.5	1.0	2.0	0.0	1.5
6	Max Gap	1.0	4.0	0.0	1.5	1.0	4.0	0.0	1.5
7	Min Gap	1.0	0.2	0.0	1.5	1.0	0.2	0.0	1.5
8	Max Limit	18	35	0	20	18	35	20	20
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	0.0	0.5	1.0	0.0	0.0	0.5	1.0	0.0
E	Yellow Change	3.0	3.9	3.0	3.6	3.0	3.9	3.0	3.6
F	Red Clear	1.0	0.5	1.0	1.0	1.0	0.5	1.0	1.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	2
EV-B Delay	0
EV-B Clear	2
EV-C Delay	0
EV-C Clear	2
EV-D Delay	0
EV-D Clear	2
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

Row		F
0	Permit	12_456_8
1	Red Lock	_____
2	Yellow Lock	_____
3	Min Recall	_2___6__
4	Ped Recall	_____
5	*View Set Peds*	- - - - -
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	___4___8
9	Max Recall	_____
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	___4___8
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers ---->	Overlap 1	2	3	4	5	6	7	8
	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Overlap Assignments <C+0+E=29>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Extended Status
6 = International Ped
7 = Flash - Clear Outputs
8 = Split Ring

Extra 2 Flags
1 = AWB During Initial
2 = LMU Installed
3 = Disable Min Walk
4 = QuicNet/4 System
5 = Ignore P/P on EV
6 =
7 = Reserved
8 =

	C
EV-A	0
EV-B	0
EV-C	0
EV-D	0
RR-1 *	- - -
RR-2 *	- - -
SE-1	0
SE-2	0

Preempt Priority <C+0+E=125>
(* RR-1 is always Highest, and RR-2 is always Second Highest)

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 8
C	EV-C Phases	1 6
D	EV-D Phases	4 8
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

Configuration <C+0+E=125>

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

Configuration <C+0+E=125>

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12345678
Sequential Timing	12345678
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reservice	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	
Start-up Ped Calls	

Specials <C+0+F=2>

Flash to PE & PE Non-Lock
1 = EV A 5 = RR 1
2 = EV B 6 = RR 2
3 = EV C 7 = SE 1
4 = EV D 8 = SE 2

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	2
Phase 1	10
Phase 2	10
Phase 3	10
Phase 4	10
Phase 5	10
Phase 6	10
Phase 7	10
Phase 8	10

Coordination Transition Minimums <C+0+C=5>

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name ---->										
0	Cycle Length	108	100	108	0	100	100	100	100	100	0
1	Phase 1 - ForceOff	23	64	22	0	55	55	55	55	55	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	0	0	0	0	20	20	20	20	20	3
4	Phase 4 - ForceOff	56	46	45	0	40	40	40	40	40	4
5	Phase 5 - ForceOff	23	18	22	0	55	55	55	55	55	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	0	0	0	0	20	20	20	20	20	7
8	Phase 8 - ForceOff	56	46	45	0	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	46	21	52	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Perm 1 - End	6	5	6	15	15	15	15	15	15	D
E	Hold Release	255	255	255	255	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination - Bank 1 <C+0+C=1>

Coord Extra
1 = Programmed WALK Time for Sync Phases
2 = Always Terminate Sync Phase Peds

Row		E	Row
			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

Sync Phases <C+0+C=1>

Row		1	2	3	4	5	6	7	8	9	Row
0	Ped Adjustment	0	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	8	16	8	0	0	0	0	0	0	1
2	Perm 2 - End	26	20	24	0	0	0	0	0	0	2
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0	3
4	Perm 3 - End	0	0	0	0	0	0	0	0	0	4
5	Reservice Time	0	0	0	0	0	0	0	0	0	5
6	Reservice Phases										6
7											7
8	Pretimed Phases										8
9	Max Recall										9
A	Perm 1 Veh Phase	1 5	5	1 5	12345678	12345678	12345678	12345678	12345678	12345678	A
B	Perm 1 Ped Phase	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	B
C	Perm 2 Veh Phase	4 8	1 4 8	4 8							C
D	Perm 2 Ped Phase	4 8	4 8	4 8							D
E	Perm 3 Veh Phase										E
F	Perm 3 Ped Phase										F

Coordination - Bank 2 <C+0+C=2>

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	1 45 8	1
2	Plan 2 - Lag	2 45 8	2
3	Plan 3 - Lag	1 45 8	3
4	Plan 4 - Lag	2 4 6 8	4
5	Plan 5 - Lag	2 4 6 8	5
6	Plan 6 - Lag	2 4 6 8	6
7	Plan 7 - Lag	2 4 6 8	7
8	Plan 8 - Lag	2 4 6 8	8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

Lag Phases <C+0+C=1>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set Monday	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	0	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	0	NOT-1	0	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	0	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	0	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

Assignable Inputs <C=0+E=126>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	0	NOT-1	0	TOD Out 1	0	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	0	OR-1	0	TOD Out 2	0	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	0	OR-2	0	TOD Out 3	0	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	0	OR-3	0	TOD Out 4	0	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	0	AND-1	0	TOD Out 5	0	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	0	AND-2	0	TOD Out 6	0	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	0	AND-3	0	TOD Out 7	0	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	0	NOT-2	0	TOD Out 8	0	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	0	EV-A	0	Adv. Warn - 1	0	Low Priority A	231	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	0	EV-B	0	Adv. Warn - 2	0	Low Priority B	232	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	233	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	234	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

Assignable Outputs <C=0+E=127>

Row	Column Numbers ----> / Phase Names ---->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 2 <C=0+F=2>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Row		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 3 <C=0+F=3>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Transition Type
0.X = Shortway
1.X = Lengthen
X.1 thru X.4 = Number of cycles when lengthing

Daylight Savings Date
If set to all zeros, standard dates will be used.

Low Priority
1 = Channel A
2 = Channel B
3 = Channel C
4 = Channel D

Transition Type	0.3	<C/5+1+9>

TBC Transition

Lag Hold Phases	_____	<C/5+1+A>

Coordinated Lag Hold Phases

Sync Output Time	0.0	<C/5+1+C>

7-Wire Master

Begin Month	0	<C/5+2+A>
Begin Week	0	<C/5+2+B>
End Month	0	<C/5+2+C>
End Week	0	<C/5+2+D>

Daylight Savings Time

Time B4 Yellow	0.0	<F/1+C+E>
Phase Number	0	<F/1+C+F>

Advance Warning Beacon - Sign 1

Time B4 Yellow	0.0	<F/1+D+E>
Phase Number	0	<F/1+D+F>

Advance Warning Beacon - Sign 2

Long Failure	0.7	<F/1+0+6>
Short Failure	0.7	<F/1+0+7>

Power Cycle Correction (Default = 0.7)

Min Time (seconds)	0	<F/1+0+8>

Min Green Before PE Force Off

Max Time (minutes)	255	<F/1+0+9>

Max Preempt Time Before Failure

Min Time (seconds)	0	<F/1+0+A>

Min Time Between Same Preempts
(Does Not Apply To Railroad Preempt)

Low Pri. Channel	_____	<E/125+C+8>

Disable Low Priority Channel

Column Numbers ---->	0	1	2	3	1	3
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		39	45_7_	2	123	0.0	2.5
1		40	45_7_	6	123	0.0	2.5
2		41	45_7_	4	123	0.0	0.0
3		42	45_7_	8	123	0.0	0.0
4		43	45_7_	2	123	0.0	0.0
5		44	45_7_	6	123	0.0	0.0
6		45	45_7_	4	123	0.0	0.0
7		46	45_7_	8	123	0.0	0.0
8		47	67_	2	123	0.0	0.0
9		48	67_	6	123	0.0	0.0
A		49	67_	4	123	0.0	0.0
B		50	67_	8	123	0.0	0.0
C		55	45_7_	5	123	0.0	0.0
D		56	45_7_	1	123	0.0	0.0
E		57	45_7_	7	123	0.0	0.0
F		58	45_7_	3	123	0.0	0.0

	4	5	6	7	2	4
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		59	45_7_	5	123	0.0	0.0
1		60	45_7_	1	123	0.0	0.0
2		61	45_7_	7	123	0.0	0.0
3		62	45_7_	3	123	0.0	0.0
4		63	45_7_	2	123	0.0	0.0
5		64	45_7_	6	123	0.0	0.0
6		65	45_7_	4	123	0.0	0.0
7		66	45_7_	8	123	0.0	0.0
8		67	2	2	123	0.0	0.0
9		68	2	6	123	0.0	0.0
A		69	2	4	123	0.0	0.0
B		70	2	8	123	0.0	0.0
C		76	45_7_	2	123	0.0	0.0
D		77	45_7_	6	123	0.0	0.0
E		78	45_7_	4	123	0.0	0.0
F		79	45_7_	8	123	0.0	0.0

Detector Assignments <C+0+E=126> <C+0+D=0>

Detector Attributes
1 = Full Time Delay
2 = Ped Call
3 =
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

Det. Assignments
1 = Det. Set 1
2 = Det. Set 2
3 = Det. Set 3
4 =
5 =
6 = Failure - Min Recall
7 = Failure - Max Recall
8 = Report on Failure

Column Numbers ---->	Ped / Phase / Overlap 1	2	3	4	5	6	7	8	Row
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	0	0	0	0	0	0	0	0	5
Overlap Yellow	0	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

Redirect Phase Outputs <C+0+E=127>

Cabinet Type	0	<E/125+D+0>

Enable Redirection
(Enable Redirection = 30)

Max OFF (minutes)	0	<D/0+0+1>
Max ON (minutes)	0	<D/0+0+2>

Detector Failure Monitor

	D	Row
		0
Output Port 1		1
Output Port 2		2
Output Port 3		3
Output Port 4		4
Output Port 5		5
Output Port 6		6
Output Port 7		7

Dimming <C+0+E=125>

	D
Number of Digits	0
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

<C+0+C=5>

Dial-Back Telephone Number

Disable Alarms
1 = Stop Time
2 = Flash Sense
3 = Keyboard Entry
4 = Manual Plan
5 = Police Control
6 = External Alarm
7 = Detector Failure
8 =

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

Delay Logic Times
<C+0+D=0> (seconds)

Omit Alarm		<C/5+F+0>

Disable Alarm Reporting

Time	0	<C/5+C+0>

Redial Time (minutes)
(View Redial Timer at E/2+D+6)

Row	Time	Plan	Offset	Day of Week
0	07 . 00	1	A	_23456_
1	08 : 30	2	A	_23456_
2	16 : 15	3	A	_23456_
3	18 : 30	E	A	_23456_
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct	Day of Week	Column 4 Phases/Bits
06 : 59	E	1234567	1
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=0.1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 8

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct	Holiday Type	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=0.2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 1 <C+0+E=27>

Notes:

0 <E/27+5+F>

Limited Service Interval

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 2 <C+0+E=28>

Notes:

0 <E/28+5+F>

Limited Service Interval

INTERSECTION: 18&OAK 0248

Group Assignment: **California West**
Field Master Assignment: **NONE**
System Reference Number: **17**

N/S Street Name: **OAK ST**
E/W Street Name: **18th ST**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	5	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	1	<C/0+0+2>
Area Address	17	<C/0+0+3>
QuicNet Channel	COM7:	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>
All Red Start	5.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	12	0	10	0	15
2	Min Green	4	4	4	4	4	4	4	4
3	Type 3 Disconnect	0	15	0	15	0	15	0	20
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
5	Veh Extension	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.5
6	Max Gap	1.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0
7	Min Gap	1.0	0.2	0.5	0.2	0.5	0.2	0.5	1.5
8	Max Limit	12	30	20	20	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	0	0	7	0	7	0	7	7
C	Cond Serv Check	0	0	10	0	10	0	10	10
D	Reduce Every	0.0	0.5	1.0	0.5	1.0	0.5	1.0	1.0
E	Yellow Change	3.0	3.9	3.0	3.6	3.0	3.9	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0
	Max Initial	Alternate Walk	Alternate FDW	Alternate Initial	Alternate Extension

Alternate Timing <C+0+F=1>

E	
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	2
EV-B Delay	0
EV-B Clear	2
EV-C Delay	0
EV-C Clear	2
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

Row	F	
0	Permit	12_4_6__
1	Red Lock	_____
2	Yellow Lock	_____
3	Min Recall	_2___6__
4	Ped Recall	_____
5	*View Set Peds*	- - - - -
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	_____
9	Max Recall	_____
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	___4___
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers ---->	Overlap 1	2	3	4	5	6	7	8
	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases								
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases								
5	Neg Ped Phases								
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Overlap Assignments <C+0+E=29>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Extended Status
6 = International Ped
7 = Flash - Clear Outputs
8 = Split Ring

Extra 2 Flags
1 = AWB During Initial
2 = LMU Installed
3 = Disable Min Walk
4 = QuicNet/4 System
5 = Ignore P/P on EV
6 =
7 = Reserved
8 =

Row		C
0	EV-A	0
1	EV-B	0
2	EV-C	0
3	EV-D	0
4	RR-1 *	- - -
5	RR-2 *	- - -
6	SE-1	0
7	SE-2	0

Preempt Priority <C+0+E=125>
(* RR-1 is always Highest, and RR-2 is always Second Highest)

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	2
B	EV-B Phases	4
C	EV-C Phases	1 6
D	EV-D Phases	
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

Configuration <C+0+E=125>

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	8
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

Configuration <C+0+E=125>

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12345678
Sequential Timing	12345678
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reservice	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	
Start-up Ped Calls	

Specials <C+0+F=2>

Flash to PE & PE Non-Lock
1 = EV A 5 = RR 1
2 = EV B 6 = RR 2
3 = EV C 7 = SE 1
4 = EV D 8 = SE 2

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

	2
Phase 1	10
Phase 2	10
Phase 3	10
Phase 4	10
Phase 5	10
Phase 6	10
Phase 7	10
Phase 8	10

Coordination Transition Minimums <C+0+C=5>

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name ---->										
0	Cycle Length	108	100	108	0	100	100	100	100	100	0
1	Phase 1 - ForceOff	18	19	18	0	55	55	55	55	55	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	0	0	0	0	20	20	20	20	20	3
4	Phase 4 - ForceOff	42	43	43	0	40	40	40	40	40	4
5	Phase 5 - ForceOff	0	0	0	0	55	55	55	55	55	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	0	0	0	0	20	20	20	20	20	7
8	Phase 8 - ForceOff	0	0	0	0	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	43	4	40	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Perm 1 - End	5	5	5	15	15	15	15	15	15	D
E	Hold Release	255	255	255	255	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination - Bank 1 <C+0+C=1>

Coord Extra
1 = Programmed WALK Time for Sync Phases
2 = Always Terminate Sync Phase Peds

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync	2 6	4
Plan 5 - Sync	2 6	5
Plan 6 - Sync	2 6	6
Plan 7 - Sync	2 6	7
Plan 8 - Sync	2 6	8
Plan 9 - Sync	2 6	9
NEMA Sync		A
NEMA Hold		B
		C
		D
Coord Extra		E
		F

Sync Phases <C+0+C=1>

Row											Row
0	Ped Adjustment	0	0	5	0	0	0	0	0	0	0
1	Perm 2 - Start	16	17	16	0	0	0	0	0	0	1
2	Perm 2 - End	20	21	20	0	0	0	0	0	0	2
3	Perm 3 - Start	0	0	0	0	0	0	0	0	0	3
4	Perm 3 - End	0	0	0	0	0	0	0	0	0	4
5	Reservice Time	0	0	0	0	0	0	0	0	0	5
6	Reservice Phases										6
7											7
8	Pretimed Phases										8
9	Max Recall										9
A	Perm 1 Veh Phase	1	1	1	12345678	12345678	12345678	12345678	12345678	12345678	A
B	Perm 1 Ped Phase	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	B
C	Perm 2 Veh Phase	45	45	45							C
D	Perm 2 Ped Phase	4	4	4							D
E	Perm 3 Veh Phase										E
F	Perm 3 Ped Phase										F

Coordination - Bank 2 <C+0+C=2>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	1 4 6 8	1
Plan 2 - Lag	1 4 6 8	2
Plan 3 - Lag	1 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
External Lag		A
		B
		C
		D
		E
		F

Lag Phases <C+0+C=1>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set Monday	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	0	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	0	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	0	NOT-1	0	Spec. Event 2	0	8
9	OR-7 (b)	0	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	0	NOT-2	0	External Lag	0	9
A	OR-7 (c)	0	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	0	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	0	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

Assignable Inputs <C=0+E=126>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	0	NOT-1	0	TOD Out 1	0	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	0	OR-1	0	TOD Out 2	0	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	0	OR-2	0	TOD Out 3	0	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	0	OR-3	0	TOD Out 4	0	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	0	AND-1	0	TOD Out 5	0	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	0	AND-2	0	TOD Out 6	0	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	0	AND-3	0	TOD Out 7	0	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	0	NOT-2	0	TOD Out 8	0	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	0	EV-A	0	Adv. Warn - 1	0	Low Priority A	231	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	0	EV-B	0	Adv. Warn - 2	0	Low Priority B	232	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	233	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	234	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	0	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

Assignable Outputs <C=0+E=127>

Row	Column Numbers ----> / Phase Names ---->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 2 <C=0+F=2>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Row		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 3 <C=0+F=3>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Transition Type
0.X = Shortway
1.X = Lengthen
X.1 thru X.4 = Number of cycles when lengthing

Daylight Savings Date
If set to all zeros, standard dates will be used.

Low Priority
1 = Channel A
2 = Channel B
3 = Channel C
4 = Channel D

Transition Type	0.3	<C/5+1+9>

TBC Transition

Lag Hold Phases	1	<C/5+1+A>

Coordinated Lag Hold Phases

Sync Output Time	0.0	<C/5+1+C>

7-Wire Master

Begin Month	0	<C/5+2+A>
Begin Week	0	<C/5+2+B>
End Month	0	<C/5+2+C>
End Week	0	<C/5+2+D>

Daylight Savings Time

Time B4 Yellow	0.0	<F/1+C+E>
Phase Number	0	<F/1+C+F>

Advance Warning Beacon - Sign 1

Time B4 Yellow	0.0	<F/1+D+E>
Phase Number	0	<F/1+D+F>

Advance Warning Beacon - Sign 2

Long Failure	0.7	<F/1+0+6>
Short Failure	0.7	<F/1+0+7>

Power Cycle Correction (Default = 0.7)

Min Time (seconds)	0	<F/1+0+8>

Min Green Before PE Force Off

Max Time (minutes)	255	<F/1+0+9>

Max Preempt Time Before Failure

Min Time (seconds)	0	<F/1+0+A>

Min Time Between Same Preempts
(Does Not Apply To Railroad Preempt)

Low Pri. Channel		<E/125+C+8>

Disable Low Priority Channel

Column Numbers ---->	0	1	2	3	1	3
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		39	45_7	2	123	0.0	2.5
1		40	45_7	6	123	0.0	2.5
2		41	45_7	4	123	0.0	3.0
3		42	45_7	8	123	0.0	0.0
4		43	45_7	2	123	0.0	0.0
5		44	45_7	6	123	0.0	0.0
6		45	45_7	4	123	0.0	0.0
7		46	45_7	8	123	0.0	0.0
8		47	67	2	123	0.0	0.0
9		48	67	6	123	0.0	0.0
A		49	67	4	123	0.0	0.0
B		50	67	8	123	0.0	0.0
C		55	45_7	5	123	0.0	0.0
D		56	45_7	1	123	0.0	0.0
E		57	45_7	7	123	0.0	0.0
F		58	45_7	3	123	0.0	0.0

	4	5	6	7	2	4
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		59	45_7	5	123	0.0	0.0
1		60	45_7	1	123	0.0	0.0
2		61	45_7	7	123	0.0	0.0
3		62	45_7	3	123	0.0	0.0
4		63	45_7	2	123	0.0	0.0
5		64	45_7	6	123	0.0	0.0
6		65	45_7	4	123	0.0	0.0
7		66	45_7	8	123	0.0	0.0
8		67	2	2	123	0.0	0.0
9		68	2	6	123	0.0	0.0
A		69	2	4	123	0.0	0.0
B		70	2	8	123	0.0	0.0
C		76	45_7	2	123	0.0	0.0
D		77	45_7	6	123	0.0	0.0
E		78	45_7	4	123	10.0	0.0
F		79	45_7	8	123	0.0	0.0

Detector Assignments <C+0+E=126>

<C+0+D=0>

Detector Attributes
1 = Full Time Delay
2 = Ped Call
3 =
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

Det. Assignments
1 = Det. Set 1
2 = Det. Set 2
3 = Det. Set 3
4 =
5 =
6 = Failure - Min Recall
7 = Failure - Max Recall
8 = Report on Failure

Column Numbers ---->	Ped / Phase / Overlap 1	2	3	4	5	6	7	8	Row
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	0	0	0	0	0	0	0	0	5
Overlap Yellow	0	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

Redirect Phase Outputs <C+0+E=127>

Cabinet Type	0	<E/125+D+0>

Enable Redirection
(Enable Redirection = 30)

Max OFF (minutes)	0	<D/0+0+1>
Max ON (minutes)	0	<D/0+0+2>

Detector Failure Monitor

	D	Row
		0
Output Port 1		1
Output Port 2		2
Output Port 3		3
Output Port 4		4
Output Port 5		5
Output Port 6		6
Output Port 7		7

Dimming <C+0+E=125>

	D
Number of Digits	0
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

<C+0+C=5>

Dial-Back Telephone Number

Disable Alarms
1 = Stop Time
2 = Flash Sense
3 = Keyboard Entry
4 = Manual Plan
5 = Police Control
6 = External Alarm
7 = Detector Failure
8 =

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

Delay Logic Times
<C+0+D=0> (seconds)

Omit Alarm		<C/5+F+0>

Disable Alarm Reporting

Time	0	<C/5+C+0>

Redial Time (minutes)
(View Redial Timer at E/2+D+6)

Row	Time	Plan	Offset	Day of Week
0	07 . 00	1	A	_23456_
1	08 : 30	2	A	_23456_
2	16 : 15	3	A	_23456_
3	18 : 30	E	A	_23456_
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct	Day of Week	Column 4 Phases/Bits
06 : 59	E	1234567	1_____
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=0.1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 8

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct	Holiday Type	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=0.2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 1 <C+0+E=27>

Notes:

0 <E/27+5+F>

Limited Service Interval

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 2 <C+0+E=28>

Notes:

0 <E/28+5+F>

Limited Service Interval

INTERSECTION: OAK&TRUXTUN 2847

Group Assignment: **California West**
Field Master Assignment: **NONE**
System Reference Number: **18**

N/S Street Name: **OAK ST**
E/W Street Name: **TRUXTUN AVE**

Change Record					
Change	By	Date	Change	By	Date

Notes: _____

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	6	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	1	<C/0+0+2>
Area Address	18	<C/0+0+3>
QuicNet Channel	COM7:	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E>
Red Revert	5.0	<F/1+0+F>
All Red Start	5.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	13	0	18	0	13	0	18
2	Min Green	6	8	6	8	6	8	6	8
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
6	Max Gap	0.5	4.0	0.5	4.0	0.5	4.0	0.5	4.0
7	Min Gap	0.5	0.2	0.5	0.2	0.5	0.2	0.5	0.2
8	Max Limit	18	31	22	45	22	31	26	45
9	Max Limit 2	18	31	22	45	22	31	26	45
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5
E	Yellow Change	3.0	3.9	3.0	4.3	3.0	3.9	3.0	4.3
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	20	0	0	0	0.0
	Max Initial	Alternate Walk	Alternate FDW	Alternate Initial	Alternate Extension

Alternate Timing <C+0+F=1>

E	
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	2
EV-B Delay	0
EV-B Clear	2
EV-C Delay	0
EV-C Clear	2
EV-D Delay	0
EV-D Clear	2
RR-2 Delay	0
RR-2 Clear	0
View EV Delay	- - -
View EV Clear	- - -
View RR Delay	- - -
View RR Clear	- - -

Preempt Timing

Row	F	
0	Permit	12345678
1	Red Lock	_____
2	Yellow Lock	_____
3	Min Recall	_____
4	Ped Recall	_____
5	*View Set Peds*	- - - - -
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	_____
9	Max Recall	_____
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	1___5___
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers ---->	Overlap 1	2	3	4	5	6	7	8
	Overlap Name ---->								
0	Load Switch Number	0	0	0	0	0	0	0	0
1	Veh Set 1 - Phases	3							
2	Veh Set 2 - Phases								
3	Veh Set 3 - Phases								
4	Neg Veh Phases	2							
5	Neg Ped Phases	2							
6	Green Omit Phases								
7	Green Clear Omit Phs.								
8									
9									
A									
B									
C									
D	Green Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
F	Red Clear	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Overlap Assignments <C+0+E=29>

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 = Extended Status
6 = International Ped
7 = Flash - Clear Outputs
8 = Split Ring

Extra 2 Flags
1 = AWB During Initial
2 = LMU Installed
3 = Disable Min Walk
4 = QuicNet/4 System
5 = Ignore P/P on EV
6 =
7 = Reserved
8 =

Row		C
0	EV-A	0
1	EV-B	0
2	EV-C	0
3	EV-D	0
4	RR-1 *	- - -
5	RR-2 *	- - -
6	SE-1	0
7	SE-2	0

Preempt Priority <C+0+E=125>
(* RR-1 is always Highest, and RR-2 is always Second Highest)

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Flash to PE Circuits	
6	Flash Entry Phases	
7	Disable Yellow Range	
8	Disable Ovp Yel Range	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 3 5
F	IC Select (Interconnect)	2

Configuration <C+0+E=125>

	F
Ext. Permit 1 Phases	
Ext. Permit 2 Phases	
Exclusive Ped Assign	
Preempt Non-Lock	12345678
Ped for 2P Output	2
Ped for 6P Output	6
Ped for 4P Output	4
Ped for 8P Output	
Yellow Flash Phases	
Low Priority A Phases	
Low Priority B Phases	
Low Priority C Phases	
Low Priority D Phases	
Restricted Phases	
Extra 2 Config. Bits	4

Configuration <C+0+E=125>

	F
Fast Green Flash Phase	
Green Flash Phases	
Flashing Walk Phases	
Guaranteed Passage	
Simultaneous Gap Term	12345678
Sequential Timing	
Advance Walk Phases	
Delay Walk Phases	
External Recall	
Start-up Overlap Green	
Max Extension	
Inhibit Ped Reservice	
Semi-Actuated	
Start-up Overlap Yellow	
Start-up Vehicle Calls	12345678
Start-up Ped Calls	12345678

Specials <C+0+F=2>

Flash to PE & PE Non-Lock
1 = EV A 5 = RR 1
2 = EV B 6 = RR 2
3 = EV C 7 = SE 1
4 = EV D 8 = SE 2

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Row		2
0		
1	Phase 1	0
2	Phase 2	0
3	Phase 3	0
4	Phase 4	0
5	Phase 5	0
6	Phase 6	0
7	Phase 7	0
8	Phase 8	0

Coordination Transition Minimums <C+0+C=5>

Coord Extra
1 = Programmed WALK Time for Sync Phases
2 = Always Terminate Sync Phase Peds

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name ---->										
0	Cycle Length	108	100	108	0	100	100	100	100	100	0
1	Phase 1 - ForceOff	95	21	86	85	55	55	55	55	55	1
2	Phase 2 - ForceOff	12	0	12	16	0	0	0	0	0	2
3	Phase 3 - ForceOff	68	71	71	40	20	20	20	20	20	3
4	Phase 4 - ForceOff	37	51	49	64	40	40	40	40	40	4
5	Phase 5 - ForceOff	12	82	12	16	55	55	55	55	55	5
6	Phase 6 - ForceOff	0	21	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	27	71	36	38	20	20	20	20	20	7
8	Phase 8 - ForceOff	68	51	71	67	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	29	72	23	82	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Perm 1 - End	1	5	1	1	15	15	15	15	15	D
E	Hold Release	255	255	255	255	255	255	255	255	255	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

Coordination - Bank 1 <C+0+C=1>

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	NEMA Sync		A
B	NEMA Hold		B
C			C
D			D
E	Coord Extra		E
F			F

Sync Phases <C+0+C=1>

Row		1	2	3	4	5	6	7	8	9	Row
0	Ped Adjustment	7	0	0	4	0	0	0	0	0	0
1	Perm 2 - Start	10	19	10	10	0	0	0	0	0	1
2	Perm 2 - End	14	23	14	80	0	0	0	0	0	2
3	Perm 3 - Start	0	0	0	50	0	0	0	0	0	3
4	Perm 3 - End	0	0	0	80	0	0	0	0	0	4
5	Reservice Time	0	0	0	0	0	0	0	0	0	5
6	Reservice Phases										6
7											7
8	Pretimed Phases										8
9	Max Recall	8									9
A	Perm 1 Veh Phase	5	1	5	5	12345678	12345678	12345678	12345678	12345678	A
B	Perm 1 Ped Phase	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	12345678	B
C	Perm 2 Veh Phase	1 34 78	345 78	1 34 78	1 34 78						C
D	Perm 2 Ped Phase	4 8	4 8	4 8							D
E	Perm 3 Veh Phase										E
F	Perm 3 Ped Phase										F

Coordination - Bank 2 <C+0+C=2>

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	23 5 8	1
2	Plan 2 - Lag	1 3 67	2
3	Plan 3 - Lag	23 5 8	3
4	Plan 4 - Lag	2 45 8	4
5	Plan 5 - Lag	2 4 6 8	5
6	Plan 6 - Lag	2 4 6 8	6
7	Plan 7 - Lag	2 4 6 8	7
8	Plan 8 - Lag	2 4 6 8	8
9	Plan 9 - Lag	2 4 6 8	9
A	External Lag		A
B			B
C			C
D			D
E			E
F			F

Lag Phases <C+0+C=1>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Spec. Funct. 1	0	NOT-3	0	Max 2	0	Pretimed	0	Set Monday	0	Dial 2 (7-Wire)	0	Sim Term	0	0
1	Spec. Funct. 2	0	NOT-4	0	System Det 1	0	Plan 1	0	Ext. Perm 1	0	Dial 3 (7-Wire)	0	EV-A	71	1
2	Spec. Funct. 3	0	OR-4 (a)	0	System Det 2	0	Plan 2	0	Ext. Perm 2	0	Offset 1 (7-Wire)	0	EV-B	72	2
3	Spec. Funct. 4	0	OR-4 (b)	0	System Det 3	0	Plan 3	0	Dimming	0	Offset 2 (7-Wire)	0	EV-C	73	3
4	NAND-3 (a)	0	OR-5 (a)	0	System Det 4	0	Plan 4	0	Set Clock	0	Offset 3 (7-Wire)	0	EV-D	74	4
5	NAND-3 (b)	0	OR-5 (b)	0	System Det 5	0	Plan 5	0	Stop Time	82	Free (7-Wire)	0	RR-1	51	5
6	NAND-4 (a)	0	OR-6 (a)	0	System Det 6	0	Plan 6	0	Flash Sense	81	Flash (7-Wire)	0	RR-2	52	6
7	NAND-4 (b)	0	OR-6 (b)	0	System Det 7	0	Plan 7	0	Manual Enable	0	Excl. Ped Omit	0	Spec. Event 1	0	7
8	OR-7 (a)	80	Fig 3 Diamond	0	System Det 8	0	Plan 8	0	Man. Advance	0	NOT-1	0	Spec. Event 2	0	8
9	OR-7 (b)	53	Fig 4 Diamond	0	Max Inhibit (nema)	0	Plan 9	0	External Alarm	201	NOT-2	0	External Lag	0	9
A	OR-7 (c)	54	AND-4 (a)	0	Force A (nema)	0	DELAY-A	0	Phase Bank 2	0	OR-1 (a)	0	AND-1 (a)	0	A
B	OR-7 (d)	75	AND-4 (b)	0	Force B (nema)	0	DELAY-B	0	Phase Bank 3	0	OR-1 (b)	0	AND-1 (b)	0	B
C	OR-8 (a)	0	NAND-1 (a)	0	C.N.A. (nema)	0	DELAY-C	0	Overlap Set 2	0	OR-2 (a)	0	AND-2 (a)	0	C
D	OR-8 (b)	0	NAND-1 (b)	0	Hold (nema)	0	DELAY-D	0	Overlap Set 3	0	OR-2 (b)	0	AND-2 (b)	0	D
E	OR-8 (c)	0	NAND-2 (a)	0	Max Recall	0	DELAY-E	0	Detector Set 2	0	OR-3 (a)	0	AND-3 (a)	0	E
F	OR-8 (d)	0	NAND-2 (b)	0	Min Recall	0	DELAY-F	0	Detector Set 3	0	OR-3 (b)	0	AND-3 (b)	0	F

Assignable Inputs <C=0+E=126>

Row	Column 9		Column A		Column B		Column C		Column D		Column E		Column F		Row
0	Phase ON - 1	0	Preempt Fail	0	Flasher 0	0	Free	0	NOT-1	0	TOD Out 1	0	Dial 2 (7-Wire)	0	0
1	Phase ON - 2	0	Sp Evnt Out 1	0	Flasher 1	0	Plan 1	0	OR-1	0	TOD Out 2	0	Dial 3 (7-Wire)	0	1
2	Phase ON - 3	0	Sp Evnt Out 2	0	Fast Flasher	0	Plan 2	0	OR-2	0	TOD Out 3	0	Offset 1 (7-Wire)	0	2
3	Phase ON - 4	0	Sp Evnt Out 3	0	Fig 3 Diamond	0	Plan 3	0	OR-3	0	TOD Out 4	0	Offset 2 (7-Wire)	0	3
4	Phase ON - 5	0	Sp Evnt Out 4	0	Fig 4 Diamond	0	Plan 4	0	AND-1	0	TOD Out 5	0	Offset 3 (7-Wire)	0	4
5	Phase ON - 6	0	Sp Evnt Out 5	0			Plan 5	0	AND-2	0	TOD Out 6	0	Free (7-Wire)	0	5
6	Phase ON - 7	0	Sp Evnt Out 6	0			Plan 6	0	AND-3	0	TOD Out 7	0	Flash (7-Wire)	0	6
7	Phase ON - 8	0	Sp Evnt Out 7	0			Plan 7	0	NOT-2	0	TOD Out 8	0	Preempt	0	7
8	Ph. Check - 1	0	Sp Evnt Out 8	0	NOT-3	0	Plan 8	0	EV-A	0	Adv. Warn - 1	0	Low Priority A	0	8
9	Ph. Check - 2	0			NOT-4	0	Plan 9	0	EV-B	0	Adv. Warn - 2	0	Low Priority B	0	9
A	Ph. Check - 3	0	Detector Fail	0	OR-4	0	Spec. Funct. 3	0	EV-C	0	DELAY-A	0	Low Priority C	0	A
B	Ph. Check - 4	0	Spec. Funct. 1	0	OR-5	0	Spec. Funct. 4	0	EV-D	0	DELAY-B	0	Low Priority D	0	B
C	Ph. Check - 5	0	Spec. Funct. 2	0	OR-6	0	NAND-3	0	RR-1	0	DELAY-C	0			C
D	Ph. Check - 6	0	Central Control	0	AND-4	0	NAND-4	0	RR-2	0	DELAY-D	0			D
E	Ph. Check - 7	0	Excl. Ped DW	0	NAND-1	0	OR-7	201	Spec. Event 1	0	DELAY-E	0			E
F	Ph. Check - 8	0	Excl. Ped WK	0	NAND-2	0	OR-8	0	Spec. Event 2	0	DELAY-F	0			F

Assignable Outputs <C=0+E=127>

Row	Column Numbers ----> / Phase Names ---->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	4	4	4	4	4	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 2 <C=0+F=2>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Row		1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	15	0	15	0	15	0	15
2	Min Green	4	7	4	4	4	7	4	4
3	Type 3 Disconnect	0	20	0	20	0	20	0	20
4	Added per Vehicle	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
5	Veh Extension	2.0	4.0	2.0	2.5	2.0	4.0	2.0	2.5
6	Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	3.0	3.0
7	Min Gap	0.5	2.0	0.5	1.5	0.5	2.0	0.5	1.5
8	Max Limit	20	30	20	25	20	30	20	25
9	Max Limit 2	30	50	30	40	30	50	30	40
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	PE Min Ped FDW	7	7	7	7	7	7	7	7
C	Cond Serv Check	10	10	10	10	10	10	10	10
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0
F	Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Phase Timing - Bank 3 <C=0+F=3>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	0	0	0	0	0.0
Phase 2	0	0	0	0	0.0
Phase 3	0	0	0	0	0.0
Phase 4	0	0	0	0	0.0
Phase 5	0	0	0	0	0.0
Phase 6	0	0	0	0	0.0
Phase 7	0	0	0	0	0.0
Phase 8	0	0	0	0	0.0

Max Initial
Alternate Walk
Alternate FDW
Alternate Initial
Alternate Extension

Alternate Timing

Transition Type
0.X = Shortway
1.X = Lengthen
X.1 thru X.4 = Number of cycles when lengthing

Daylight Savings Date
If set to all zeros, standard dates will be used.

Low Priority
1 = Channel A
2 = Channel B
3 = Channel C
4 = Channel D

Transition Type	0.3	<C/5+1+9>

TBC Transition

Lag Hold Phases		<C/5+1+A>

Coordinated Lag Hold Phases

Sync Output Time	0.0	<C/5+1+C>

7-Wire Master

Begin Month	4	<C/5+2+A>
Begin Week	1	<C/5+2+B>
End Month	10	<C/5+2+C>
End Week	5	<C/5+2+D>

Daylight Savings Time

Time B4 Yellow	0.0	<F/1+C+E>
Phase Number	0	<F/1+C+F>

Advance Warning Beacon - Sign 1

Time B4 Yellow	0.0	<F/1+D+E>
Phase Number	0	<F/1+D+F>

Advance Warning Beacon - Sign 2

Long Failure	0.7	<F/1+0+6>
Short Failure	0.7	<F/1+0+7>

Power Cycle Correction (Default = 0.7)

Min Time (seconds)	0	<F/1+0+8>

Min Green Before PE Force Off

Max Time (minutes)	2	<F/1+0+9>

Max Preempt Time Before Failure

Min Time (seconds)	0	<F/1+0+A>

Min Time Between Same Preempts
(Does Not Apply To Railroad Preempt)

Low Pri. Channel		<E/125+C+8>

Disable Low Priority Channel

Column Numbers ---->	0	1	2	3	1	3
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		39	45_7_	2	123	0.0	2.5
1		40	45_7_	6	123	0.0	2.5
2		41	45_7_	4	123	0.0	2.5
3		42	45_7_	8	123	0.0	2.5
4		43	45_7_	2	123	0.0	0.0
5		44	45_7_	6	123	10.0	0.0
6		45	45_7_	4	123	10.0	0.0
7		46	45_7_	8	123	0.0	0.0
8		47	67	2	123	0.0	0.0
9		48	67	6	123	0.0	0.0
A		49	67	4	123	0.0	0.0
B		50	67	8	123	0.0	0.0
C		55	45_7_	5	123	0.0	0.0
D		56	45_7_	1	123	0.0	0.0
E		57	45_7_	7	123	0.0	0.0
F		58	45_7_	3	123	0.0	0.0

	4	5	6	7	2	4
Row	Detector Name	C1 Pin Number	Attributes	Phase(s)	Assign	Delay	Carry-over
0		59	45_7_	5	123	0.0	0.0
1		60	45_7_	1	123	0.0	0.0
2		61	45_7_	7	123	0.0	0.0
3		62	45_7_	3	123	0.0	0.0
4		63	45_7_	2	123	0.0	0.0
5		64	45_7_	6	123	0.0	0.0
6		65	45_7_	4	123	0.0	0.0
7		66	45_7_	8	123	0.0	0.0
8		67	2	2	123	0.0	0.0
9		68	2	6	123	0.0	0.0
A		69	2	4	123	0.0	0.0
B		70	2	8	123	0.0	0.0
C		76	45_7_	2	123	0.0	0.0
D		77	45_7_	6	123	0.0	0.0
E		78	45_7_	4	123	0.0	0.0
F		79	45_7_	8	123	0.0	0.0

Detector Assignments <C+0+E=126> <C+0+D=0>

Detector Attributes
1 = Full Time Delay
2 = Ped Call
3 =
4 = Count
5 = Extension
6 = Type 3
7 = Calling
8 = Alternate

Det. Assignments
1 = Det. Set 1
2 = Det. Set 2
3 = Det. Set 3
4 =
5 =
6 = Failure - Min Recall
7 = Failure - Max Recall
8 = Report on Failure

Column Numbers ---->	Ped / Phase / Overlap 1	2	3	4	5	6	7	8	Row
Walk	0	0	0	0	0	0	0	0	0
Don't Walk	0	0	0	0	0	0	0	0	1
Phase Green	0	0	0	0	0	0	0	0	2
Phase Yellow	0	0	0	0	0	0	0	0	3
Phase Red	0	0	0	0	0	0	0	0	4
Overlap Green	20	0	0	0	0	0	0	0	5
Overlap Yellow	38	0	0	0	0	0	0	0	6
Overlap Red	0	0	0	0	0	0	0	0	7

Redirect Phase Outputs <C+0+E=127>

Cabinet Type	30

<E/125+D+0>

Enable Redirection
(Enable Redirection = 30)

Max OFF (minutes)	20 <D/0+0+1>
Max ON (minutes)	7 <D/0+0+2>

Detector Failure Monitor

	D	Row
Output Port 1		0
Output Port 2		1
Output Port 3		2
Output Port 4		3
Output Port 5		4
Output Port 6		5
Output Port 7		6
		7

Dimming <C+0+E=125>

	D
Number of Digits	0
1 st Digit	0
2 ed Digit	0
3 ed Digit	0
4 th Digit	0
5 th Digit	0
6 th Digit	0
7 th Digit	0
8 th Digit	0
9 th Digit	0
10 th Digit	0
11 th Digit	0
12 th Digit	0
13 th Digit	0
14 th Digit	0
15 th Digit	0

<C+0+C=5>

Dial-Back Telephone Number

Disable Alarms
1 = Stop Time
2 = Flash Sense
3 = Keyboard Entry
4 = Manual Plan
5 = Police Control
6 = External Alarm
7 = Detector Failure
8 =

	B	Row
DELAY-A	0	A
DELAY-B	0	B
DELAY-C	0	C
DELAY-D	0	D
DELAY-E	0	E
DELAY-F	0	F

Delay Logic Times
<C+0+D=0> (seconds)

Omit Alarm	

<C/5+F+0>

Disable Alarm Reporting

Time	10

<C/5+C+0>

Redial Time (minutes)
(View Redial Timer at E/2+D+6)

BAKERSFIELD PUBLIC WORKS DEPARTMENT
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Row	Time	Plan	Offset	Day of Week
0	07 . 00	1	A	_23456_
1	08 : 30	2	A	_23456_
2	16 : 15	3	A	_23456_
3	18 : 30	E	A	_23456_
4	10 : 30	2	A	_____7
5	12 : 00	2	A	1____7
6	17 : 30	E	A	1____7
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 01	E	1234567	1
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=0.1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 8

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

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1501 TRUXTUN AVENUE

APPROVED
PUBLIC WORKS DEPARTMENT

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct	Holiday Type	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=0.2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 1 <C+0+E=27>

Notes:

0 <E/27+5+F>

Limited Service Interval

Row	6 Clear	7 Time	8 Ped Call	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0		0								
1		0								
2		0								
3		0								
4		0								
5		0								
6		0								
7		0								
8		0								
9		0								
A		0								
B		0								
C		0								
D		0								
E		0								
F		0								

Special Event Schedule -- Table 2 <C+0+E=28>

Notes:

0 <E/28+5+F>

Limited Service Interval

BAKERSFIELD

PUBLIC WORKS DEPARTMENT

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CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-178-1.71
Location: 178EB(23RD)@"M" ST

Card installed:
Signal installed:

Timing By: 0
Reviewed By: **Date:**

	Direction		EB		SB		DUMMY		NB
	Det. Dist.		180		45		0		45
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		14		9		14		9
2	Min Grn		22		8		22		8
3	Type III		20						
4	Add Intial								
5	Passage		4.9		2.0				2.0
6	Max Gap		6.8		2.8				2.8
7	Min Gap		2.0		2.0				1.0
8	Max 1		25		10		25		
9	Max 2								
A	Max 3								
B									
C	Red by		0.1						
D	Every		0.5						
E	Yellow		3.6		3.2		3.6		3.2
F	Red		2.0		2.0		2.0		1.0
*	*C/O w/mid*								
	Speed		35		25		35		25

9	C	D	E	F
	Gap Set = 3	TB Select = 1	EV Select	Permitted Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr	Red Lock
	C Serve Min 10	TB Min	EVA Delay	Yellow Lock
	Max Type	Ped Select=	EVA Hold	Vehicle Recall
		7-wire Select	EV-B Delay	Ped Recall
			EV-B Hold	Permitted Ped Ph's
			EV-C Delay	"A" Arrow
			EV-C Hold	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry
Year			EV-D Hold	Max 2 Extension
Month	OL-A Grn=		EV Max Timer	Lag Phases
Date	OL-B Grn=		RR2 TRCLR	Red Rest
DOW	OL-C Grn=		EV Clr Tmr	Coord Walk
Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension
Minute			RR Clr Timer	Yellow Start
Seconds	RAM ADD		EV Timer	First Serve

* - FOR INFO ONLY

OFFICE/MAINT/FIELD

PERMITTED PHASES

	LIGHTS								
	1	2	3	4	5	6	7	8	
0		2		4		6		8	0
1									1
2									2
3		2				6			3
4									4
5		2		4		6		8	5
6									6
7									7
8				4				8	8
9									9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4				8	E
F		2				6			F

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-178-1.71

LOCATION 178EB(23RD)@"M" ST

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION: 178WB(24TH)@"M" ST

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 9	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	14	20	15	30	22	15				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	14	20	15	30	22	15				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	21	21	21	21	26					Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

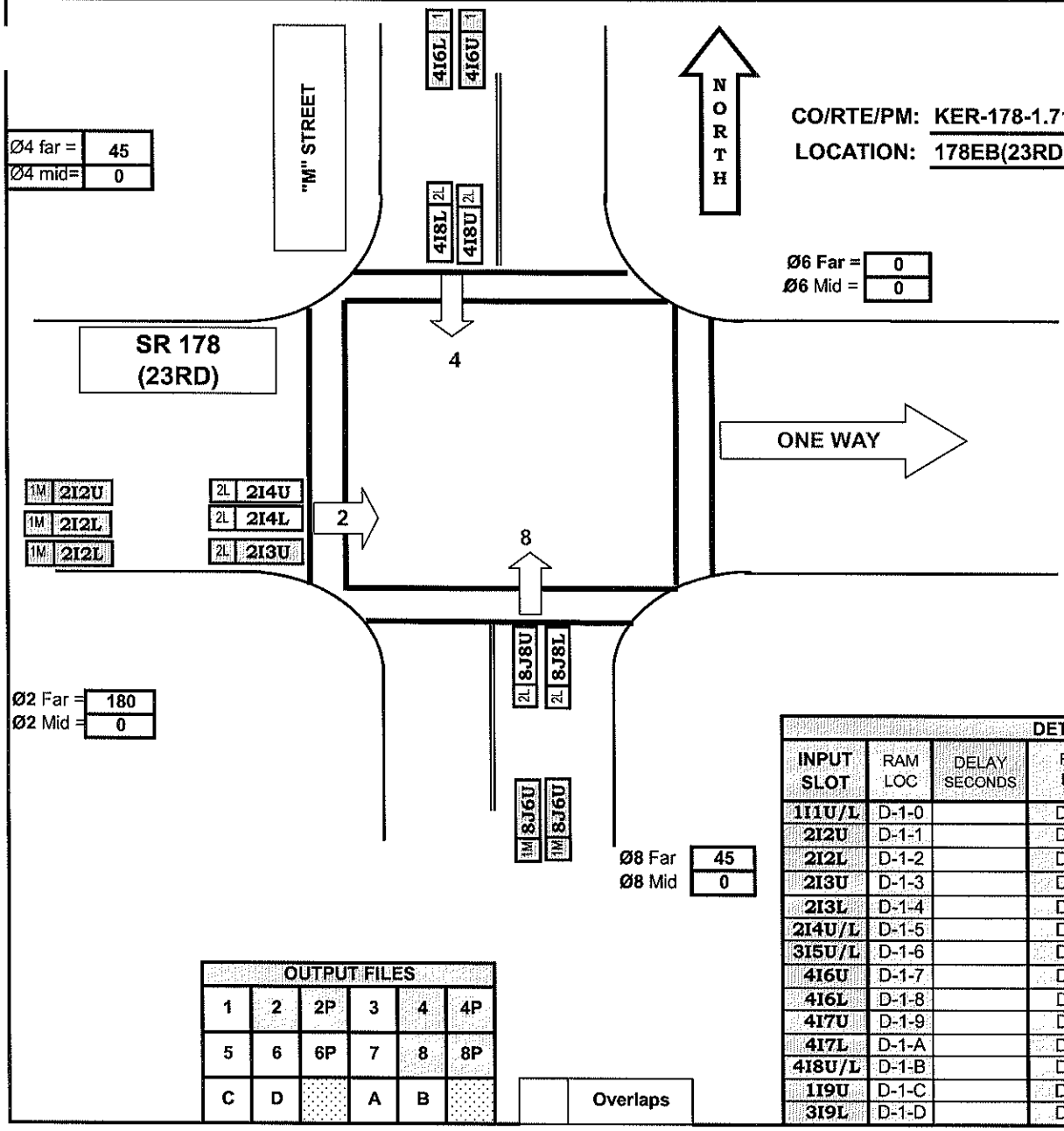
SW. ON		
4	1	X
1	2	
2	3	
	4	X
PROM	5	
	6	
	7	
	8	

LOCATION

DIP SW CH		
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-178-1.71

LOCATION: 178EB(23RD)@"M" ST

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-178-1.71 LOCATION: 178EB(23RD)@"M" ST

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10	
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12	
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12	

ISOLATORS

	I11	I12	I13	I14
UPPER	Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
	J11	J12	J13	J14
UPPER	T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: KER-178-1.71 **LOCATION:** 178EB(23RD)@"M" ST

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-178-1.71 **LOCATIONS:** 178EB(23RD)@"M" ST

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM						
UP		2		4		
DOWN	1		3		5	

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-178-1.71 LOCATION: 178EB(23RD)@"M" ST

CONTROL CODE "7"

	HR (HH)	MIN (MM)		ACT	ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0				E								
1				E								
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP		OFS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP		OFS	1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

Dummy — F - P A G E

CO/RTE/PM: KER\178\1.22

Location: 24th st @"F" street

Timing By: *IHAB ELZAANOUN*

Reviewed By: IRE Date: June 27, 2008

Card installed:

Signal installed:

	Direction		EB	NBLT	SB		WB		NB
	Det. Dist.		0		186		176		105
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		14		10		16		10
2	Min Grn		10	6	8		10		8
3	Type III		20		20		20		20
4	Add Intial								
5	Passage		0.0	2.0	5.1		4.8		2.9
6	Max Gap		0.0	2.0	7.0		6.6		4.0
7	Min Gap		2.0	2.0	2.0		2.0		2.0
8	Max 1		25	15	20		25		20
9	Max 2		35	25	30		35		30
A	Max 3								
B									
C	Red by		~~0.1~~		0.1		0.1		0.1
D	Every		~~1.3~~		0.4		0.6		1.1
E	Yellow		3.6	3.2	3.6		3.6		3.6
F	Red		1.0	0.5	1.0		1.0		1.0
*	*C/O w/mid*								
	Speed		35	*25*	35		35		35

9	C	D	E		F
	Gap Set = 3	TB Select = 1	EV Select	0	**Permitted** Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr		Red Lock
	C Serve Min	TB Min	EVA Delay		Yellow Lock
	Max Type	Ped Select=	EVA Hold	5	Vehicle Recall
		7-wire Select	EV-B Delay		Ped Recall
			EV-B Hold	5	**Permitted Ped Ph's**
			EV-C Delay		"A" Arrow
			EV-C Hold	5	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay		Double Entry
Year			EV-D Hold	5	Max 2 Extension
Month	OL-A Grn=		EV Max Timer		Lag Phases
Date	OL-B Grn=		RR2 TRCLR		Red Rest
DOW	OL-C Grn=		EV Clr Tmr		Coord Walk
Hour	OL-D Grn=		EV DelayTimer		Max 3 Extension
Minute			RR Clr Timer		Yellow Start
Seconds	RAM ADD		EV Timer		First Serve

PERMITTED PHASES								
LIGHTS								
1	2	3	4	5	6	7	8	
	2	3	4		6		8	0
								1
								2
	2				6			3
								4
	2		4		6		8	5
								6
								7
			4				8	8
	2	3	4		6		8	9
OBSERVATION ONLY								A
								B
								C
								D
			4				8	E
	2				6			F

* - FOR INFO ONLY — OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER\178\1.22

LOCATION 24th st @"F" street

If Master Controller, enter the number of Slaves at RAM location at D-0-0 =

MASTER LOCATION:

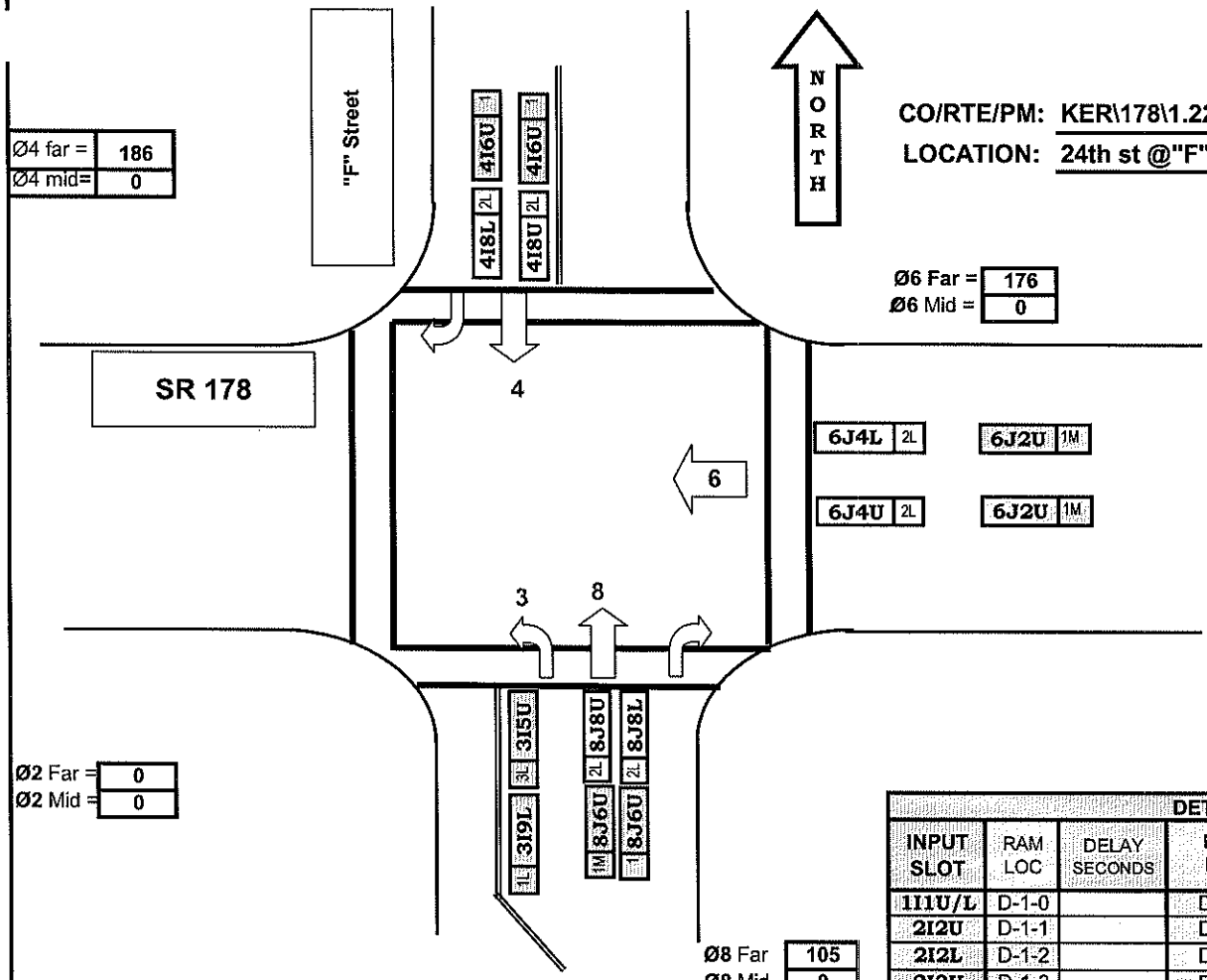
	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 4	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	Manual CP	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		QuicNet 7		Gapout CP 2 1	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green	8	10	9	11	9					Force Off Phase 3	Perm. Phase 3	Y-COORD "C"	"D"	Gapout CP 3 1	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	15	18	20	13	15	26				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4 1	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5 1	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	18	22	24	29	28					Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	22	22	23	24	29	28				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

PROM DIP SWITCH

SW. ON		
1		LOCATION
2		
3	x	
4		
5		
6		
7		
8		

1		FEATURES
2		
3		
4		
5		
6		
7		
8		

DETECTOR LAYOUT AND SETTINGS PAGE



332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER\178\1.22 LOCATION: 24th st @"F" street

DETECTOR ASSIGNMENTS

ISOLATORS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: KER\178\1.22 **LOCATION:** 24th st @"F" street

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER\178\1.22 **LOCATIONS:** 24th st @"F" street

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX RECALL 1									A
																			MAX RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	Ø2 PED OUTPUT		*							5
6	Ø6 PED OUTPUT						*			6
7	Ø4 PED OUTPUT				*					7
8	Ø8 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER\178\1.22 LOCATION: 24th st @"F" street

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-178-1.24
Location: 178EB(23RD)@"F" ST
Timing By: 0
Reviewed By: ARL **Date:** June 27, 2008

Card installed:
Signal installed:

	Direction		EB		SB		DUMMY	SBLT	NB						PERMITTED PHASES LIGHTS								
	Det. Dist.		149		156		0		118														
	Phase	1	2	3	4	5	6	7	8	9	C	D	E	F	1	2	3	4	5	6	7	8	
0	Walk		7		7		7		7		Gap Set = 3	TB Select = 1	EV Select	Permitted Veh. Ph's		2		4		6	7	8	0
1	D. Walk		14		10		14		10		Max Set = 2	TB Hour	RR1 TrClr	Red Lock									1
2	Min Grn		10		8		10	6	8		C Serve Min	TB Min	EVA Delay	Yellow Lock									2
3	Type III		20		20		20		20		Max Type	Ped Select=	EVA Hold	Vehicle Recall		2				6			3
4	Add Intial											7-wire Select	EV-B Delay	Ped Recall									4
5	Passage		4.1		4.3			2.0	3.2				EV-B Hold	Permitted Ped Ph's		2		4		6		8	5
6	Max Gap		5.6		5.9			2.0	4.4				EV-C Delay	"A" Arrow									6
7	Min Gap		2.0		2.0		2.0	2.0	2.0				EV-C Hold	"B" Arrow									7
8	Max 1		25		20		25	15	20	Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry				4				8	8
9	Max 2		35		30		35	15	30	Year			EV-D Hold	Max 2 Extension		2		4		6	7	8	9
A	Max 3									Month	OL-A Grn=		EV Max Timer	Lag Phases	OBSERVATION ONLY								A
B										Date	OL-B Grn=		RR2 TRCLR	Red Rest									B
C	Red by		0.1		0.1				0.1	DOW	OL-C Grn=		EV Clr Tmr	Coord Walk									C
D	Every		0.7		0.5				0.9	Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension									D
E	Yellow		3.6		3.6		3.6	3.2	3.6	Minute			RR Clr Timer	Yellow Start				4				8	E
F	Red		2.0		2.0		2.0	1.0	2.0	Seconds	RAM ADD		EV Timer	First Serve		2				6			F
*	*C/O w/mid*									* - FOR INFO ONLY				OFFICE/MAINT/FIELD									
	Speed		35		35		35	25	35														

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-178-1.24

LOCATION 178EB(23RD)@"F" ST

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION:

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 5	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	7	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	7	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	26	26	35	33	26	35				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	7	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	7	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green	6	8	12	11	10	10				Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	18	18	22	18	14	22				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	36	39	55	61	61	55				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

SW. ON		
4	1	X
1	2	
2	3	X
	4	
PROM	5	
	6	
	7	
	8	

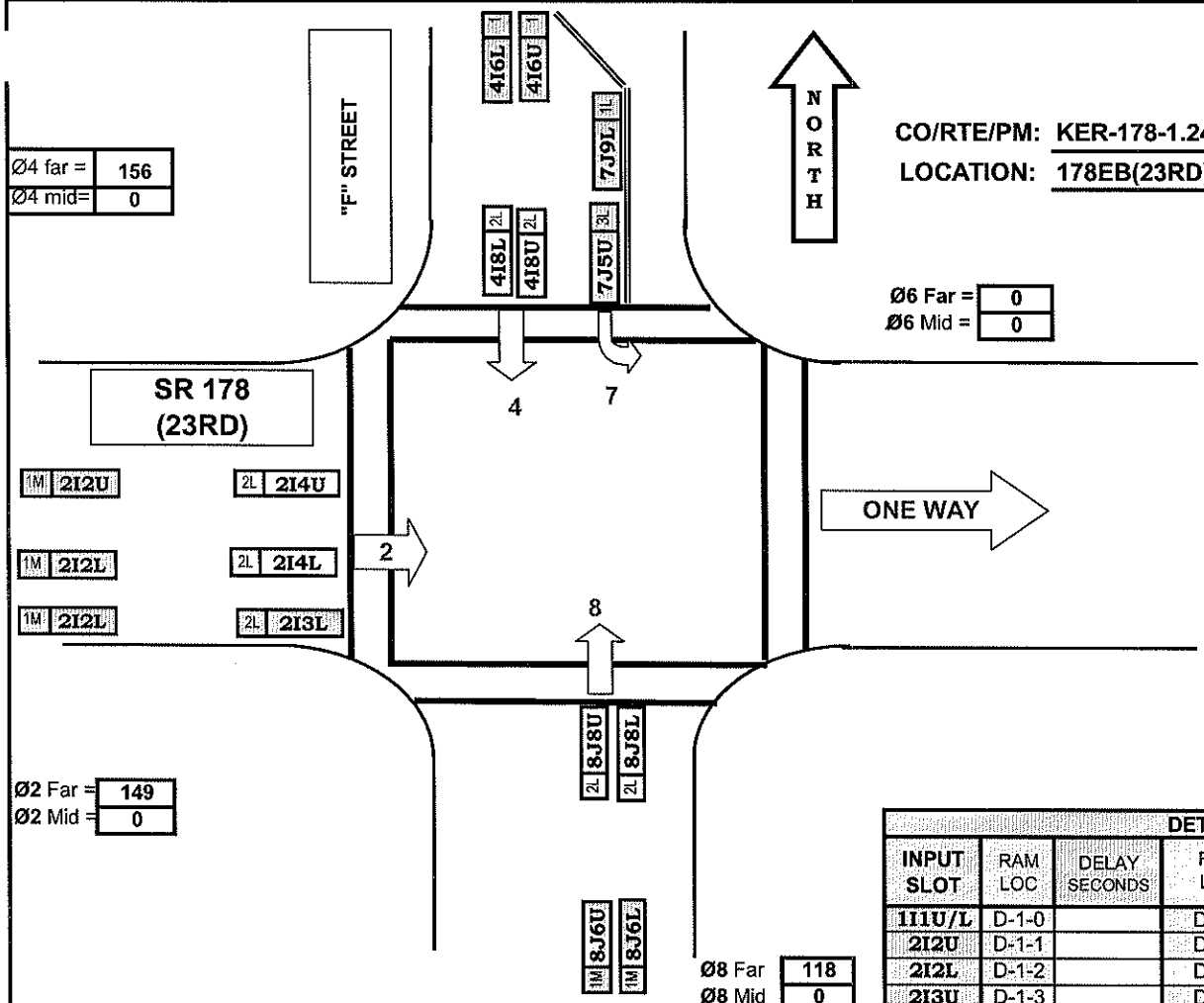
LOCATION

DIP SWCH

1		
2		
3		
4		
5		
6		
7		
8		

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-178-1.24

LOCATION: 178EB(23RD)@"F" ST

332 CABINET - INPUT FILE LAYOUT

SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES

1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"

INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B	2.0	8J8U/L	D-2-B		D-4-B	2.0
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-178-1.24 LOCATION: 178EB(23RD)@"F" ST

DETECTOR ASSIGNMENTS

ISOLATORS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6 MAGS FAR	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10 MAGS FAR	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8 MAGS FAR	Ph 2 Call&TP3 T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12 MAGS FAR	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6 SBLT	Ph 8 Cnt&Ext T5-9&10 MAGS FAR	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12 MAGS FAR	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: KER-178-1.24 **LOCATION:** 178EB(23RD)@"F" ST

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*		7	8	4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-178-1.24 **LOCATIONS:** 178EB(23RD)@"F" ST

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN	2	3	4	

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-178-1.24 LOCATION: 178EB(23RD)@"F" ST

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

- 1 = SIMULTANEOUS PHASE TERMINATION
- 2 = MAX 2
- 3 = MAX 3
- 4 = CONDITIONAL SERVICE (1st SELECT)
- 5 = CONDITIONAL SERVICE (2nd SELECT)
- 6 = ENERGIZE AUXILIARY OUTPUT
- 7 = ENERGIZE AUXILIARY OUTPUT
- 8 = ENERGIZE AUXILIARY OUTPUT
- 9 = MAX RECALL 1
- A = TRAFFIC ACTUATED MAX 2 OPERATION
- B = MAX RECALL 2
- C = YELLOW YIELD COORDINATION
- D = YELLOW YIELD COORDINATION
- E = FREE OPERATION
- F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP		OFS	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP		OFS	1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: Ker\178\1.35

Location: 24th st@"H" street

Timing By: *IHAB ELZAANOUN*

Reviewed By: IRE Date: June 27, 2008

Card installed:

Signal installed:

	Direction		EB		SB		WB		NB	9	C	D	E	F	PERMITTED PHASES LIGHTS 1	2	3	4	5	6	7	8	
	Det. Dist.		0		0		0		0														
	Phase	1	2	3	4	5	6	7	8														
0	Walk		7		7		7		7		Gap Set = 3	TB Select = 1	EV Select	**Permitted** Veh. Ph's		2		4		6		8	0
1	D. Walk		14		7		14		7		Max Set = 3	TB Hour	RR1 TrClr	Red Lock									1
2	Min Grn		22		13		22		12		C Serve Min 18	TB Min	EVA Delay	Yellow Lock									2
3	Type III		20		20		20		20		Max Type	Ped Select=	EVA Hold	Vehicle Recall		2				6			3
4	Add Intial											7-wire Select	EV-B Delay	Ped Recall									4
5	Passage		0.0		~~0.0~~ 2.0		0.0		~~0.0~~ 2.0				EV-B Hold	**Permitted Ped Ph's**		2		4		6		8	5
6	Max Gap		0.0		~~0.0~~ 2.0		0.0		~~0.0~~ 2.0				EV-C Delay	"A" Arrow									6
7	Min Gap		2.0		2.0		2.0		2.0				EV-C Hold	"B" Arrow									7
8	Max 1		~~25~~ 10		~~20~~ 10		~~25~~ 10		~~20~~ 10	Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry				4				8	8
9	Max 2		~~35~~		~~30~~		~~35~~		~~30~~	Year			EV-D Hold	Max 2 Extension		2		4		6		8	9
A	Max 3									Month	OL-A Grn=		EV Max Timer	Lag Phases	OBSERVATION ONLY								A
B										Date	OL-B Grn=		RR2 TRCLR	Red Rest									B
C	Red by		0.1		0.1		0.1		0.1	DOW	OL-C Grn=		EV Clr Tmr	Coord Walk									C
D	Every		-1.8		-1.2		-1.8		-1.2	Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension									D
E	Yellow		3.6		3.6		3.6		3.6	Minute			RR Clr Timer	Yellow Start				4				8	E
F	Red		~~1.0~~ 2.0		~~1.0~~ 2.0		~~1.0~~ 2.0		~~1.0~~ 2.0	Seconds	RAM ADD		EV Timer	First Serve		2				6			F
*	*C/O w/mid*									* - FOR INFO ONLY				OFFICE/MAINT/FIELD									
	Speed		35		35		35		35														

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM: Ker\178\1.35

LOCATION: 24th st@"H" street

If Master Controller, enter the number of Slaves at RAM location at D-0-0 =

MASTER LOCATION:

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 3	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	Manual CP	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		QuicNet 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	Y-COORD "C"	"D"	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	15	20	24	30	28	24				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	15	20	24	30	28	24				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	15	13	20	15	16	21				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

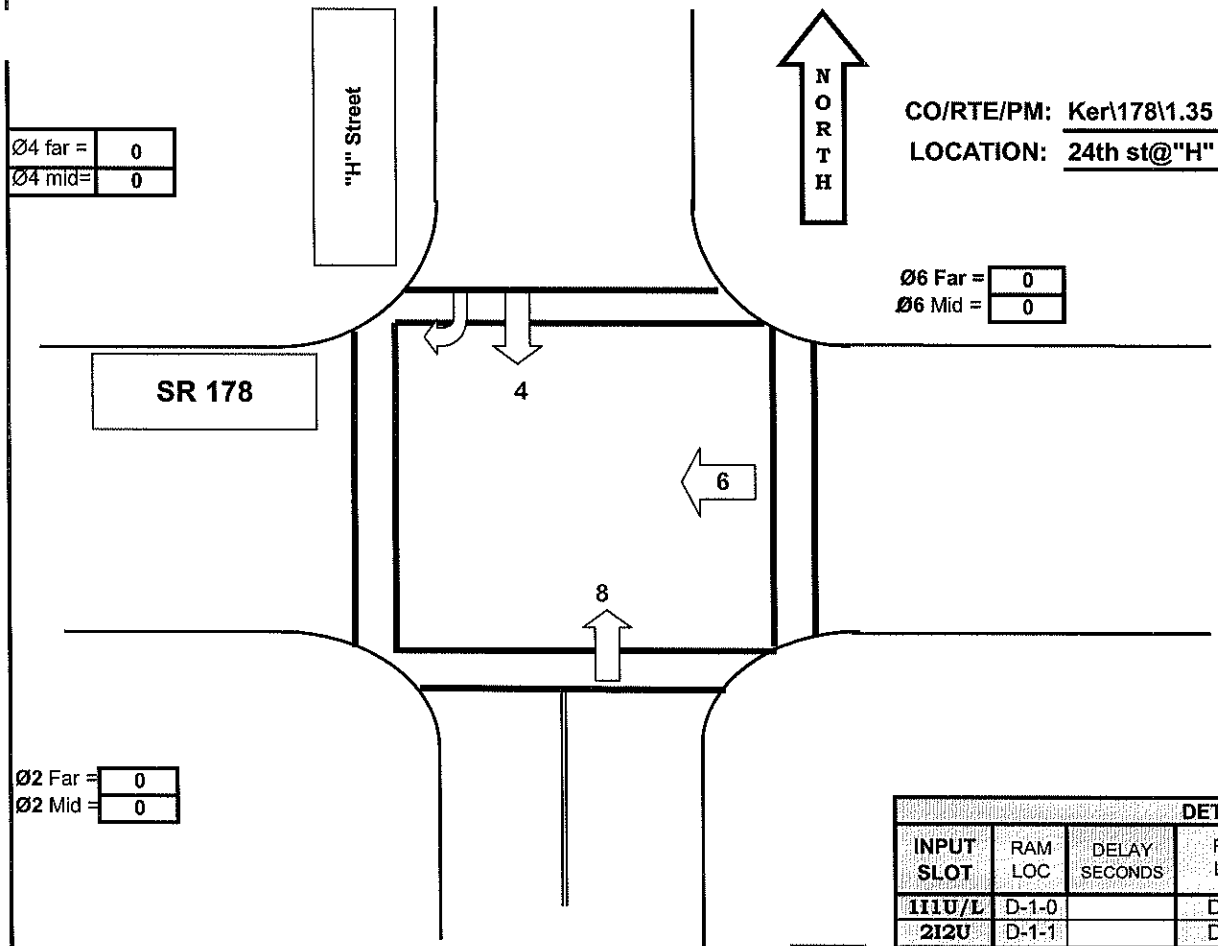
SW. ON		
4	1	x
1	2	x
2	3	
	4	
PROM	5	
	6	
	7	
	8	

LOCATION

DIP SWITCH		
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: Ker\178\1.35

LOCATION: 24th st@"H" street

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: Ker\178\1.35 LOCATION: 24th st@"H" street

DETECTOR ASSIGNMENTS

ISOLATORS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: Ker\178\1.35 **LOCATION:** 24th st@"H" street

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: Ker\178\1.35 **LOCATIONS:** 24th st@"H" street

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1				X				X	CP 1									CP 1								1
2	CP 2				X				X	CP 2									CP 2								2
3	CP 3				X				X	CP 3									CP 3								3
4	CP 4				X				X	CP 4									CP 4								4
5	CP 5				X				X	CP 5									CP 5								5
6	CP 6									CP 6									CP 6								6
7	CP 7									CP 7									CP 7								7
8	CP 8									CP 8									CP 8								8
9	CP 9									CP 9									CP 9								9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: Ker\178\1.35 LOCATION: 24th st@"H" street

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-178-1.37
Location: 178EB(23RD)@"H" ST
Timing By: 0
Reviewed By: ARL **Date:** June 27, 2008

Card installed:
Signal installed: 4/14/1965

	Direction		EB		SB		DUMMY		NB
	Det. Dist.		230		250		0		0
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		14		7		14		7
2	Min Grn		22		15		22		15
3	Type III		20		20		20		20
4	Add Intial								
5	Passage				2.0				2.0
6	Max Gap				2.0				2.0
7	Min Gap				2.0				2.0
8	Max 1		10		10		10		10
9	Max 2								
A	Max 3								
B									
C	Red by								
D	Every								
E	Yellow		3.5		3.2		3.5		3.2
F	Red		2.0		2.0		2.0		2.0
*	*C/O w/mid*								
	Speed		35		25		35		25

9	C	D	E	F
	Gap Set = 3	TB Select = 1	EV Select	**Permitted** Veh. Ph's
	Max Set = 3	TB Hour	RR1 TrClr	Red Lock
	C Serve Min 10	TB Min	EVA Delay	Yellow Lock
	Max Type	Ped Select=1	EVA Hold	Vehicle Recall
		7-wire Select	EV-B Delay	Ped Recall
			EV-B Hold	**Permitted Ped Ph's**
			EV-C Delay	"A" Arrow
			EV-C Hold	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry
Year			EV-D Hold	Max 2 Extension
Month	OL-A Grn=		EV Max Timer	Lag Phases
Date	OL-B Grn=		RR2 TRCLR	Red Rest
DOW	OL-C Grn=		EV Clr Tmr	Coord Walk
Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension
Minute			RR Clr Timer	Yellow Start
Seconds	RAM ADD		EV Timer	First Serve

PERMITTED PHASES

LIGHTS

1	2	3	4	5	6	7	8	
	2		4		6		8	0
								1
								2
								3
	2		4		6		8	4
	2		4		6		8	5
								6
								7
			4				8	8
	2		4		6		8	9
OBSERVATION ONLY								A
								B
	2				6			C
								D
			4				8	E
	2				6			F

* - FOR INFO ONLY

OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-178-1.37

LOCATION 178EB(23RD)@"H" ST

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION: 178WB(24TH)&"M" ST

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 6	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	16	24	25	33	27	25				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	16	24	25	33	27	25				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	55	57	71	75	75	71				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

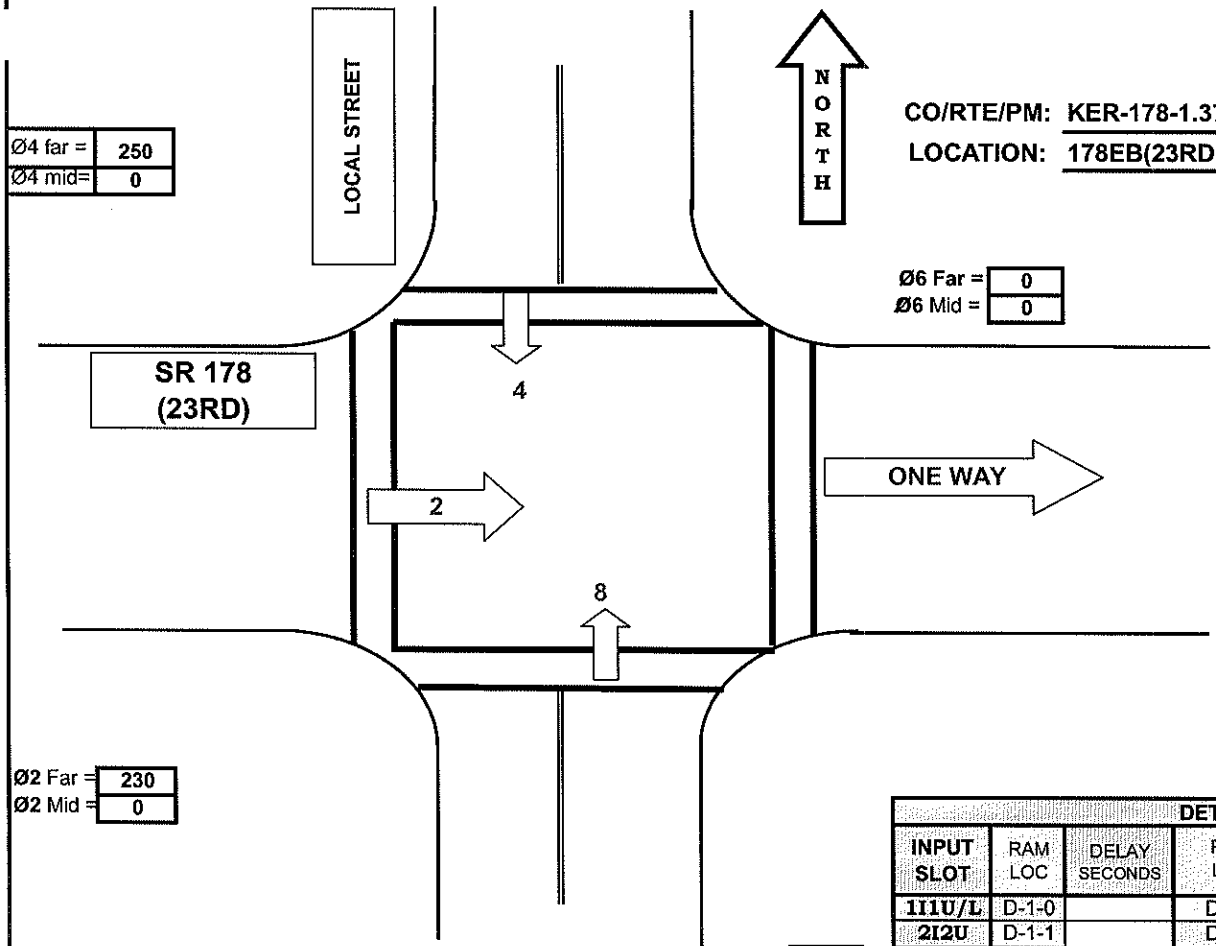
SW. ON		
4	1	
1	2	X
2	3	X
	4	
PROM	5	
	6	
	7	
	8	

LOCATION

DIP SWCH		
D	1	
I	2	
P	3	
	4	
S	5	
W	6	
C	7	
H	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



Ø4 far =	250
Ø4 mid=	0

CO/RTE/PM: KER-178-1.37

LOCATION: 178EB(23RD)@"H" ST

Ø6 Far =	0
Ø6 Mid =	0

Ø2 Far =	230
Ø2 Mid =	0

Ø8 Far	0
Ø8 Mid	0

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-178-1.37 LOCATION: 178EB(23RD)@"H" ST

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10	
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12	
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12	

ISOLATORS

	I11	I12	I13	I14
UPPER	Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
	J11	J12	J13	J14
UPPER	T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-178-1.37 **LOCATIONS:** 178EB(23RD)@"H" ST

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1				X				X	CP 1									CP 1								1
2	CP 2				X				X	CP 2									CP 2								2
3	CP 3				X				X	CP 3									CP 3								3
4	CP 4				X				X	CP 4									CP 4								4
5	CP 5				X				X	CP 5									CP 5								5
6	CP 6				X				X	CP 6									CP 6								6
7	CP 7									CP 7									CP 7								7
8	CP 8									CP 8									CP 8								8
9	CP 9									CP 9									CP 9								9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-178-1.37 LOCATION: 178EB(23RD)@"H" ST

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0				E								
1				E								
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

Dummy — F - P A G E

CO/RTE/PM: KER\178\1.48
Location: 24th st@Chester st
Timing By: *IHAB ELZAANOUN*
Reviewed By: IRE **Date:** June 27, 2008

Card installed:
Signal installed:

	Direction		EB	NBLT	SB		WB		NB
	Det. Dist.		0		190		180		114
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		17		10		18		10
2	Min Grn		10	6	8		10		8
3	Type III		20		20		20		20
4	Add Intial								
5	Passage		0.0	2.0	5.2		4.9		3.1
6	Max Gap		0.0	2.0	7.2		6.8		4.3
7	Min Gap		2.0	2.0	2.0		2.0		2.0
8	Max 1		25	15	20		25		20
9	Max 2		35	25	30		35		30
A	Max 3								
B									
C	Red by		0.1		0.1		0.1		0.1
D	Every		~~1.3~~		0.4		0.5		0.9
E	Yellow		3.6	3.2	3.6		3.6		3.6
F	Red		1.0	~~0.5~~ 1.0	1.0		1.0		1.0
*	*C/O w/mid*								
	Speed		35	*25*	35		35		35

	9	C	D	E		F
0		Gap Set = 3	TB Select = 1	EV Select	1	**Permitted** Veh. Ph's
1		Max Set = 2	TB Hour	RR1 TrClr		Red Lock
2		C Serve Min	TB Min	EVA Delay		Yellow Lock
3		Max Type	Ped Select=	EVA Hold	5	Vehicle Recall
4			7-wire Select	EV-B Delay		Ped Recall
5				EV-B Hold	5	**Permitted Ped Ph's**
6				EV-C Delay		"A" Arrow
7				EV-C Hold	5	"B" Arrow
8	Max Grn Tmr		Offset Seek = 1	EV-D Delay		Double Entry
9	Year			EV-D Hold	5	Max 2 Extension
A	Month	OL-A Grn=		EV Max Timer	60	Lag Phases
B	Date	OL-B Grn=		RR2 TRCLR		Red Rest
C	DOW	OL-C Grn=		EV Clr Tmr		Coord Walk
D	Hour	OL-D Grn=		EV DelayTimer		Max 3 Extension
E	Minute			RR Clr Timer		Yellow Start
F	Seconds	RAM ADD		EV Timer		First Serve

PERMITTED PHASES

	LIGHTS								
	1	2	3	4	5	6	7	8	
0		2	3	4		6		8	0
1									1
2									2
3		2				6			3
4									4
5		2		4		6		8	5
6									6
7									7
8				4				8	8
9		2	3	4		6		8	9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4				8	E
F		2				6			F

* - FOR INFO ONLY — OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER\178\1.48

LOCATION 24th st@Chester st

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION:

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 2	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	3	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	3	6	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	3	6	8	2
3	Current CP	Ph. 3 Green	8	8	9	6	8	0				Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	3	6	8	3
4	Last CP	Ph. 4 Green	17	18	20	20	15	30				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	3	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	3	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	22	24	23	31	27	30				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	0	0	4	1	3	4				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

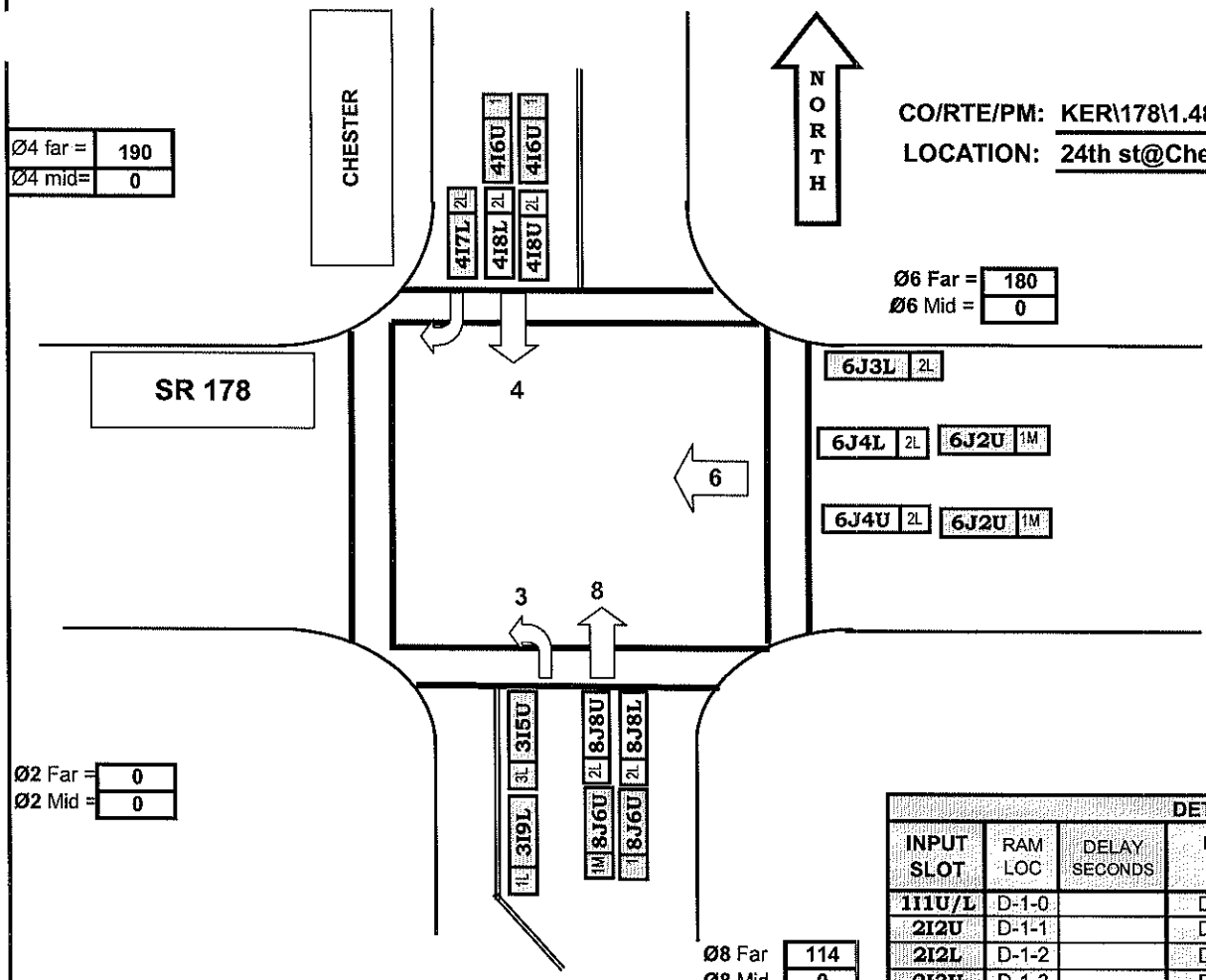
SW. ON		
1		LOCATION
2	x	
3		
4		
5		
6		
7		
8		

4 1 2 PROM

1		FEATURES
2		
3		
4		
5		
6		
7		
8		

DIP SWCH

DETECTOR LAYOUT AND SETTINGS PAGE



332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A	15.0	D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B	2.0	8J8U/L	D-2-B		D-4-B	2.0
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER\178\1.48 LOCATION: 24th st@Chester st

DETECTOR ASSIGNMENTS

ISOLATORS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*							*	*		

C-8 PROGRAM

CO\RTE\PM: KER\178\1.48 **LOCATIONS:** 24th st@Chester st

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER\178\1.48 LOCATION: 24th st@Chester st

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	06	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

- 1 = SIMULTANEOUS PHASE TERMINATION
- 2 = MAX 2
- 3 = MAX 3
- 4 = CONDITIONAL SERVICE (1st SELECT)
- 5 = CONDITIONAL SERVICE (2nd SELECT)
- 6 = ENERGIZE AUXILIARY OUTPUT
- 7 = ENERGIZE AUXILIARY OUTPUT
- 8 = ENERGIZE AUXILIARY OUTPUT
- 9 = MAX RECALL 1
- A = TRAFFIC ACTUATED MAX 2 OPERATION
- B = MAX RECALL 2
- C = YELLOW YIELD COORDINATION
- D = YELLOW YIELD COORDINATION
- E = FREE OPERATION
- F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-178-1.51
Location: 178EB(23RD)@CHESTER
Timing By: 0
Reviewed By: **Date:**

Card installed:
Signal installed:

	Direction		EB		SB		WB	SBLT	NB
	Det. Dist.		153		143		0		194
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		17		10		17		10
2	Min Grn		10		8		10	6	8
3	Type III		20		20		20		20
4	Add Intial								
5	Passage		4.2		3.9			2.0	5.3
6	Max Gap		5.8		5.4			2.0	7.3
7	Min Gap		2.0		2.0		2.0	2.0	2.0
8	Max 1		25		20		25	15	20
9	Max 2		35		30		35	15	30
A	Max 3								
B									
C	Red by		0.1		0.1				0.1
D	Every		0.7		0.6				0.4
E	Yellow		3.6		3.6		3.6	3.2	3.6
F	Red		2.0		2.0		2.0	1.0	2.0
*	*C/O w/mid*								
	Speed		35		35		35	*25*	35

9	C	D	E	F
	Gap Set = 3	TB Select = 1	EV Select	**Permitted** Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr	Red Lock
	C Serve Min	TB Min	EVA Delay	Yellow Lock
	Max Type	Ped Select=	EVA Hold	Vehicle Recall
		7-wire Select	EV-B Delay	Ped Recall
			EV-B Hold	**Permitted Ped Ph's**
			EV-C Delay	"A" Arrow
			EV-C Hold	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry
Year			EV-D Hold	Max 2 Extension
Month	OL-A Grn=		EV Max Timer	Lag Phases
Date	OL-B Grn=		RR2 TRCLR	Red Rest
DOW	OL-C Grn=		EV Clr Tmr	Coord Walk
Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension
Minute			RR Clr Timer	Yellow Start
Seconds	RAM ADD		EV Timer	First Serve

PERMITTED PHASES

	LIGHTS								
	1	2	3	4	5	6	7	8	
0		2		4		6	7	8	0
1									1
2									2
3		2				6			3
4									4
5		2		4		6		8	5
6									6
7									7
8				4				8	8
9		2		4		6	7	8	9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4				8	E
F		2				6			F

* - FOR INFO ONLY

OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-178-1.51

LOCATION 178EB(23RD)@CHESTER

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION: 178WB(24TH)@"M" ST

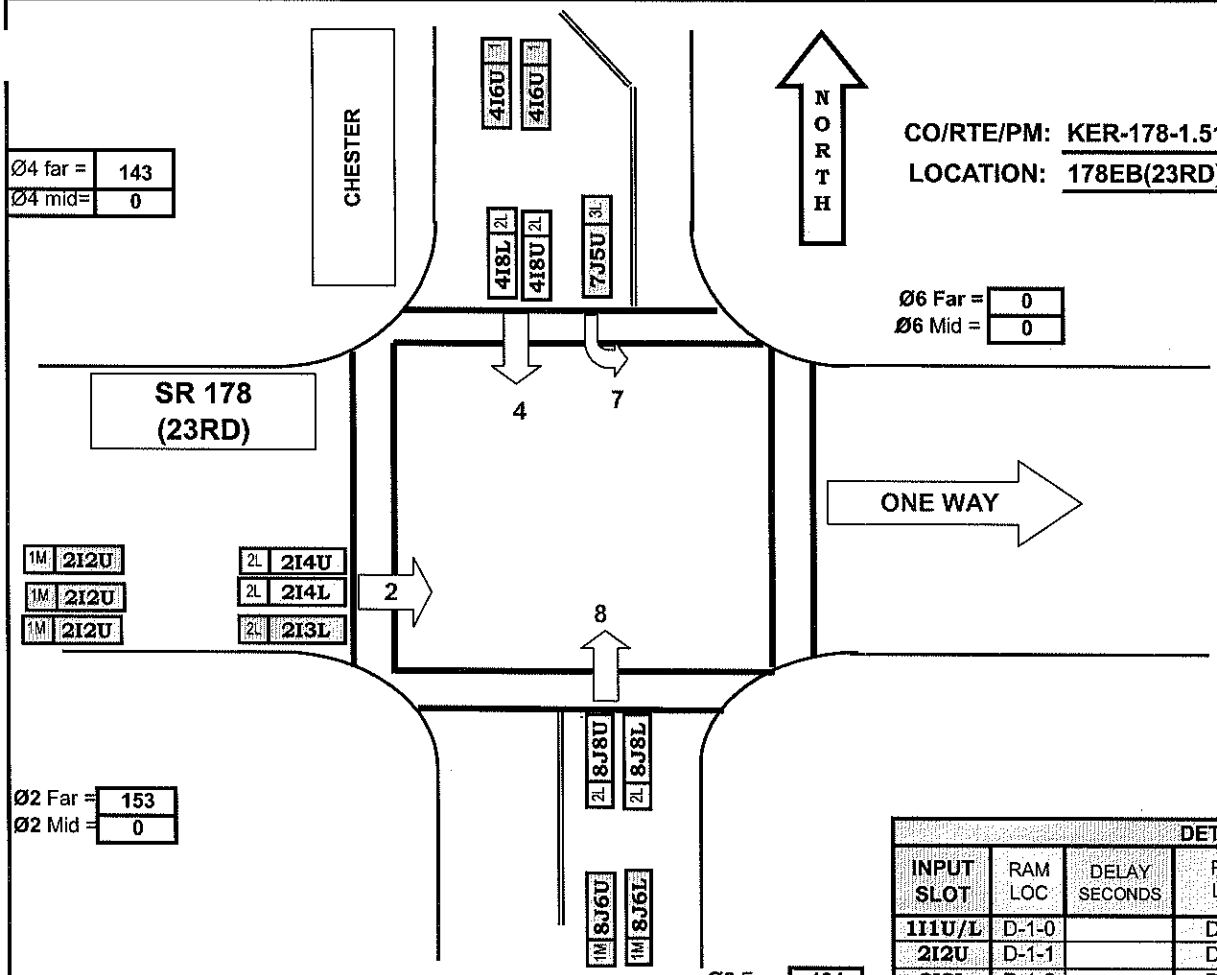
	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 7	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	7	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	7	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	21	24	29	33	26	26				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	7	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green	6	8	8	11	9	10				Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	15	16	20	18	13	16				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	60	67	79	86		79				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

SW. ON

4	1	X	LOCATION
1	2	X	
2	3	X	
	4		
PROM	5		
	6		
	7		
	8		

DIP SWCH	1		FEATURES
	2		
	3		
	4		
	5		
	6		
	7		
	8		

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-178-1.51

LOCATION: 178EB(23RD)@CHESTER

332 CABINET - INPUT FILE LAYOUT

SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES

1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"

INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B	2.0	8J8U/L	D-2-B		D-4-B	2.0
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-178-1.51 LOCATION: 178EB(23RD)@CHESTER

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6 MAG	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10 MAG	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10	
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Call&TP3 T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12	
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10 MAG	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12 MAG	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12	

ISOLATORS

	I11	I12	I13	I14
UPPER	Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
	J11	**J12**	**J13**	**J14**
UPPER	T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*		7	8	4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-178-1.51

LOCATIONS: 178EB(23RD)@CHESTER

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-178-1.51 LOCATION: 178EB(23RD)@CHESTER

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0				E								
1				E								
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E Dummy

CO/RTE/PM: KER\178\1.64

Location: 23rd st @ "L" street

Timing By: *IHAB ELZAANOUN*

Reviewed By: Date: June 27, 2008

Card installed:

Signal installed:

	Direction		EB		SB		WB		NB
	Det. Dist.		0		0		0		0
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		13		10		13		10
2	Min Grn		20		18		20		18
3	Type III		20		20		20		20
4	Add Intial								
5	Passage		0.0		~~0.0~~ 2.0		0.0		~~0.0~~ 2.0
6	Max Gap		0.0		0.0 2.0		0.0		0.0 2.0
7	Min Gap		2.0		2.0		2.0		2.0
8	Max 1		~~25~~ 10		~~20~~ 10		~~25~~ 10		~~20~~ 10
9	Max 2		~~35~~		~~30~~		~~35~~		~~30~~
A	Max 3								
B									
C	Red by		0.1		0.1		0.1		0.1
D	Every		~~-1.7~~		~~-1.4~~		~~-1.7~~		~~-1.4~~
E	Yellow		3.6		3.2		4.3		3.2
F	Red		~~1.0~~ 2.0		~~1.0~~ 2.0		~~1.0~~ 2.0		~~1.0~~ 2.0
*	*C/O w/mid*								
	Speed		35		25		45		25

9	C	D	E	F
	Gap Set = 3	TB Select = 1	EV Select	**Permitted** Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr	Red Lock
	C Serve Min	TB Min	EVA Delay	Yellow Lock
	Max Type	Ped Select=	EVA Hold	Vehicle Recall
		7-wire Select	EV-B Delay	Ped Recall
			EV-B Hold	**Permitted Ped Ph's**
			EV-C Delay	"A" Arrow
			EV-C Hold	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry
Year			EV-D Hold	Max 2 Extension
Month	OL-A Grn=		EV Max Timer	Lag Phases
Date	OL-B Grn=		RR2 TRCLR	Red Rest
DOW	OL-C Grn=		EV Clr Tmr	Coord Walk
Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension
Minute			RR Clr Timer	Yellow Start
Seconds	RAM ADD		EV Timer	First Serve

	PERMITTED PHASES								
	LIGHTS								
	1	2	3	4	5	6	7	8	
0		2		4		6		8	0
1									1
2									2
3		2				6			3
4									4
5		2		4		6		8	5
6									6
7									7
8				4				8	8
9		2		4		6		8	9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4				8	E
F		2				6			F

* - FOR INFO ONLY OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER\178\1.64

LOCATION 23rd st @ "L" street

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION:

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 0	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	Manual CP	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		QuicNet 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	Y-COORD "C"	"D"	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	18	19	20	30	23	25				Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green										Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	14	14	8	13	16	8				Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

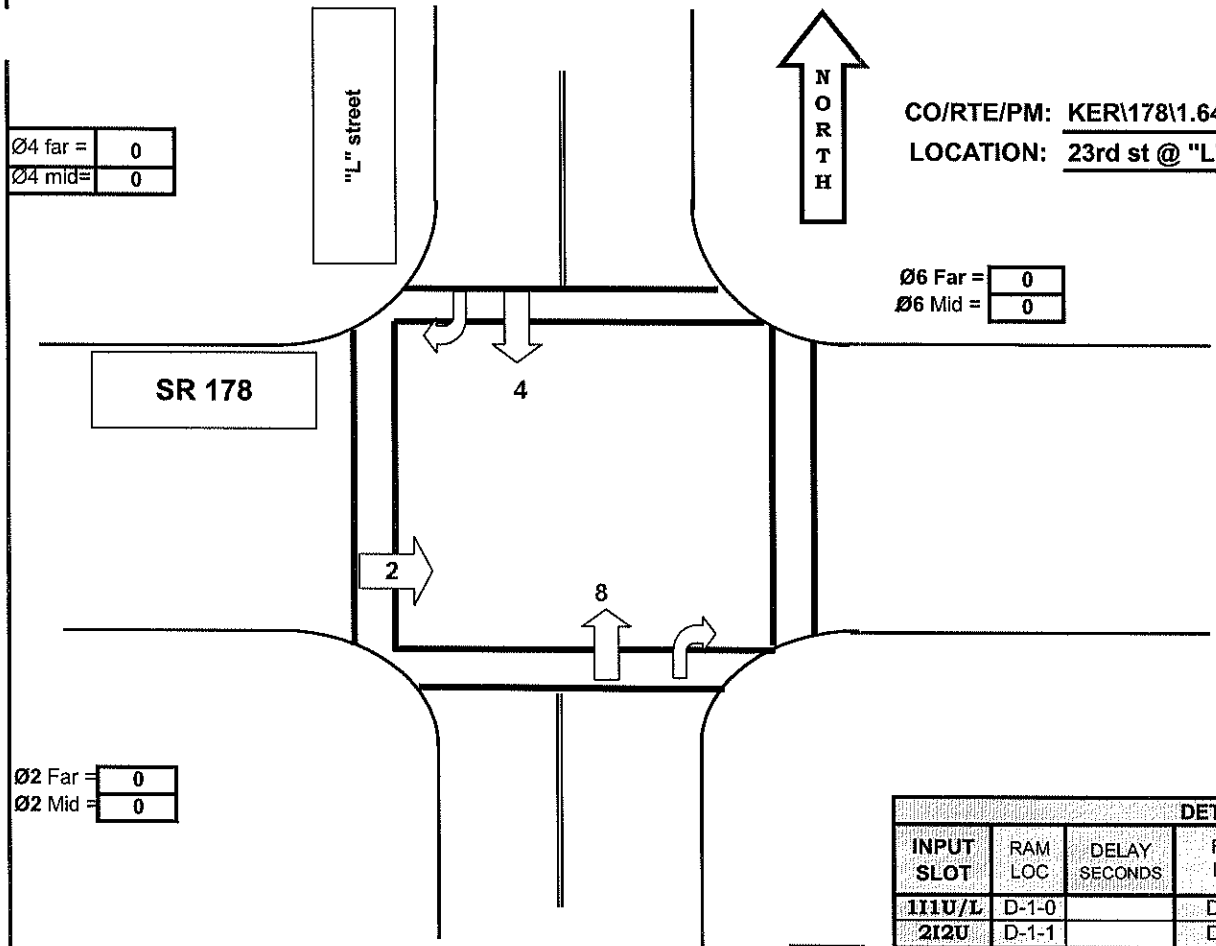
SW. ON		
4	1	
1	2	
2	3	
	4	
PROM	5	
	6	
	7	
	8	

LOCATION

DIP SWCH		
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER\178\1.64

LOCATION: 23rd st @ "L" street

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER\178\1.64 LOCATION: 23rd st @ "L" street

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10	
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12	
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12	

ISOLATORS

	I11	I12	I13	I14
UPPER	Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
	J11	J12	J13	J14
UPPER	T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: KER\178\1.64 **LOCATION:** 23rd st @ "L" street

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER\178\1.64 **LOCATIONS:** 23rd st @ "L" street

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1				X				X	CP 1									CP 1									1
2	CP 2				X				X	CP 2									CP 2									2
3	CP 3				X				X	CP 3									CP 3									3
4	CP 4				X				X	CP 4									CP 4									4
5	CP 5				X				X	CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER\178\1.64 LOCATION: 23rd st @ "L" street

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-178-1.69
Location: 178WB (24TH) @ "M" ST

Card installed:
Signal installed:

Timing By: O
Reviewed By: ARL **Date:** June 27, 2008

	Direction		EB		SB		WB		NB
	Det. Dist.		0		45		407		45
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		7
1	D. Walk		14		9		14		9
2	Min Grn		22		8		22		8
3	Type III								
4	Add Intial								
5	Passage				2.0		8.7		2.0
6	Max Gap				3.0		14.1		3.0
7	Min Gap				2.0		2.0		2.0
8	Max 1		25		20		25		20
9	Max 2		35		30		35		30
A	Max 3								
B									
C	Red by				0.1		0.1		0.1
D	Every				2.4		0.3		2.4
E	Yellow		3.5		3.5		3.6		3.5
F	Red		2.0		2.0		2.0		2.0
*	*C/O w/mid*						2.4		
	Speed		35		25		35		25

9	C	D	E	F
	Gap Set = 3	TB Select = 1	EV Select	**Permitted** Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr	Red Lock
	C Serve Min	TB Min	EVA Delay	Yellow Lock
	Max Type	Ped Select=	EVA Hold	Vehicle Recall
		7-wire Select	EV-B Delay	Ped Recall
			EV-B Hold	**Permitted Ped Ph's**
			EV-C Delay	"A" Arrow
			EV-C Hold	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry
Year			EV-D Hold	Max 2 Extension
Month	OL-A Grn=		EV Max Timer	Lag Phases
Date	OL-B Grn=		RR2 TRCLR	Red Rest
DOW	OL-C Grn=		EV Clr Tmr	Coord Walk
Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension
Minute			RR Clr Timer	Yellow Start
Seconds	RAM ADD		EV Timer	First Serve

PERMITTED PHASES

	LIGHTS								
	1	2	3	4	5	6	7	8	
0		2		4		6		8	0
1									1
2									2
3		2				6			3
4									4
5		2		4		6		8	5
6									6
7									7
8				4				8	8
9		2		4		6		8	9
A	OBSERVATION ONLY								A
B									B
C									C
D									D
E				4				8	E
F		2				6			F

* - FOR INFO ONLY

OFFICE/MAINT/FIELD

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-178-1.69

LOCATION 178WB (24TH) @ "M" ST

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION: *SAME LOCATION*

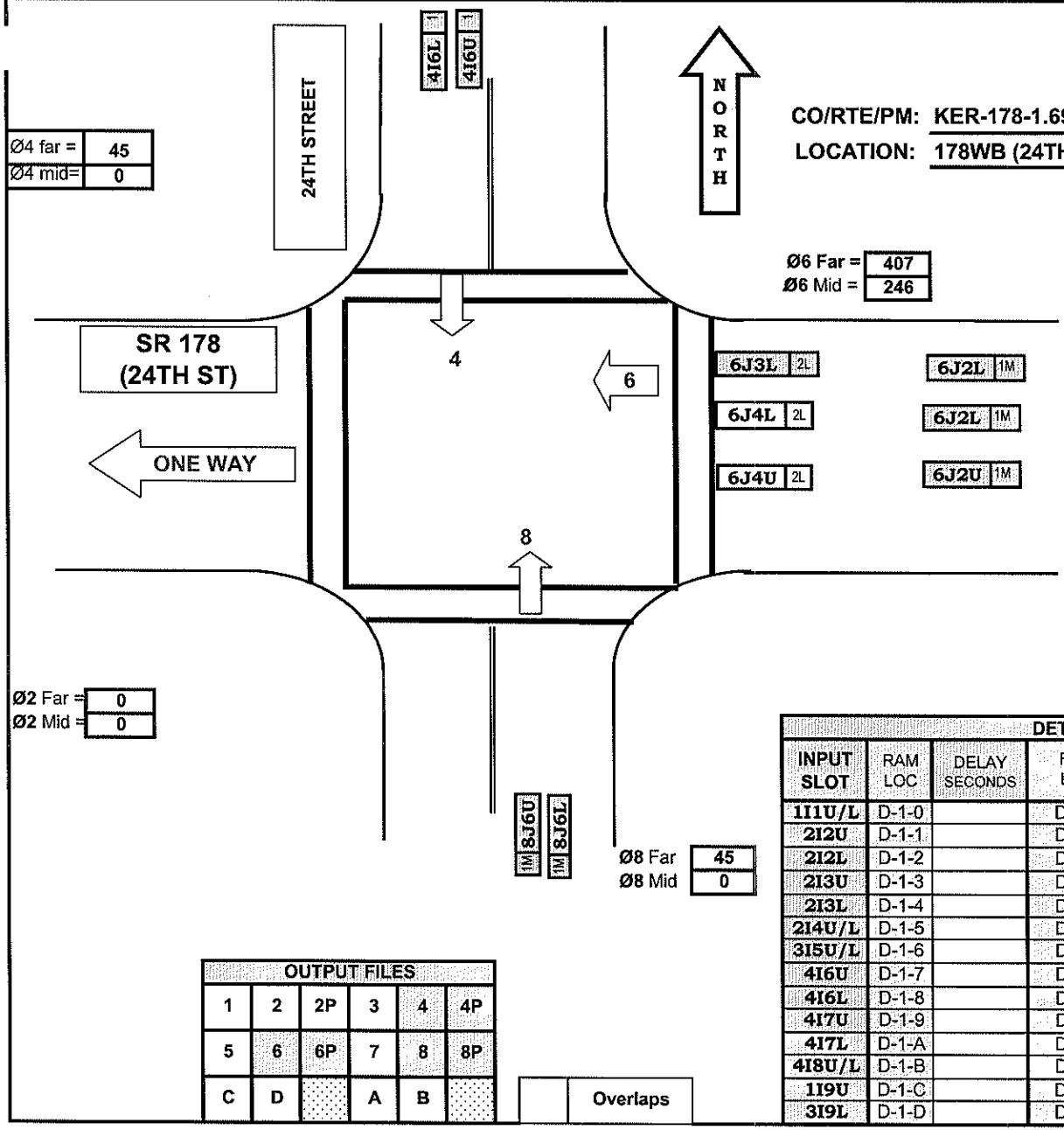
	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 1	Cycle Length	65	70	84	88	88	84				LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	22	24	35	33	28					Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green	22	24	35	33	28	32				Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	49	51	73	71	69					Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

PROM DIP SWCH

	SW. ON		
4	1	X	LOCATION
1	2		
2	3		
	4		
	5		
	6		
	7		
	8		

D	1		FEATURES
I	2		
P	3		
	4		
S	5		
W	6		
C	7		
H	8		

DETECTOR LAYOUT AND SETTINGS PAGE



332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	2.4
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5		6J4U/L	D-2-5		D-4-5	
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B		8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-178-1.69 LOCATION: 178WB (24TH) @ "M" ST

DETECTOR ASSIGNMENTS

ISOLATORS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12	I13	I14
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6	Ph 1 Cnt&Ext T6-9&10		Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12		T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	J11	J12	J13	J14
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10		T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12		T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

CO/RTE/PM: KER-178-1.69 **LOCATION:** 178WB (24TH) @ "M" ST

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-178-1.69 **LOCATIONS:** 178WB (24TH) @ "M" ST

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	Ø2 PED OUTPUT		*							5
6	Ø6 PED OUTPUT						*			6
7	Ø4 PED OUTPUT				*					7
8	Ø8 PED OUTPUT								*	8

		1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN		2	3	4

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-178-1.69 LOCATION: 178WB (24TH) @ "M" ST

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-58-51.6

Location: SR58 @ Camino Del Rio Ct.

Timing By: Walter Beam

Reviewed By: ARL Date: February 6, 2008

Card installed:

Signal installed:

	Direction	WBLT	EB	NBLT	SB	EBLT	WB		
	Det. Dist.		400		45		382		0
	Phase	1	2	3	4	5	6	7	8
0	Walk		7		7		7		
1	D. Walk		16		19		16		
2	Min Grn	6	10	6	8	6	10		
3	Type III		20		20		20		
4	Add Intial								
5	Passage	2.0	6.4	2.0	2.0	2.0	5.5		
6	Max Gap	2.0	8.8	2.0	2.8	2.0	7.6		
7	Min Gap	2.0	2.0	2.0	2.0	2.0	2.0		
8	Max 1	15	25	15	20	15	25		
9	Max 2	25	35	25	30	25	35		
A	Max 3								
B									
C	Red by		0.1		0.1		0.1		
D	Every		0.4		2.5		0.5		
E	Yellow	3.2	4.3	3.2	3.2	3.2	4.3		
F	Red	1.0	2.0	1.0	1.0	1.0	2.0		
*	C/O w/mid						1.1		
	Speed	25	45	25	25	25	45		

9	C	D	E	F
	Gap Set = 3	TB Select = 1	EV Select	Permitted Veh. Ph's
	Max Set = 2	TB Hour	RR1 TrClr	Red Lock
	C Serve Min	TB Min	EVA Delay	Yellow Lock
	Max Type	Ped Select=	EVA Hold	Vehicle Recall
		7-wire Select	EV-B Delay	Ped Recall
			EV-B Hold	Permitted Ped Ph's
			EV-C Delay	"A" Arrow
			EV-C Hold	"B" Arrow
Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry
Year			EV-D Hold	Max 2 Extension
Month	OL-A Grn=		EV Max Timer	Lag Phases
Date	OL-B Grn=		RR2 TRCLR	Red Rest
DOW	OL-C Grn=		EV Clr Tmr	Coord Walk
Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension
Minute			RR Clr Timer	Yellow Start
Seconds	RAM ADD		EV Timer	First Serve

* - FOR INFO ONLY

PERMITTED PHASES

LIGHTS								
1	2	3	4	5	6	7	8	
1	2	3	4	5	6			0
								1
								2
	2				6			3
								4
	2		4		6			5
								6
								7
								8
1	2	3	4	5	6			9
OBSERVATION ONLY								A
								B
								C
								D
			4					E
	2				6			F

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-58-51.6

LOCATION SR58 @ Camino Del Rio Ct.

If Master Controller, enter the number of Slaves at RAM location at D-0-0 =

MASTER LOCATION: 99NBOFF@SR178-PIERCE(B.O.B)

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # 14	Cycle Length	120	140	100	120	140	140	140			LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	5	8	0
1	Manual CP	Ph. 1 Green	17	14	15	15	14	14	14			Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	5	8	1
2	Master CP											Force Off Phase 2		QuicNet 7		Gapout CP 2	CP2	2	4	5	8	2
3	Current CP	Ph. 3 Green	10	14	10	15	14	14	14			Force Off Phase 3	Perm. Phase 3	Y-COORD "C"	Y-COORD "D"	Gapout CP 3	CP 3	2	4	5	8	3
4	Last CP	Ph. 4 Green	15	18	10	15	20	20	20			Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	5	8	4
5	Type Flash	Ph. 5 Green	10	10	10	10	10	10	10			Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	5	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	5	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	5	8	7
8	Flash Start	Ph. 8 Green										Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	5	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	5	8	9
A		Offset A	118	91	0	0	28	28	30			Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

SW. ON		
4	1	
1	2	X
2	3	X
	4	X
PROM	5	
	6	
	7	
	8	

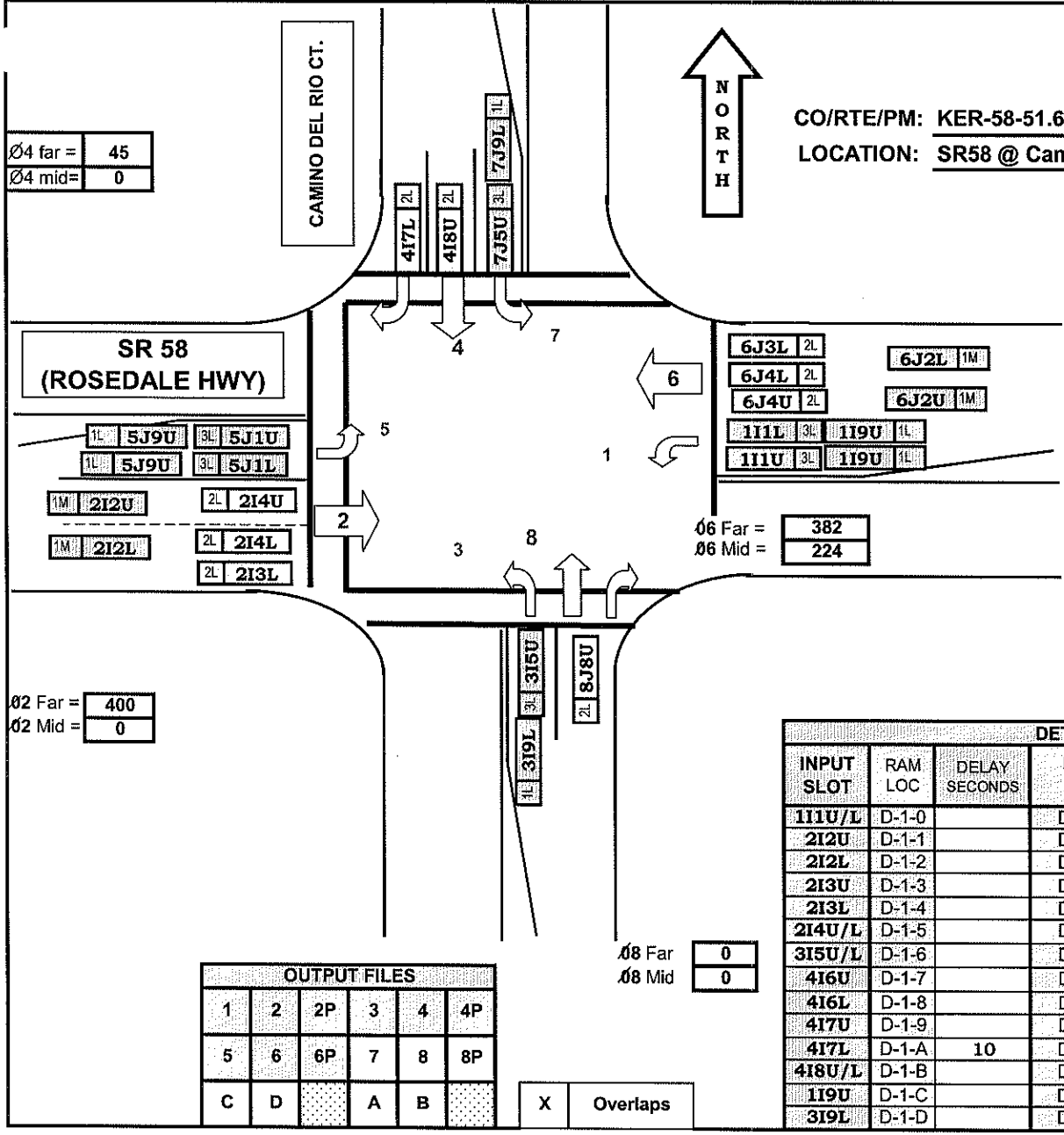
LOCATION

DIP SWCH

D	1	
I	2	
P	3	
	4	
S	5	
W	6	
C	7	
H	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-58-51.6

LOCATION: SR58 @ Camino Del Rio Ct.

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

X = Overlaps

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	
2I4U/L	D-1-5		D-3-5	2.0	6J4U/L	D-2-5		D-4-5	2.0
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A	10	D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B	2.0	8J8U/L	D-2-B		D-4-B	2.0
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-58-51.6 LOCATION: SR58 @ Camino Del Rio Ct.

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2 WBLT	Ph 2 Cnt&Ext T2-5&6 EB mid MAG	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2 EB near	Ph 3 Cnt&Ext T4-5&6 NB LT	Ph 4 Cnt&Ext T4-9&10	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6 SB near	Ph 1 Cnt&Ext T6-9&10 WB LT 4th loop	
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8 EB far MAG	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4 EB near	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4	Ph 4 Call&TP3 T6-7&8	Ph 3 Cnt&Ext T6-11&12 NB LT 4th loop	
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2 EB LT	Ph 6 Cnt&Ext T3-5&6 WB mid MAG	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2 WB near	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10 EB LT 4th loop	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8 WB far MAG	Ph 6 Cnt&Ext T3-11&12	Ph 6 Call&TP3 T5-3&4 WB near	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12 SB LT 4th loop	

ISOLATORS

	I11	I12	I13	I14
UPPER	Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
	J11	J12	J13	J14
UPPER	T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1	7/15/03'	Asterisks are default settings, changes are highlighted. WLB
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CO 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*	7	8
4	I3L		*											*		7	8	4	J3L						*							*			
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*		7	8	A	J7L								*					*			
B	I8				*									5		*	*	B	J8								*					5		*	*
C	I9U	*												*	*			C	J9U					*								*	*	7	8
D	I9L			*										*	*			D	J9L							*							*	*		

C-8 PROGRAM

CO\RTE\PM: KER-58-51.6 **LOCATIONS:** SR58 @ Camino Del Rio Ct.

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN	2	3	4	

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-58-51.6 LOCATION: SR58 @ Camino Del Rio Ct.

CONTROL CODE "7"

	HR (HH)	MIN (MM)		ACT	ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0				E								
1				E								
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CALTRAN'S C-8 PROGRAM Version 3

F - P A G E

CO/RTE/PM: KER-99-25.62 KER-58-51.807 | Card installed: 6/30/1998

Location: SB 99 OFF at SR 58 (ROSEDALE) | Signal installed:

Timing By: 0

Reviewed By: ARL **Date:** February 6, 2008

	Direction		EB		SB		WB				C	D	E	F	PERMITTED PHASES LIGHTS 1	2	3	4	5	6	7	8	
	Det. Dist.		200		120		200		0														
	Phase	1	2	3	4	5	6	7	8	9													
0	Walk						7				Gap Set = 3	TB Select = 1	EV Select	Permitted Veh. Ph's		2		4		6			0
1	D. Walk						10				Max Set = 2	TB Hour	RR1 TrClr	Red Lock									1
2	Min Grn		10		8		10				C Serve Min	TB Min	EVA Delay	Yellow Lock									2
3	Type III		20		20		20				Max Type	Ped Select=	EVA Hold	Vehicle Recall		2				6			3
4	Add Intial											7-wire Select	EV-B Delay	Ped Recall									4
5	Passage		4.5		4.1		4.5						EV-B Hold	Permitted Ped Ph's						6			5
6	Max Gap		6.1		5.4		6.1						EV-C Delay	"A" Arrow									6
7	Min Gap		2.0		2.0		2.0						EV-C Hold	"B" Arrow									7
8	Max 1		30		25		30			Max Grn Tmr		Offset Seek = 1	EV-D Delay	Double Entry									8
9	Max 2		40		35		40			Year			EV-D Hold	Max 2 Extension		2		4		6			9
A	Max 3									Month	OL-A Grn=		EV Max Timer	Lag Phases	OBSERVATION ONLY								A
B										Date	OL-B Grn=		RR2 TRCLR	Red Rest									B
C	Red by		0.1		0.1		0.1			DOW	OL-C Grn=		EV Clr Tmr	Coord Walk									C
D	Every		0.3		0.4		0.5			Hour	OL-D Grn=		EV DelayTimer	Max 3 Extension									D
E	Yellow		3.9		3.6		3.9			Minute			RR Clr Timer	Yellow Start									E
F	Red		0.5		0.5		0.5			Seconds	RAM ADD		EV Timer	First Serve		2				6			F
*	*C/O w/mid*									* - FOR INFO ONLY				OFFICE/MAINT/FIELD									
	Speed		40		30		40																

CALTRANS C-PAGE FOR C-8 PROGRAM

CO\RTE\PM KER-99-25.62

LOCATION SB 99 OFF at SR 58 (ROSEDALE)

If Master Controller, enter the number of Slaves at RAM location at **D-0-0 =**

MASTER LOCATION: SR99/SR178(24TH)/PIERCE(B.O.BLVD)

	0		CONTROL PLANS 1	2	3	4	5	6	7	8	9	TIMERS A	B	Y-COORD C	D	E	F	LAG PHASES 1\2	3\4	5\6	7\8	
0	Local # **15**	Cycle Length	120	140	100	120	140	140	140			LOCAL TIMER	MASTER TIMER	RAM TEST		TB Timer	FREE	2	4	6	8	0
1	**Manual CP**	Ph. 1 Green										Force Off Phase 1	Perm. Phase 1	INTIAL FLASH		Gapout CP 1	CP 1	2	4	6	8	1
2	Master CP											Force Off Phase 2		**QuicNet** 7		Gapout CP 2	CP2	2	4	6	8	2
3	Current CP	Ph. 3 Green										Force Off Phase 3	Perm. Phase 3	**Y-COORD "C"**	**"D"**	Gapout CP 3	CP 3	2	4	6	8	3
4	Last CP	Ph. 4 Green	18	23	18	18	20	23	23			Force Off Phase 4	Perm. Phase 4	Perm. Time	Perm. Time	Gapout CP 4	CP 4	2	4	6	8	4
5	Type Flash	Ph. 5 Green										Force Off Phase 5	Perm. Phase 5	Lag O/S	Lag O/S	Gapout CP 5	CP 5	2	4	6	8	5
6	Current Offset											Force Off Phase 6		Force Off	Force Off	Gapout CP 6	CP 6	2	4	6	8	6
7	Trans CP	Ph. 7 Green										Force Off Phase 7	Perm. Phase 7	Long Grn	Long Grn	Gapout CP 7	CP 7	2	4	6	8	7
8	Flash Start	Ph. 8 Green										Force Off Phase 8	Perm. Phase 8	No Grn	No Grn	Gapout CP 8	CP 8	2	4	6	8	8
9	CP Index	Multi Cycle												Perm Timer	Perm Timer	Gapout CP 9	CP 9	2	4	6	8	9
A		Offset A	14	99			36	36	36			Present Offset	Desired Offset	Grn O/S	Grn O/S		Y-COORD "C"					A
B	Observe Offset	Offset B												Offset Timer	Offset Timer		Y-COORD "D"					B
C														Lag Grn Timer	Lag Grn Timer		COORD PHASES	2		6		C
D	Manual Offset	Phase 3 Extension												Forceoff Timer	Forceoff Timer		HOLD					D
E		Phase 7 Extension												Long Grn Timer	Long Grn Timer		NEXT PHASE					E
F		Offset Interrupt												No Green Timer	No Green Timer		FORCE OFF					F

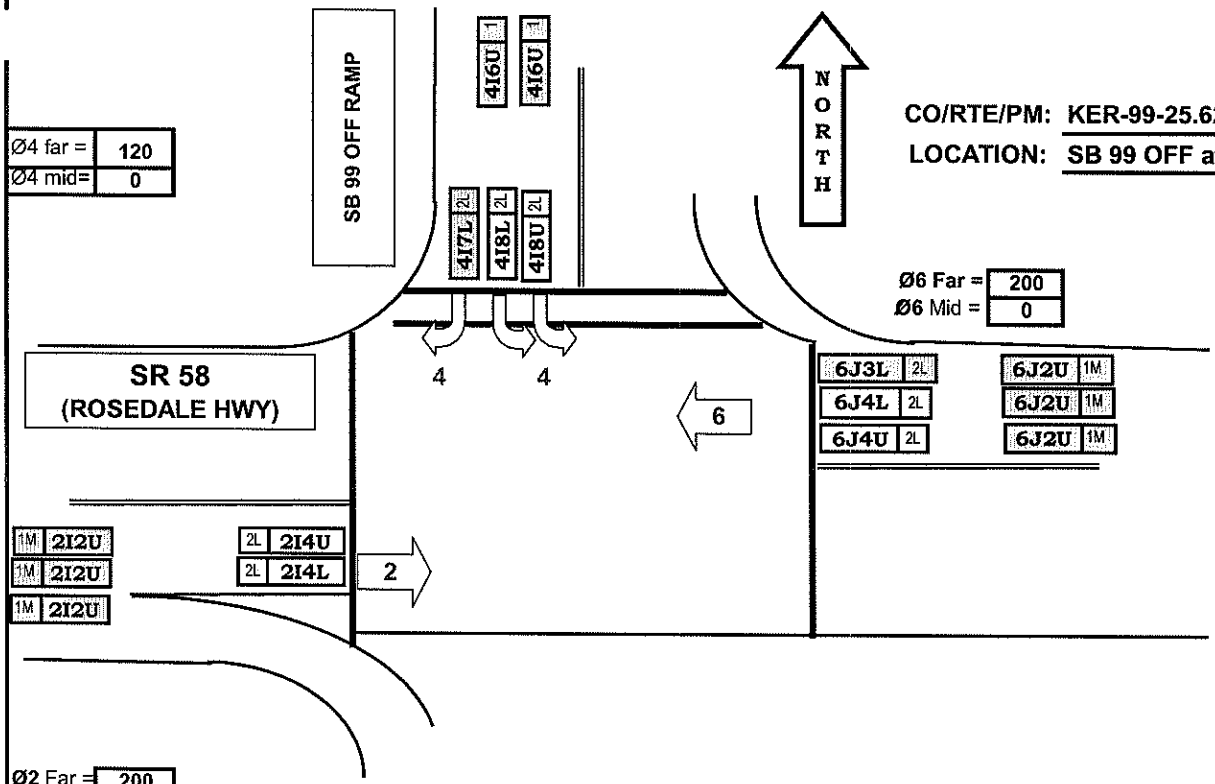
SW. ON		
4	1	X
1	2	X
2	3	X
	4	X
PROM	5	
	6	
	7	
	8	

LOCATION

DIP SWCH		
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	

FEATURES

DETECTOR LAYOUT AND SETTINGS PAGE



CO/RTE/PM: KER-99-25.62

LOCATION: SB 99 OFF at SR 58 (ROSEDALE)

332 CABINET - INPUT FILE LAYOUT														
SLOT	1	2	3	4	5	6	7	8	9	10	11	12	13	14
"I" UPPER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	1 E		ADV	Ped 2	Ped 6	FLH
"I" LOWER	1 E	2 E	2 E	2 C	3 E	4 E	4 E	4 C	3 E		SP1	Ped 4	Ped8	Stop Time
"J" UPPER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	5 E		SP2	EVA	EVB	RR1
"J" LOWER	5 E	6 E	6 E	6 C	7 E	8 E	8 E	8 C	7 E		SP3	EVC	EVD	RR2

Ø8 Far 0
Ø8 Mid 0

OUTPUT FILES					
1	2	2P	3	4	4P
5	6	6P	7	8	8P
C	D		A	B	

DETECTOR SETTINGS CONTROL CODE "D"									
INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER	INPUT SLOT	RAM LOC	DELAY SECONDS	RAM LOC	CARRY OVER
1I1U/L	D-1-0		D-3-0		5J1U/L	D-2-0		D-4-0	
2I2U	D-1-1		D-3-1		6J2U	D-2-1		D-4-1	
2I2L	D-1-2		D-3-2		6J2L	D-2-2		D-4-2	
2I3U	D-1-3		D-3-3		6J3U	D-2-3		D-4-3	
2I3L	D-1-4		D-3-4		6J3L	D-2-4		D-4-4	2.0
2I4U/L	D-1-5		D-3-5	2.0	6J4U/L	D-2-5		D-4-5	2.0
3I5U/L	D-1-6		D-3-6		7J5U/L	D-2-6		D-4-6	
4I6U	D-1-7		D-3-7		8J6U	D-2-7		D-4-7	
4I6L	D-1-8		D-3-8		8J6L	D-2-8		D-4-8	
4I7U	D-1-9		D-3-9		8J7U	D-2-9		D-4-9	
4I7L	D-1-A		D-3-A		8J7L	D-2-A		D-4-A	
4I8U/L	D-1-B		D-3-B	2.0	8J8U/L	D-2-B		D-4-B	
1I9U	D-1-C		D-3-C		5J9U	D-2-C		D-4-C	
3I9L	D-1-D		D-3-D		7J9L	D-2-D		D-4-D	

CO\RTE\PM: KER-99-25.62 LOCATION: SB 99 OFF at SR 58 (ROSEDALE)

DETECTOR ASSIGNMENTS

"I"	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
UPPER	Ph 1 Cnt&Ext T2-1&2	Ph 2 Cnt&Ext T2-5&6 MAGS FAR	Ph 2 Cnt&Ext T2-9&10	Ph 2 Call&TP3 T4-1&2 NEAR	Ph 3 Cnt&Ext T4-5&6	Ph 4 Cnt&Ext T4-9&10 MAGS FAR	Ph 4 Cnt&Ext T6-1&2	Ph 4 Call&TP3 T6-5&6 NEAR	Ph 1 Cnt&Ext T6-9&10	
LOWER	Ph 1 Cnt&Ext T2-3&4	Ph 2 Cnt&Ext T2-7&8	Ph 2 Ext T2-11&12	Ph 2 Call&TP3 T4-3&4 NEAR	Ph 3 Cnt&Ext T4-7&8	Ph 4 Cnt&Ext T4-11&12	Ph 4 Ext T6-3&4 NEAR	Ph 4 Call&TP3 T6-7&8 NEAR	Ph 3 Cnt&Ext T6-11&12	
"J"	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10
UPPER	Ph 5 Cnt&Ext T3-1&2	Ph 6 Cnt&Ext T3-5&6 MAGS FAR	Ph 6 Cnt&Ext T3-9&10	Ph 6 Call&TP3 T5-1&2 NEAR	Ph 7 Cnt&Ext T5-5&6	Ph 8 Cnt&Ext T5-9&10	Ph 8 Cnt&Ext T7-1&2	Ph 8 Call&TP3 T7-5&6	Ph 5 Cnt&Ext T7-9&10	
LOWER	Ph 5 Cnt&Ext T3-3&4	Ph 6 Cnt&Ext T3-7&8	Ph 6 ~~Cnt&Ext~~ T3-11&12 NEAR Call&TP3	Ph 6 Call&TP3 T5-3&4 NEAR	Ph 7 Cnt&Ext T5-7&8	Ph 8 Cnt&Ext T5-11&12	Ph 8 Ext T7-3&4	Ph 8 Call&TP3 T7-7&8	Ph 7 Cnt&Ext T7-11&12	

ISOLATORS

	I11	I12	I13	I14
UPPER	Manual ADV T8-1 COM 3	Ph 2 PPB T8-4 COM 6	Ph 6 PPB T8-7 COM 9	FLASH SENSE T8-10 CO 12
LOWER	T8-2 COM 3	Ph 4 PPB T8-5 COM 6	Ph 8 PPB T8-8 COM 9	STOP TIMING T8-11 COM 12
	J11	J12	J13	J14
UPPER	T9-1 COM 3	EMER A Ph 2 + 5 T9-4 COM 6	EMER C Ph 1 + 6 T9-7 COM 9	RR1 FLASH T9-10 COM 12
LOWER	T9-2 COM 3	EMER B Ph 4 + 7 T9-5 COM 6	EMER D Ph 3 + 8 T9-8 COM 9	RR2 LTD OP T9-11 COM 12

COMMENTS:

Per field obsevation slot J14 model 242 isolator present but pull-out (non-op).

ASSIGNABLE DETECTION

When location F-C-F = "123" all detector inputs may be reassigned. Each detector can be assigned to one or more phases with selectable functions using the call\active lights on the 170 controller. Columns "C" and "E" are assigned to detector phases while columns "D" and "F" are assigned to detector functions. To change either the assigned phase or detector functions, simply "flag" the phase(s) and\or the function(s) into the corresponding RAM locations. Remember to reset Location F-C-F back to "0".

	DATE	COMMENTS
1		REASSIGNED 6J3L FUNCTION TO CALL/TYPE 3 (7&8)
2		
3		
4		
5		
6		
7		
8		
9		

DETECTOR FUNCTIONS

LIGHT	FUNCTION
1	RED LOCK **(RL)**
2	YELLOW LOCK **(YL)**
5	EXTENSION **(EX)**
6	COUNT **(CT)**
7	CALL **(CA)**
8	TYPE 3 **(T3)**

PHASE AND DETECTOR SETTINGS

CONTROL CODE "E" (Set F-C-F to 123.)

INPUT FILE		C Phase Display								D (Function Display)								INPUT FILE		E Phase Display								F (Function Display)							
		1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8			1	2	3	4	5	6	7	8	RL 1	YL 2	3	4	EX 5	CT 6	CA 7	T3 8
0	I1	*												*	*			0	J1					*								*	*		
1	I2U		*											*	*			1	J2U						*							*	*		
2	I2L		*											*	*			2	J2L						*							*	*		
3	I3U		*											*	*			3	J3U						*							*	*		
4	I3L		*											*				4	J3L						*							*		7	8
5	I4		*													*	*	5	J4						*									*	*
6	I5			*										*	*			6	J5							*						*	*		
7	I6U				*									*	*			7	J6U								*					*	*		
8	I6L				*									*	*			8	J6L								*					*	*		
9	I7U				*									*	*			9	J7U								*					*	*		
A	I7L				*									*				A	J7L								*					*			
B	I8				*											*	*	B	J8								*							*	*
C	I9U	*												*	*			C	J9U					*								*	*		
D	I9L			*										*	*			D	J9L							*						*	*		

C-8 PROGRAM

CO\RTE\PM: KER-99-25.62 **LOCATIONS:** SB 99 OFF at SR 58 (ROSEDALE)

CONTROL CODE "D"

	D MAX RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	E MIN RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	F PED RECALL	PHASE FLAG 1	2	3	4	5	6	7	8	
1	CP 1									CP 1									CP 1									1
2	CP 2									CP 2									CP 2									2
3	CP 3									CP 3									CP 3									3
4	CP 4									CP 4									CP 4									4
5	CP 5									CP 5									CP 5									5
6	CP 6									CP 6									CP 6									6
7	CP 7									CP 7									CP 7									7
8	CP 8									CP 8									CP 8									8
9	CP 9									CP 9									CP 9									9
																			TOD RECALLS	1	2	3	4	5	6	7	8	
																			MAX. RECALL 1									A
																			MAX. RECALL 2									B

POWER FAILURE
F-0-C = LONG
F-0-D = SHORT

Max Green Timers
F-A-8= Ring A 1234
F-B-8= Ring B 5678

TIME LAST FLASH
D-A-F = HOUR
D-B-F = MINUTE
D-C-F = DAY

LAST PWR FAIL
D-A-E = HOUR
D-B-E = MINUTE
D-C-E = DAY

CONTROL CODE "E"

	F	PHASE FLAGS 1	2	3	4	5	6	7	8	
0	COND SERV 1									0
1	COND SERV 2									1
5	⁄02 PED OUTPUT		*							5
6	⁄06 PED OUTPUT						*			6
7	⁄04 PED OUTPUT				*					7
8	⁄08 PED OUTPUT								*	8

		PHASE FLAGS 1	2	3	4	5	6	7	8	E "NOT"	PHASE FLAGS 1	2	3	4	5	6	7	8	F "ON"	PHASE FLAGS 1	2	3	4	5	6	7	8	
A										OL "A"									OL "A"									A
B										OL "B"									OL "B"									B
C										OL "C"									OL "C"									C
D										OL "D"									OL "D"									D

PDC: MDM-89 MODEM				
ON\UP	1			
OFF\DWN	2	3	4	

4 wire settings

GDI MODEM					
UP		2		4	
DOWN	1		3		5

To set TOD Max Recalls go to "7-Page" and set either Activity Code "9" for *Max Recall 1* or Code "B" for *Max Recall 2* by time of day.

To set Overlaps or reassign peds set C-C-1 to "1", this will put the signal in "flash".

7 and 9 Pages - Time of Day Settings

CO\RTE\PM: KER-99-25.62 LOCATION: SB 99 OFF at SR 58 (ROSEDALE)

CONTROL CODE "7"

	HR (HH)	MIN (MM)	ACT		ON 0	S 1	M 2	T 3	W 4	T 5	F 6	S 7
0	05	30	A	E	X	X	X	X	X	X	X	X
1	22	30	A	E		X	X	X	X	X	X	X
2				E								
3				E								
4				E								
5				E								
6				E								
7				E								
8				E								
9				E								
A				E								
B				E								
C				E								
D				E								
E				E								
F				E								

ACTIVITY CODES (CONTROL "7")

1 = SIMULTANEOUS PHASE TERMINATION
2 = MAX 2
3 = MAX 3
4 = CONDITIONAL SERVICE (1st SELECT)
5 = CONDITIONAL SERVICE (2nd SELECT)
6 = ENERGIZE AUXILIARY OUTPUT
7 = ENERGIZE AUXILIARY OUTPUT
8 = ENERGIZE AUXILIARY OUTPUT
9 = MAX RECALL 1
A = TRAFFIC ACTUATED MAX 2 OPERATION
B = MAX RECALL 2
C = YELLOW YIELD COORDINATION
D = YELLOW YIELD COORDINATION
E = FREE OPERATION
F = FLASHING OPERATION

COMMENTS

CONTROL CODE "9" (C-0-9 = 0 OR 1)

	HR (HH)	MIN (MM)	CP	OFS		S 1	M 2	T 3	W 4	T 5	F 6	S 7
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

CONTROL CODE "9" (C - 0 - 9 = 2)

	HR (HH)	MIN (MM)	CP	OFS		1 S	2 M	3 T	4 W	5 T	6 F	7 S
0					E							
1					E							
2					E							
3					E							
4					E							
5					E							
6					E							
7					E							
8					E							
9					E							
A					E							
B					E							
C					E							
D					E							
E					E							
F					E							

APPENDIX D
HCM Analysis Sheets

Intersection Analysis

Existing Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.97	*0.84	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1719	4935		3367	4560	1538	1626	1511		1603	1624	1495
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	1719	4935		3367	4560	1538	1626	1511		1603	1624	1495
Volume (vph)	54	2141	14	151	1617	70	19	1	154	62	4	33
Peak-hour factor, PHF	0.85	0.85	0.85	0.83	0.83	0.83	0.90	0.90	0.90	0.82	0.82	0.82
Adj. Flow (vph)	64	2519	16	182	1948	84	21	1	171	76	5	40
RTOR Reduction (vph)	0	0	0	0	0	24	0	0	0	0	0	37
Lane Group Flow (vph)	64	2535	0	182	1948	60	21	172	0	38	43	3
Heavy Vehicles (%)	5%	5%	6%	4%	5%	5%	11%	2%	7%	7%	2%	8%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.0	86.4		11.6	90.0	90.0	14.0	14.0		9.1	9.1	9.1
Effective Green, g (s)	8.2	88.7		11.8	92.3	92.3	14.2	14.2		9.3	9.3	9.3
Actuated g/C Ratio	0.06	0.63		0.08	0.66	0.66	0.10	0.10		0.07	0.07	0.07
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	101	3127		284	3006	1014	165	153		106	108	99
v/s Ratio Prot	0.04	c0.51		0.05	c0.43		0.01	c0.11		0.02	c0.03	
v/s Ratio Perm						0.04						0.00
v/c Ratio	0.63	0.81		0.64	0.65	0.06	0.13	1.12		0.36	0.40	0.03
Uniform Delay, d1	64.4	19.3		62.0	14.2	8.5	57.3	62.9		62.5	62.7	61.1
Progression Factor	0.71	0.30		1.09	0.47	0.35	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.3	1.9		2.7	0.8	0.1	0.1	110.0		0.8	0.9	0.0
Delay (s)	53.3	7.7		70.6	7.4	3.0	57.4	172.9		63.3	63.5	61.2
Level of Service	D	A		E	A	A	E	F		E	E	E
Approach Delay (s)		8.8			12.4			160.3			62.7	
Approach LOS		A			B			F			E	

Intersection Summary

HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	1.00	1.00	1.00			
Frt		0.97	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4553	1286		4940	1468	1656	1509			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4553	1286		4940	1468	1656	1509			
Volume (vph)	0	1440	917	0	1529	698	276	0	309	0	0
Peak-hour factor, PHF	0.85	0.85	0.85	0.84	0.84	0.84	0.84	0.84	0.84	0.92	0.92
Adj. Flow (vph)	0	1694	1079	0	1820	831	329	0	368	0	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2047	703	0	1820	831	329	368	0	0	0
Heavy Vehicles (%)	0%	4%	8%	0%	5%	10%	9%	0%	7%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		111.5	140.0		111.5	140.0	20.0	20.0			
Effective Green, g (s)		111.9	140.0		111.9	140.0	20.1	20.1			
Actuated g/C Ratio		0.80	1.00		0.80	1.00	0.14	0.14			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		3639	1286		3948	1468	238	217			
v/s Ratio Prot		0.45			0.37		0.20	c0.24			
v/s Ratio Perm			0.55			c0.57					
v/c Ratio		0.56	0.55		0.46	0.57	1.38	1.70			
Uniform Delay, d1		5.1	0.0		4.5	0.0	60.0	60.0			
Progression Factor		0.06	1.00		0.45	1.00	1.00	1.00			
Incremental Delay, d2		0.4	0.9		0.0	0.8	196.1	332.2			
Delay (s)		0.7	0.9		2.1	0.8	256.0	392.1			
Level of Service		A	A		A	A	F	F			
Approach Delay (s)		0.8			1.7			327.9		0.0	
Approach LOS		A			A			F		A	

Intersection Summary

HCM Average Control Delay	38.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	4.0
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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1744		1559	1532	1252	3045	3213		1583	3131	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	1744		1559	1532	1252	3045	3213		1583	3131	
Volume (vph)	339	169	67	107	18	7	143	270	202	28	237	72
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.96	0.96	0.96	0.93	0.93	0.93
Adj. Flow (vph)	357	178	71	120	20	8	149	281	210	30	255	77
RTOR Reduction (vph)	0	12	0	0	0	7	0	90	0	0	20	0
Lane Group Flow (vph)	357	237	0	72	68	1	149	401	0	30	312	0
Heavy Vehicles (%)	8%	4%	5%	10%	23%	29%	15%	6%	4%	14%	12%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	24.6	24.6		8.5	8.5	8.5	6.2	36.2		3.6	32.1	
Effective Green, g (s)	24.8	24.8		8.2	8.2	8.2	7.4	36.8		3.3	32.7	
Actuated g/C Ratio	0.28	0.28		0.09	0.09	0.09	0.08	0.41		0.04	0.37	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	465	485		143	141	115	253	1327		59	1149	
v/s Ratio Prot	c0.21	0.14		c0.05	0.04		c0.05	c0.12		0.02	0.10	
v/s Ratio Perm						0.00						
v/c Ratio	0.77	0.49		0.50	0.48	0.01	0.59	0.30		0.51	0.27	
Uniform Delay, d1	29.5	26.8		38.5	38.4	36.7	39.4	17.5		42.1	19.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.0	1.1		4.0	3.7	0.0	2.3	0.6		2.5	0.6	
Delay (s)	37.5	28.0		42.5	42.1	36.8	41.6	18.1		44.6	20.4	
Level of Service	D	C		D	D	D	D	B		D	C	
Approach Delay (s)		33.6			42.0			23.6			22.4	
Approach LOS		C			D			C			C	

Intersection Summary

HCM Average Control Delay	28.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	12.0
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												
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	*0.90	*0.85			0.91	1.00	0.97		1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.99	1.00		1.00	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	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2954	4704			4988	1513	3242		1583	3303		1417
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2954	4704			4988	1513	3242		1583	3303		1417
Volume (vph)	294	1422	0	0	1119	378	857	0	873	155	0	251
Peak-hour factor, PHF	0.90	0.90	0.90	0.78	0.78	0.78	0.80	0.80	0.80	0.89	0.89	0.89
Adj. Flow (vph)	327	1580	0	0	1435	485	1071	0	1091	174	0	282
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	0	0	0	3
Lane Group Flow (vph)	327	1580	0	0	1435	473	1071	0	1091	174	0	279
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	10%	3%	2%	2%	4%	6%	8%	2%	2%	6%	2%	14%
Turn Type	Prot					pm+ov	Prot		Free	Prot		custom
Protected Phases	5	2			6	4	8			4		5 7
Permitted Phases						6			Free			
Actuated Green, G (s)	19.0	69.9			45.7	106.7	39.0		140.0	61.0		34.1
Effective Green, g (s)	20.2	70.8			46.6	107.8	40.9		140.0	61.2		36.5
Actuated g/C Ratio	0.14	0.51			0.33	0.77	0.29		1.00	0.44		0.26
Clearance Time (s)	5.2	4.9			4.9	4.2	5.9			4.2		
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		
Lane Grp Cap (vph)	426	2379			1660	1208	947		1583	1444		369
v/s Ratio Prot	0.11	0.34			c0.29	0.17	c0.33			0.05		0.20
v/s Ratio Perm						0.14			c0.69			
v/c Ratio	0.77	0.66			0.86	0.39	1.13		0.69	0.12		0.76
Uniform Delay, d1	57.6	25.8			43.7	5.3	49.5		0.0	23.4		47.7
Progression Factor	1.15	1.26			1.08	1.80	1.00		1.00	1.00		1.00
Incremental Delay, d2	5.2	1.0			5.5	0.3	72.3		2.5	0.1		7.6
Delay (s)	71.2	33.5			52.5	9.8	121.9		2.5	23.5		55.3
Level of Service	E	C			D	A	F		A	C		E
Approach Delay (s)		39.9			41.7			61.6			43.2	
Approach LOS		D			D			E			D	

Intersection Summary

HCM Average Control Delay	48.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1736	3505	1538	3467	3499		1588	1604	1599		1753	1346
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1736	3505	1538	3467	3499		1588	1604	1599		1753	1346
Volume (vph)	18	1977	455	508	1192	12	289	10	441	17	13	16
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	2247	517	577	1355	14	314	11	479	18	14	17
RTOR Reduction (vph)	0	0	125	0	0	0	0	0	38	0	0	16
Lane Group Flow (vph)	20	2247	392	577	1369	0	157	168	441	0	32	1
Heavy Vehicles (%)	4%	3%	5%	1%	3%	5%	8%	0%	1%	5%	6%	20%
Turn Type	Prot		Perm	Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2						8			7
Actuated Green, G (s)	3.6	76.2	76.2	23.5	98.1		14.1	14.1	37.6		4.8	4.8
Effective Green, g (s)	3.8	78.1	78.1	24.7	99.0		16.0	16.0	40.7		5.2	5.2
Actuated g/C Ratio	0.03	0.56	0.56	0.18	0.71		0.11	0.11	0.29		0.04	0.04
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	4.4
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	1.0
Lane Grp Cap (vph)	47	1955	858	612	2474		181	183	465		65	50
v/s Ratio Prot	0.01	c0.64		0.17	0.39		0.10	0.10	c0.17		c0.02	
v/s Ratio Perm			0.26						0.11			0.00
v/c Ratio	0.43	1.15	0.46	0.94	0.55		0.87	0.92	0.95		0.49	0.01
Uniform Delay, d1	67.0	31.0	18.4	57.0	9.9		61.0	61.4	48.6		66.1	64.9
Progression Factor	1.18	0.47	0.19	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.7	72.3	1.3	22.9	0.9		39.2	47.9	28.4		2.1	0.0
Delay (s)	80.7	86.8	4.8	79.8	10.8		100.2	109.3	77.0		68.2	65.0
Level of Service	F	F	A	E	B		F	F	E		E	E
Approach Delay (s)		71.5			31.2			88.3			67.1	
Approach LOS		E			C			F			E	

Intersection Summary

HCM Average Control Delay	59.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	97.0%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1835		1770	1863	1583	1770	3312		1770	3435	
Flt Permitted	0.66	1.00		0.56	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1222	1835		1039	1863	1583	1770	3312		1770	3435	
Volume (vph)	52	83	9	92	76	34	16	642	342	57	789	131
Peak-hour factor, PHF	0.77	0.77	0.77	0.84	0.84	0.84	0.87	0.87	0.87	0.81	0.81	0.81
Adj. Flow (vph)	68	108	12	110	90	40	18	738	393	70	974	162
RTOR Reduction (vph)	0	0	0	0	0	35	0	0	0	0	0	0
Lane Group Flow (vph)	68	120	0	110	90	5	18	1131	0	70	1136	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	14.2	14.2		14.2	14.2	14.2	4.4	72.8		7.5	75.9	
Effective Green, g (s)	14.8	14.8		14.8	14.8	14.8	4.4	73.7		7.5	76.8	
Actuated g/C Ratio	0.14	0.14		0.14	0.14	0.14	0.04	0.68		0.07	0.71	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	167	251		142	255	217	72	2260		123	2443	
v/s Ratio Prot		0.07			0.05		0.01	c0.34		c0.04	0.33	
v/s Ratio Perm	0.06			c0.11		0.00						
v/c Ratio	0.41	0.48		0.77	0.35	0.03	0.25	0.50		0.57	0.47	
Uniform Delay, d1	42.6	43.0		45.0	42.3	40.4	50.2	8.3		48.7	6.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.68	0.19		1.00	1.00	
Incremental Delay, d2	1.2	1.0		21.9	0.6	0.0	0.6	0.7		3.6	0.6	
Delay (s)	43.8	44.1		66.9	42.9	40.4	34.8	2.3		52.3	7.4	
Level of Service	D	D		E	D	D	C	A		D	A	
Approach Delay (s)		44.0			53.5			2.8			10.0	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1641		1770	1863	1583	1770	3447		1770	3473	
Flt Permitted	0.74	1.00		0.73	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1374	1641		1369	1863	1583	1770	3447		1770	3473	
Volume (vph)	7	5	19	22	22	10	45	964	53	22	771	54
Peak-hour factor, PHF	0.70	0.70	0.70	0.73	0.73	0.73	0.82	0.82	0.82	0.83	0.83	0.83
Adj. Flow (vph)	10	7	27	30	30	14	55	1176	65	27	929	65
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0	0	0
Lane Group Flow (vph)	10	34	0	30	30	1	55	1241	0	27	994	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	5.0	5.0		5.0	5.0	5.0	12.8	85.8		4.2	77.2	
Effective Green, g (s)	5.6	5.6		5.6	5.6	5.6	12.8	86.2		4.2	77.6	
Actuated g/C Ratio	0.05	0.05		0.05	0.05	0.05	0.12	0.80		0.04	0.72	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	71	85		71	97	82	210	2751		69	2495	
v/s Ratio Prot		0.02			0.02		0.03	c0.36		0.02	c0.29	
v/s Ratio Perm	0.01			c0.02		0.00						
v/c Ratio	0.14	0.40		0.42	0.31	0.01	0.26	0.45		0.39	0.40	
Uniform Delay, d1	48.9	49.6		49.6	49.3	48.6	43.3	3.4		50.7	6.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.04	0.98		1.20	0.58	
Incremental Delay, d2	0.7	2.2		2.9	1.3	0.0	0.2	0.5		1.2	0.4	
Delay (s)	49.6	51.8		52.6	50.7	48.6	45.3	3.8		61.9	3.9	
Level of Service	D	D		D	D	D	D	A		E	A	
Approach Delay (s)		51.3			51.0			5.6			5.4	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.95		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3327		3430		1770	3505
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	3327		3430		1770	3505
Volume (vph)	32	15	996	98	46	770
Peak-hour factor, PHF	0.84	0.84	0.82	0.82	0.86	0.86
Adj. Flow (vph)	38	18	1215	120	53	895
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	56	0	1335	0	53	895
Heavy Vehicles (%)	2%	2%	4%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	5.2		82.5		6.8	93.3
Effective Green, g (s)	5.8		83.4		6.8	94.2
Actuated g/C Ratio	0.05		0.77		0.06	0.87
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	179		2649		111	3057
v/s Ratio Prot	c0.02		c0.39		c0.03	0.26
v/s Ratio Perm						
v/c Ratio	0.31		0.50		0.48	0.29
Uniform Delay, d1	49.2		4.6		48.9	1.2
Progression Factor	1.00		1.53		1.08	0.64
Incremental Delay, d2	0.4		0.5		1.1	0.2
Delay (s)	49.5		7.5		54.1	1.0
Level of Service	D		A		D	A
Approach Delay (s)	49.5		7.5			4.0
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	7.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	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												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	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)	2891	3438	1568	2891	3505	1583	3400	3471	1568	3400	3438	1320
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)	2891	3438	1568	2891	3505	1583	3400	3471	1568	3400	3438	1320
Volume (vph)	587	990	161	130	298	34	358	527	434	83	264	408
Peak-hour factor, PHF	0.76	0.76	0.76	0.90	0.90	0.90	0.85	0.85	0.85	0.94	0.94	0.94
Adj. Flow (vph)	772	1303	212	144	331	38	421	620	511	88	281	434
RTOR Reduction (vph)	0	0	32	0	0	5	0	0	32	0	0	44
Lane Group Flow (vph)	772	1303	180	144	331	33	421	620	479	88	281	390
Heavy Vehicles (%)	2%	5%	3%	2%	3%	2%	3%	4%	3%	3%	5%	3%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	31.2	37.0	37.0	9.3	15.1	15.1	17.2	37.8	37.8	5.7	26.3	57.5
Effective Green, g (s)	31.2	38.3	38.3	9.3	16.4	16.4	17.2	38.7	38.7	5.7	27.2	58.4
Actuated g/C Ratio	0.29	0.35	0.35	0.09	0.15	0.15	0.16	0.36	0.36	0.05	0.25	0.54
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	835	1219	556	249	532	240	541	1244	562	179	866	714
v/s Ratio Prot	0.27	c0.38		0.05	c0.09		0.12	0.18		0.03	0.08	c0.16
v/s Ratio Perm			0.11			0.02			c0.31			0.14
v/c Ratio	0.92	1.07	0.32	0.58	0.62	0.14	0.78	0.50	0.85	0.49	0.32	0.55
Uniform Delay, d1	37.3	34.9	25.4	47.5	42.9	39.7	43.6	27.1	32.0	49.7	32.9	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.93	1.22
Incremental Delay, d2	15.5	46.3	0.2	2.0	2.0	0.2	6.4	1.4	15.1	0.8	1.0	0.4
Delay (s)	52.8	81.2	25.7	49.5	44.9	39.9	49.9	28.5	47.1	47.5	31.7	20.1
Level of Service	D	F	C	D	D	D	D	C	D	D	C	C
Approach Delay (s)		66.4			45.8			40.4			27.2	
Approach LOS		E			D			D			C	

Intersection Summary

HCM Average Control Delay	50.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2435	1710	2	0	2
Peak Hour Factor	0.93	0.93	0.87	0.87	0.25	0.25
Hourly flow rate (vph)	0	2618	1966	2	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.45	
vC, conflicting volume	1968				3276	984
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1968				4848	984
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	97
cM capacity (veh/h)	291				0	248

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1309	1309	1310	657	8
Volume Left	0	0	0	0	0
Volume Right	0	0	0	2	8
cSH	1700	1700	1700	1700	248
Volume to Capacity	0.77	0.77	0.77	0.39	0.03
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	20.0
Lane LOS					C
Approach Delay (s)	0.0		0.0		20.0
Approach LOS					C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	24	2411	1709	3	1	3
Peak Hour Factor	0.90	0.90	0.89	0.89	0.58	0.58
Hourly flow rate (vph)	27	2679	1920	3	2	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.45	
vC, conflicting volume	1924				3315	962
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1924				4911	962
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				0	98
cM capacity (veh/h)	303				0	256

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	27	1339	1339	1280	643	7
Volume Left	27	0	0	0	0	2
Volume Right	0	0	0	0	3	5
cSH	303	1700	1700	1700	1700	1
Volume to Capacity	0.09	0.79	0.79	0.75	0.38	9.56
Queue Length 95th (ft)	7	0	0	0	0	Err
Control Delay (s)	18.0	0.0	0.0	0.0	0.0	Err
Lane LOS	C					F
Approach Delay (s)	0.2			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	15.0		
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	36	2373	3	14	1646	8	5	2	10	1	3	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.70	0.70	0.70	0.83	0.83	0.83
Hourly flow rate (vph)	39	2579	3	15	1789	9	7	3	14	1	4	73
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.46			0.46	0.46	0.46	0.46	0.46	
vC, conflicting volume	1798			2583			3586	4488	1291	3193	4485	899
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1798			3279			5482	7462	444	4620	7456	899
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			62			0	0	94	0	0	74
cM capacity (veh/h)	339			40			0	0	256	0	0	282

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	39	1720	863	15	1193	605	24	78
Volume Left	39	0	0	15	0	0	7	1
Volume Right	0	0	3	0	0	9	14	73
cSH	339	1700	1700	40	1700	1700	0	0
Volume to Capacity	0.12	1.01	0.51	0.38	0.70	0.36	Err	Err
Queue Length 95th (ft)	10	0	0	33	0	0	Err	Err
Control Delay (s)	17.0	0.0	0.0	144.0	0.0	0.0	Err	Err
Lane LOS	C			F			F	F
Approach Delay (s)	0.3			1.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	226.7		
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2370	8	10	1661	5	2	1	3	1	2	5
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.56	0.56	0.56	0.88	0.88	0.88
Hourly flow rate (vph)	6	2548	9	11	1805	5	4	2	5	1	2	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1811			2557			3491	4398	1278	3118	4400	905
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1811			2557			3491	4398	1278	3118	4400	905
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			94			0	0	97	0	0	98
cM capacity (veh/h)	335			170			0	1	157	0	1	279

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	1699	858	11	1204	607	11	9
Volume Left	6	0	0	11	0	0	4	1
Volume Right	0	0	9	0	0	5	5	6
cSH	335	1700	1700	170	1700	1700	0	1
Volume to Capacity	0.02	1.00	0.50	0.06	0.71	0.36	93.28	14.88
Queue Length 95th (ft)	1	0	0	5	0	0	Err	Err
Control Delay (s)	15.9	0.0	0.0	27.6	0.0	0.0	Err	Err
Lane LOS	C			D			F	F
Approach Delay (s)	0.0			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	45.0		
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	2358	1	6	1664	12	2	1	3	1	0	10
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.50	0.50	0.50	0.45	0.45	0.45
Hourly flow rate (vph)	16	2509	1	7	1809	13	4	2	6	2	0	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1822			2510			3458	4376	1255	3115	4370	911
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1822			2510			3458	4376	1255	3115	4370	911
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			96			0	0	96	0	100	92
cM capacity (veh/h)	332			178			2	1	163	0	1	277

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	16	1672	837	7	1206	616	12	24
Volume Left	16	0	0	7	0	0	4	2
Volume Right	0	0	1	0	0	13	6	22
cSH	332	1700	1700	178	1700	1700	4	0
Volume to Capacity	0.05	0.98	0.49	0.04	0.71	0.36	3.21	Err
Queue Length 95th (ft)	4	0	0	3	0	0	Err	Err
Control Delay (s)	16.4	0.0	0.0	26.0	0.0	0.0	Err	Err
Lane LOS	C			D			F	F
Approach Delay (s)	0.1			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	2347	2	11	1674	5	1	3	1	3	2	7
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.63	0.63	0.63	0.61	0.61	0.61
Hourly flow rate (vph)	14	2471	2	12	1781	5	2	5	2	5	3	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1786			2473			3414	4309	1236	3072	4307	893
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1786			2473			3414	4309	1236	3072	4307	893
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			94			0	0	99	0	0	96
cM capacity (veh/h)	343			184			0	2	168	0	2	285

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	14	1647	826	12	1187	599	8	20
Volume Left	14	0	0	12	0	0	2	5
Volume Right	0	0	2	0	0	5	2	11
cSH	343	1700	1700	184	1700	1700	0	0
Volume to Capacity	0.04	0.97	0.49	0.06	0.70	0.35	35.33	157.50
Queue Length 95th (ft)	3	0	0	5	0	0	Err	Err
Control Delay (s)	15.9	0.0	0.0	25.9	0.0	0.0	Err	Err
Lane LOS	C			D			F	F
Approach Delay (s)	0.1			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	64.1		
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	2350	0	10	1681	6	1	3	2	5	1	8
Peak Hour Factor	0.94	0.94	0.94	0.93	0.93	0.93	0.75	0.75	0.75	0.50	0.50	0.50
Hourly flow rate (vph)	1	2500	0	11	1808	6	1	4	3	10	2	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1814			2500			3428	4338	1250	3086	4334	907
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1814			2500			3428	4338	1250	3086	4334	907
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			0	0	98	0	0	94
cM capacity (veh/h)	335			179			0	2	164	0	2	279

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	1667	833	11	1205	609	8	28
Volume Left	1	0	0	11	0	0	1	10
Volume Right	0	0	0	0	0	6	3	16
cSH	335	1700	1700	179	1700	1700	0	0
Volume to Capacity	0.00	0.98	0.49	0.06	0.71	0.36	25.24	785.81
Queue Length 95th (ft)	0	0	0	5	0	0	Err	Err
Control Delay (s)	15.8	0.0	0.0	26.3	0.0	0.0	Err	Err
Lane LOS	C			D			F	F
Approach Delay (s)	0.0			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	82.6		
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	2353	2	3	1688	5	2	3	4	4	1	7
Peak Hour Factor	0.90	0.90	0.90	0.94	0.94	0.94	0.50	0.50	0.50	0.50	0.50	0.50
Hourly flow rate (vph)	2	2614	2	3	1796	5	4	6	8	8	2	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1801			2617			3525	4427	1308	3119	4426	901
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1801			2617			3525	4427	1308	3119	4426	901
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			0	0	95	0	0	95
cM capacity (veh/h)	338			161			0	1	150	0	1	281

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	2	1743	874	3	1197	604	18	24
Volume Left	2	0	0	3	0	0	4	8
Volume Right	0	0	2	0	0	5	8	14
cSH	338	1700	1700	161	1700	1700	0	0
Volume to Capacity	0.01	1.03	0.51	0.02	0.70	0.36	173.23	518.40
Queue Length 95th (ft)	0	0	0	2	0	0	Err	Err
Control Delay (s)	15.7	0.0	0.0	27.8	0.0	0.0	Err	Err
Lane LOS	C			D			F	F
Approach Delay (s)	0.0			0.0			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	94.1		
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	2314	10	2	1686	6	0	2	3	4	1	10
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.63	0.63	0.63	0.64	0.64	0.64
Hourly flow rate (vph)	43	2660	11	2	1775	6	0	3	5	6	2	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1781			2671			3643	4536	1336	3199	4538	891
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1781			2671			3643	4536	1336	3199	4538	891
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			99			0	0	97	0	0	95
cM capacity (veh/h)	345			153			0	1	144	0	1	286

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	43	1773	898	2	1183	598	8	23
Volume Left	43	0	0	2	0	0	0	6
Volume Right	0	0	11	0	0	6	5	16
cSH	345	1700	1700	153	1700	1700	3	0
Volume to Capacity	0.12	1.04	0.53	0.01	0.70	0.35	3.07	433.21
Queue Length 95th (ft)	10	0	0	1	0	0	Err	Err
Control Delay (s)	16.9	0.0	0.0	28.8	0.0	0.0	Err	Err
Lane LOS	C			D			F	F
Approach Delay (s)	0.3			0.0			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	69.4		
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	1688	5	1	0	0	0	0	5
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.58	0.58	0.58
Hourly flow rate (vph)	0	0	0	0	1815	5	1	0	0	0	0	9
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)					1079							
pX, platoon unblocked	0.60						0.60	0.60		0.60	0.60	0.60
vC, conflicting volume	1820			0			908	1820	0	1818	1818	910
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1701			0			182	1701	0	1697	1697	186
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	98
cM capacity (veh/h)	222			1622			450	55	1084	36	55	495

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	908	913	1	9
Volume Left	0	0	1	0
Volume Right	0	5	0	9
cSH	1622	1700	450	248
Volume to Capacity	0.00	0.54	0.00	0.03
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	13.0	20.1
Lane LOS			B	C
Approach Delay (s)	0.0		13.0	20.1
Approach LOS			B	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	3	1684	6	4	1	0	0	4	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.58	0.58	0.58	0.67	0.67	0.67
Hourly flow rate (vph)	0	0	0	3	1830	7	7	2	0	0	6	7
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)					728							
pX, platoon unblocked	0.74						0.74	0.74		0.74	0.74	0.74
vC, conflicting volume	1837			0			623	1843	0	1841	1840	613
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1430			0			0	1438	0	1435	1434	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	98	100	100	94	99
cM capacity (veh/h)	349			1622			714	97	1084	69	98	803

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	461	915	464	9	13
Volume Left	3	0	0	7	0
Volume Right	0	0	7	0	7
cSH	1622	1700	1700	315	221
Volume to Capacity	0.00	0.54	0.27	0.03	0.06
Queue Length 95th (ft)	0	0	0	2	5
Control Delay (s)	0.1	0.0	0.0	16.7	24.9
Lane LOS	A			C	C
Approach Delay (s)	0.0			16.7	24.9
Approach LOS				C	C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	3	1687	7	4	3	0	0	2	2
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.44	0.44	0.44	0.50	0.50	0.50
Hourly flow rate (vph)	0	0	0	3	1795	7	9	7	0	0	4	4
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)					372							
pX, platoon unblocked	0.72						0.72	0.72		0.72	0.72	0.72
vC, conflicting volume	1802			0			607	1809	0	1808	1805	602
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1339			0			0	1348	0	1348	1343	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	94	100	100	96	99
cM capacity (veh/h)	368			1622			712	108	1084	75	108	782

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	452	897	456	16	8
Volume Left	3	0	0	9	0
Volume Right	0	0	7	0	4
cSH	1622	1700	1700	209	217
Volume to Capacity	0.00	0.53	0.27	0.08	0.04
Queue Length 95th (ft)	0	0	0	6	3
Control Delay (s)	0.1	0.0	0.0	23.6	24.5
Lane LOS	A			C	C
Approach Delay (s)	0.0			23.6	24.5
Approach LOS				C	C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.98	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4994		1752	3505			3425	
Flt Permitted					0.99		0.95	1.00			1.00	
Satd. Flow (perm)					4994		1752	3505			3425	
Volume (vph)	0	0	0	195	1583	36	47	251	0	0	373	67
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.82	0.82	0.82	0.88	0.88	0.88
Adj. Flow (vph)	0	0	0	217	1759	40	57	306	0	0	424	76
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	16	0
Lane Group Flow (vph)	0	0	0	0	2014	0	57	306	0	0	484	0
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	0%	0%	3%	3%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					48.4		6.1	30.4			20.6	
Effective Green, g (s)					49.0		5.8	31.0			21.2	
Actuated g/C Ratio					0.56		0.07	0.35			0.24	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2781		115	1235			825	
v/s Ratio Prot							c0.03	0.09			c0.14	
v/s Ratio Perm					0.40							
v/c Ratio					0.72		0.50	0.25			0.59	
Uniform Delay, d1					14.5		39.7	20.2			29.5	
Progression Factor					0.17		0.89	1.21			1.00	
Incremental Delay, d2					1.1		0.9	0.3			3.0	
Delay (s)					3.6		36.2	24.8			32.6	
Level of Service					A		D	C			C	
Approach Delay (s)		0.0			3.6			26.6			32.6	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	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		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	21	1796	10	10	14	0	0	10	8
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.63	0.63	0.63	0.66	0.66	0.66
Hourly flow rate (vph)	0	0	0	24	2041	11	16	22	0	0	15	12
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)		346			345							
pX, platoon unblocked	0.67						0.67	0.67		0.67	0.67	0.67
vC, conflicting volume	2052			0			736	2100	0	2105	2094	686
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1576			0			0	1648	0	1656	1639	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	65	100	100	77	98
cM capacity (veh/h)	275			1622			543	64	1084	31	65	722

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	534	1020	522	38	27
Volume Left	24	0	0	16	0
Volume Right	0	0	11	0	12
cSH	1622	1700	1700	102	117
Volume to Capacity	0.01	0.60	0.31	0.37	0.23
Queue Length 95th (ft)	1	0	0	38	21
Control Delay (s)	0.5	0.0	0.0	60.2	46.8
Lane LOS	A			F	E
Approach Delay (s)	0.1			60.2	46.8
Approach LOS				F	E

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					5007		1770	1863			3385	
Flt Permitted					1.00		0.67	1.00			1.00	
Satd. Flow (perm)					5007		1254	1863			3385	
Volume (vph)	0	0	0	118	1733	43	63	196	0	0	75	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	0	0	0	139	2039	51	74	231	0	0	88	36
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	0	2226	0	74	231	0	0	119	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					48.8		28.0	28.0			28.0	
Effective Green, g (s)					50.4		29.6	29.6			29.6	
Actuated g/C Ratio					0.57		0.34	0.34			0.34	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					2868		422	627			1139	
v/s Ratio Prot								c0.12			0.04	
v/s Ratio Perm					0.44		0.06					
v/c Ratio					0.78		0.18	0.37			0.10	
Uniform Delay, d1					14.5		20.6	22.1			20.1	
Progression Factor					0.16		0.87	0.91			1.00	
Incremental Delay, d2					1.5		0.8	1.5			0.2	
Delay (s)					3.7		18.6	21.5			20.3	
Level of Service					A		B	C			C	
Approach Delay (s)		0.0			3.7			20.8			20.3	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.5%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	24	1884	12	1	5	0	0	1	9
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.47	0.47	0.47	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	0	28	2216	14	2	11	0	0	1	12
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)		373			371							
pX, platoon unblocked	0.65						0.65	0.65		0.65	0.65	0.65
vC, conflicting volume	2231			0			796	2287	0	2285	2280	746
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1812			0			0	1900	0	1897	1889	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	76	100	100	97	98
cM capacity (veh/h)	217			1622			628	44	1084	22	44	703

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	582	1108	568	13	13
Volume Left	28	0	0	2	0
Volume Right	0	0	14	0	12
cSH	1622	1700	1700	52	443
Volume to Capacity	0.02	0.65	0.33	0.25	0.03
Queue Length 95th (ft)	1	0	0	21	2
Control Delay (s)	0.5	0.0	0.0	96.4	18.1
Lane LOS	A			F	C
Approach Delay (s)	0.1			96.4	18.1
Approach LOS				F	C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5004		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					5004		1770	3539			3539	1583
Volume (vph)	0	0	0	136	1805	51	56	360	0	0	410	59
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.75	0.75	0.75	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	151	2006	57	75	480	0	0	432	62
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	43
Lane Group Flow (vph)	0	0	0	0	2211	0	75	480	0	0	432	19
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					47.8		6.1	31.0			20.7	20.7
Effective Green, g (s)					48.4		6.3	31.6			21.3	21.3
Actuated g/C Ratio					0.55		0.07	0.36			0.24	0.24
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2752		127	1271			857	383
v/s Ratio Prot							c0.04	0.14			c0.12	
v/s Ratio Perm					0.44							0.01
v/c Ratio					0.80		0.59	0.38			0.50	0.05
Uniform Delay, d1					16.0		39.6	20.9			28.8	25.6
Progression Factor					0.20		1.37	0.56			1.00	1.00
Incremental Delay, d2					2.1		4.1	0.7			2.1	0.2
Delay (s)					5.2		58.2	12.5			30.9	25.8
Level of Service					A		E	B			C	C
Approach Delay (s)		0.0			5.2			18.7			30.3	
Approach LOS		A			A			B			C	

Intersection Summary

HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	36	1956	87	14	5	0	0	2	22
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.81	0.81	0.81	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	0	40	2198	98	17	6	0	0	2	27
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)		381			357							
pX, platoon unblocked	0.80						0.80	0.80		0.80	0.80	0.80
vC, conflicting volume	2296			0			815	2376	0	2331	2328	781
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2114			0			252	2216	0	2158	2154	211
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			96	82	100	100	93	96
cM capacity (veh/h)	203			1622			483	33	1084	18	37	632

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	590	1099	647	17	6	29
Volume Left	40	0	0	17	0	0
Volume Right	0	0	98	0	0	27
cSH	1622	1700	1700	483	33	440
Volume to Capacity	0.02	0.65	0.38	0.04	0.18	0.07
Queue Length 95th (ft)	2	0	0	3	14	5
Control Delay (s)	0.7	0.0	0.0	12.7	135.3	19.2
Lane LOS	A			B	F	C
Approach Delay (s)	0.2			45.0		19.2
Approach LOS				E		C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5017		1770	1863			1863	1583
Flt Permitted					1.00		0.72	1.00			1.00	1.00
Satd. Flow (perm)					5017		1348	1863			1863	1583
Volume (vph)	0	0	0	177	2045	10	24	23	0	0	40	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	199	2298	11	31	29	0	0	51	13
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	4
Lane Group Flow (vph)	0	0	0	0	2508	0	31	29	0	0	51	9
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					68.7		8.2	8.2			8.2	8.2
Effective Green, g (s)					70.3		9.7	9.7			9.7	9.7
Actuated g/C Ratio					0.80		0.11	0.11			0.11	0.11
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4008		149	205			205	174
v/s Ratio Prot								0.02			c0.03	
v/s Ratio Perm					0.50		0.02					0.01
v/c Ratio					0.63		0.21	0.14			0.25	0.05
Uniform Delay, d1					3.6		35.7	35.4			35.8	35.0
Progression Factor					0.83		1.08	1.08			1.00	1.00
Incremental Delay, d2					0.3		0.2	0.1			0.2	0.0
Delay (s)					3.3		38.6	38.2			36.0	35.1
Level of Service					A		D	D			D	D
Approach Delay (s)		0.0			3.3			38.4			35.9	
Approach LOS		A			A			D			D	

Intersection Summary

HCM Average Control Delay	4.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	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												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5020		1770	1863			1863	1583
Flt Permitted					1.00		0.60	1.00			1.00	1.00
Satd. Flow (perm)					5020		1113	1863			1863	1583
Volume (vph)	0	0	0	6	2326	53	32	128	0	0	108	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.81	0.81	0.81	0.62	0.62	0.62
Adj. Flow (vph)	0	0	0	7	2643	60	40	158	0	0	174	87
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2707	0	40	158	0	0	174	86
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					48.9		28.0	28.0			28.0	28.0
Effective Green, g (s)					50.5		29.5	29.5			29.5	29.5
Actuated g/C Ratio					0.57		0.34	0.34			0.34	0.34
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					2881		373	625			625	531
v/s Ratio Prot								0.08			c0.09	
v/s Ratio Perm					0.54		0.04					0.05
v/c Ratio					0.94		0.11	0.25			0.28	0.16
Uniform Delay, d1					17.3		20.2	21.2			21.4	20.6
Progression Factor					1.00		1.08	1.06			1.00	1.00
Incremental Delay, d2					7.6		0.5	0.9			1.1	0.7
Delay (s)					25.0		22.4	23.5			22.6	21.2
Level of Service					C		C	C			C	C
Approach Delay (s)		0.0			25.0			23.3			22.1	
Approach LOS		A			C			C			C	

Intersection Summary

HCM Average Control Delay	24.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2313	2	0	0	0	0	2	4	6	1	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.50	0.50	0.50	0.55	0.55	0.55
Hourly flow rate (vph)	7	2721	2	0	0	0	0	4	8	11	2	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)					728							
pX, platoon unblocked												
vC, conflicting volume	0			2724			2737	2736	908	923	2738	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2724			2737	2736	908	923	2738	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	80	97	94	91	100
cM capacity (veh/h)	1622			146			9	20	278	184	20	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	687	1361	683	12	13
Volume Left	7	0	0	0	11
Volume Right	0	0	2	8	0
cSH	1622	1700	1700	59	84
Volume to Capacity	0.00	0.80	0.40	0.20	0.15
Queue Length 95th (ft)	0	0	0	17	13
Control Delay (s)	0.1	0.0	0.0	88.1	55.3
Lane LOS	A			F	F
Approach Delay (s)	0.0			88.1	55.3
Approach LOS				F	F

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2312	4	0	0	0	0	4	1	2	6	0
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.75	0.75	0.75	0.42	0.42	0.42
Hourly flow rate (vph)	8	2688	5	0	0	0	0	5	1	5	14	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			2693			2714	2707	898	915	2709	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2693			2714	2707	898	915	2709	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	74	100	97	31	100
cM capacity (veh/h)	1622			150			4	21	282	181	21	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	680	1344	677	7	19
Volume Left	8	0	0	0	5
Volume Right	0	0	5	1	0
cSH	1622	1700	1700	26	27
Volume to Capacity	0.01	0.79	0.40	0.26	0.72
Queue Length 95th (ft)	0	0	0	20	56
Control Delay (s)	0.1	0.0	0.0	188.3	296.3
Lane LOS	A			F	F
Approach Delay (s)	0.0			188.3	296.3
Approach LOS				F	F

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5016						3392		1752	3505	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		5016						3392		1752	3505	
Volume (vph)	123	2176	22	0	0	0	0	262	72	106	454	0
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	146	2590	26	0	0	0	0	328	90	118	504	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	2761	0	0	0	0	0	390	0	118	504	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	3%	3%	3%	3%	0%
Turn Type	Perm									Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2											
Actuated Green, G (s)		47.9						17.0		7.7	28.9	
Effective Green, g (s)		49.5						18.6		7.9	30.5	
Actuated g/C Ratio		0.56						0.21		0.09	0.35	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		5.6						4.4		2.0	5.9	
Lane Grp Cap (vph)		2822						717		157	1215	
v/s Ratio Prot								c0.11		c0.07	0.14	
v/s Ratio Perm		0.55										
v/c Ratio		0.98						0.54		0.75	0.41	
Uniform Delay, d1		18.7						30.9		39.1	21.9	
Progression Factor		1.00						1.00		0.62	0.70	
Incremental Delay, d2		12.6						2.9		12.9	0.5	
Delay (s)		31.3						33.9		37.3	15.8	
Level of Service		C						C		D	B	
Approach Delay (s)		31.3			0.0			33.9			19.9	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	29.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	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		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	2315	19	0	0	0	0	7	7	27	15	0
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.63	0.63	0.63	0.79	0.79	0.79
Hourly flow rate (vph)	22	2601	21	0	0	0	0	11	11	34	19	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)		346			345							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			2622			2666	2657	878	918	2667	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2195			2289	2268	0	0	2291	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	40	98	86	0	100
cM capacity (veh/h)	1622			111			0	19	509	242	18	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	673	1301	672	22	53
Volume Left	22	0	0	0	34
Volume Right	0	0	21	11	0
cSH	1622	1700	1700	37	44
Volume to Capacity	0.01	0.77	0.40	0.60	1.20
Queue Length 95th (ft)	1	0	0	53	126
Control Delay (s)	0.4	0.0	0.0	184.1	346.6
Lane LOS	A			F	F
Approach Delay (s)	0.1			184.1	346.6
Approach LOS				F	F

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5024						3307		1770	1863	
Flt Permitted		1.00						1.00		0.42	1.00	
Satd. Flow (perm)		5024						3307		785	1863	
Volume (vph)	71	2257	21	0	0	0	0	190	148	9	188	0
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.79	0.79	0.79	0.83	0.83	0.83
Adj. Flow (vph)	76	2401	22	0	0	0	0	241	187	11	227	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	2498	0	0	0	0	0	425	0	11	227	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.3						27.0		27.0	27.0	
Effective Green, g (s)		51.8						28.2		28.2	28.2	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		2957						1060		252	597	
v/s Ratio Prot								c0.13			0.12	
v/s Ratio Perm		0.50								0.01		
v/c Ratio		0.84						0.40		0.04	0.38	
Uniform Delay, d1		14.8						23.3		20.6	23.1	
Progression Factor		0.33						1.00		1.06	1.04	
Incremental Delay, d2		1.2						1.1		0.3	1.6	
Delay (s)		6.1						24.4		22.2	25.8	
Level of Service		A						C		C	C	
Approach Delay (s)		6.1			0.0			24.4			25.6	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.5%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	2380	24	0	0	0	0	0	9	2	24	0
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.69	0.69	0.69	0.78	0.78	0.78
Hourly flow rate (vph)	11	2705	27	0	0	0	0	0	13	3	31	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)		373			371							
pX, platoon unblocked				0.58			0.58	0.58	0.58	0.58	0.58	
vC, conflicting volume	0			2732			2756	2741	915	924	2755	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2537			2579	2552	0	0	2576	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	100	98	100	0	100
cM capacity (veh/h)	1622			100			0	15	627	576	15	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	688	1352	703	13	33
Volume Left	11	0	0	0	3
Volume Right	0	0	27	13	0
cSH	1622	1700	1700	314	16
Volume to Capacity	0.01	0.80	0.41	0.04	2.12
Queue Length 95th (ft)	1	0	0	3	120
Control Delay (s)	0.2	0.0	0.0	17.0	1015.3
Lane LOS	A			C	F
Approach Delay (s)	0.1			17.0	1015.3
Approach LOS				C	F

Intersection Summary			
Average Delay	12.3		
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5009						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5009						3539	1583	1770	3539	
Volume (vph)	155	2188	48	0	0	0	0	303	196	127	457	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	168	2378	52	0	0	0	0	337	218	140	502	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	27	0	0	0
Lane Group Flow (vph)	0	2596	0	0	0	0	0	337	191	140	502	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2								8			
Actuated Green, G (s)		46.2						17.4	17.4	8.6	30.6	
Effective Green, g (s)		47.8						19.0	19.0	9.2	32.2	
Actuated g/C Ratio		0.54						0.22	0.22	0.10	0.37	
Clearance Time (s)		5.6						5.6	5.6	4.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2721						764	342	185	1295	
v/s Ratio Prot								0.10		c0.08	0.14	
v/s Ratio Perm		0.52							c0.12			
v/c Ratio		0.95						0.44	0.56	0.76	0.39	
Uniform Delay, d1		19.1						29.9	30.8	38.3	20.6	
Progression Factor		0.30						1.00	1.00	1.30	0.92	
Incremental Delay, d2		6.5						1.8	6.4	12.6	0.8	
Delay (s)		12.2						31.7	37.2	62.5	19.6	
Level of Service		B						C	D	E	B	
Approach Delay (s)		12.2			0.0			33.9			29.0	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	51	2415	45	0	0	0	0	5	8	26	8	0
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.54	0.54	0.54	0.77	0.77	0.77
Hourly flow rate (vph)	58	2744	51	0	0	0	0	9	15	34	10	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)		377			348							
pX, platoon unblocked				0.50			0.50	0.50	0.50	0.50	0.50	
vC, conflicting volume	0			2795			2891	2886	940	1035	2911	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2592			2782	2772	0	0	2823	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			0	0	97	0	0	100
cM capacity (veh/h)	1622			83			0	9	543	0	8	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	744	1372	737	24	44
Volume Left	58	0	0	0	34
Volume Right	0	0	51	15	0
cSH	1622	1700	1700	24	0
Volume to Capacity	0.04	0.81	0.43	1.02	Err
Queue Length 95th (ft)	3	0	0	76	Err
Control Delay (s)	1.0	0.0	0.0	429.3	Err
Lane LOS	A			F	F
Approach Delay (s)	0.3			429.3	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						1.00	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4993						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.73	1.00	
Satd. Flow (perm)		4993						1863	1583	1352	3539	
Volume (vph)	77	2246	126	0	0	0	0	40	66	60	402	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.83	0.83	0.83	0.77	0.77	0.77
Adj. Flow (vph)	86	2496	140	0	0	0	0	48	80	78	522	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	2716	0	0	0	0	0	48	76	78	522	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		58.4						20.8	20.8	18.8	18.8	
Effective Green, g (s)		60.0						20.0	20.0	20.0	20.0	
Actuated g/C Ratio		0.68						0.23	0.23	0.23	0.23	
Clearance Time (s)		5.6						3.2	3.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3404						423	360	307	804	
v/s Ratio Prot								0.03			c0.15	
v/s Ratio Perm		0.54							0.05	0.06		
v/c Ratio		0.80						0.11	0.21	0.25	0.65	
Uniform Delay, d1		9.8						27.0	27.6	27.9	30.8	
Progression Factor		0.33						1.00	1.00	1.10	1.10	
Incremental Delay, d2		1.0						0.0	0.1	0.2	1.3	
Delay (s)		4.2						27.0	27.7	30.7	35.2	
Level of Service		A						C	C	C	D	
Approach Delay (s)		4.2			0.0			27.4			34.6	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.8%	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												
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		0.91						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5015						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.71	1.00	
Satd. Flow (perm)		5015						1863	1583	1325	1863	
Volume (vph)	80	2243	49	0	0	0	0	46	29	28	99	0
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.66	0.66	0.66	0.73	0.73	0.73
Adj. Flow (vph)	95	2670	58	0	0	0	0	70	44	38	136	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	2821	0	0	0	0	0	70	42	38	136	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3237						491	417	349	491	
v/s Ratio Prot								0.04			c0.07	
v/s Ratio Perm		0.56							0.03	0.03		
v/c Ratio		0.87						0.14	0.10	0.11	0.28	
Uniform Delay, d1		12.6						24.8	24.5	24.6	25.7	
Progression Factor		0.68						1.00	1.00	1.40	1.41	
Incremental Delay, d2		2.5						0.6	0.5	0.6	1.4	
Delay (s)		11.1						25.4	25.0	34.9	37.6	
Level of Service		B						C	C	C	D	
Approach Delay (s)		11.1			0.0			25.2			37.0	
Approach LOS		B			A			C			D	

Intersection Summary

HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.97	*0.87	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1626	4839		3400	4678	1568	1626	1577		1665	1669	1429
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1626	4839		3400	4678	1568	1626	1577		1665	1669	1429
Volume (vph)	29	1871	21	302	1587	411	22	5	169	335	1	63
Peak-hour factor, PHF	0.86	0.86	0.86	0.89	0.89	0.89	0.75	0.75	0.75	0.91	0.91	0.91
Adj. Flow (vph)	34	2176	24	339	1783	462	29	7	225	368	1	69
RTOR Reduction (vph)	0	0	0	0	0	144	0	0	0	0	0	30
Lane Group Flow (vph)	34	2200	0	339	1783	318	29	232	0	184	185	39
Heavy Vehicles (%)	11%	7%	8%	3%	6%	3%	11%	2%	3%	3%	2%	13%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.0	75.1		14.0	83.1	83.1	14.0	14.0		18.0	18.0	18.0
Effective Green, g (s)	6.2	77.4		14.2	85.4	85.4	14.2	14.2		18.2	18.2	18.2
Actuated g/C Ratio	0.04	0.55		0.10	0.61	0.61	0.10	0.10		0.13	0.13	0.13
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	72	2675		345	2854	956	165	160		216	217	186
v/s Ratio Prot	0.02	c0.45		c0.10	0.38		0.02	c0.15		0.11	c0.11	
v/s Ratio Perm						0.20						0.03
v/c Ratio	0.47	0.82		0.98	0.62	0.33	0.18	1.45		0.85	0.85	0.21
Uniform Delay, d1	65.3	25.7		62.8	17.2	13.4	57.5	62.9		59.6	59.6	54.5
Progression Factor	1.55	2.35		1.22	0.46	0.21	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	2.0		32.2	0.6	0.5	0.2	233.9		25.3	25.3	0.2
Delay (s)	102.6	62.2		108.6	8.5	3.3	57.7	296.8		84.9	84.9	54.7
Level of Service	F	E		F	A	A	E	F		F	F	D
Approach Delay (s)		62.8			20.7			270.2			80.2	
Approach LOS		E			C			F			F	

Intersection Summary

HCM Average Control Delay	54.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	1.00	1.00	1.00			
Frpb, ped/bikes		1.00	0.99		1.00	0.98	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			
Frt		0.95	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4419	1282		4940	1492	1570	1524			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4419	1282		4940	1492	1570	1524			
Volume (vph)	0	1184	1191	0	1889	1267	222	0	411	0	0
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.86	0.86	0.86	0.92	0.92
Adj. Flow (vph)	0	1273	1281	0	2099	1408	258	0	478	0	0
RTOR Reduction (vph)	0	64	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1837	653	0	2099	1408	258	478	0	0	0
Confl. Peds. (#/hr)			2			2					
Heavy Vehicles (%)	2%	4%	7%	2%	5%	6%	15%	2%	6%	2%	2%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		108.5	140.0		108.5	140.0	23.0	23.0			
Effective Green, g (s)		108.9	140.0		108.9	140.0	23.1	23.1			
Actuated g/C Ratio		0.78	1.00		0.78	1.00	0.16	0.16			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		3437	1282		3843	1492	259	251			
v/s Ratio Prot		0.42			0.42		0.16	c0.31			
v/s Ratio Perm			0.51			c0.94					
v/c Ratio		0.53	0.51		0.55	0.94	1.00	1.90			
Uniform Delay, d1		5.9	0.0		6.0	0.0	58.4	58.4			
Progression Factor		0.60	1.00		2.49	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.7		0.1	1.7	54.6	421.6			
Delay (s)		3.8	0.7		15.0	1.7	113.0	480.0			
Level of Service		A	A		B	A	F	F			
Approach Delay (s)		3.0			9.7			351.3		0.0	
Approach LOS		A			A			F		A	

Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1594		1633	1644	1553	3213	3214		1399	3313	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	1594		1633	1644	1553	3213	3214		1399	3313	
Volume (vph)	147	69	59	325	41	49	382	345	93	33	473	85
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.92	0.92	0.92	0.79	0.79	0.79
Adj. Flow (vph)	167	78	67	357	45	54	415	375	101	42	599	108
RTOR Reduction (vph)	0	0	0	0	0	45	0	0	0	0	0	0
Lane Group Flow (vph)	167	145	0	199	203	9	415	476	0	42	707	0
Heavy Vehicles (%)	14%	10%	12%	5%	8%	4%	9%	6%	19%	29%	6%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	17.7	17.7		20.7	20.7	20.7	22.6	58.9		6.5	41.3	
Effective Green, g (s)	17.9	17.9		20.4	20.4	20.4	23.8	59.5		6.2	41.9	
Actuated g/C Ratio	0.15	0.15		0.17	0.17	0.17	0.20	0.50		0.05	0.35	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	236	238		278	279	264	637	1594		72	1157	
v/s Ratio Prot	c0.11	0.09		0.12	c0.12		c0.13	0.15		0.03	c0.21	
v/s Ratio Perm						0.01						
v/c Ratio	0.71	0.61		0.72	0.73	0.03	0.65	0.30		0.58	0.61	
Uniform Delay, d1	48.6	47.8		47.1	47.2	41.6	44.3	17.9		55.6	32.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.1	5.2		9.2	9.8	0.1	1.8	0.5		7.5	2.4	
Delay (s)	58.6	53.0		56.2	57.0	41.7	46.1	18.4		63.2	34.7	
Level of Service	E	D		E	E	D	D	B		E	C	
Approach Delay (s)		56.0			54.8			31.3			36.3	
Approach LOS		E			D			C			D	

Intersection Summary

HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.2%	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												
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	*0.90	*0.85			0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2927	4704			5036	1538	3213		1568	3400		1509
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2927	4704			5036	1538	3213		1568	3400		1509
Volume (vph)	394	1012	0	0	1658	446	1076	0	684	466	0	422
Peak-hour factor, PHF	0.84	0.84	0.84	0.86	0.86	0.86	0.86	0.86	0.86	0.84	0.84	0.84
Adj. Flow (vph)	469	1205	0	0	1928	519	1251	0	795	555	0	502
RTOR Reduction (vph)	0	0	0	0	0	4	0	0	0	0	0	1
Lane Group Flow (vph)	469	1205	0	0	1928	515	1251	0	795	555	0	501
Heavy Vehicles (%)	11%	3%	2%	2%	3%	5%	9%	2%	3%	3%	2%	7%
Turn Type	Prot					pm+ov	Prot		Free	Prot		custom
Protected Phases	5	2			6	4	8			4		5 7
Permitted Phases						6			Free			
Actuated Green, G (s)	20.0	74.0			48.8	104.7	35.0		140.0	55.9		35.0
Effective Green, g (s)	21.2	74.9			49.7	106.8	36.9		140.0	57.1		37.4
Actuated g/C Ratio	0.15	0.54			0.36	0.76	0.26		1.00	0.41		0.27
Clearance Time (s)	5.2	4.9			4.9	5.2	5.9			5.2		
Vehicle Extension (s)	2.0	4.5			4.5	2.0	3.3			2.0		
Lane Grp Cap (vph)	443	2517			1788	1217	847		1568	1387		403
v/s Ratio Prot	0.16	0.26			c0.38	0.17	c0.39			0.16		c0.33
v/s Ratio Perm						0.16			0.51			
v/c Ratio	1.06	0.48			1.08	0.42	1.48		0.51	0.40		1.24
Uniform Delay, d1	59.4	20.3			45.2	5.8	51.6		0.0	29.3		51.3
Progression Factor	0.85	0.79			1.11	1.28	1.00		1.00	1.00		1.00
Incremental Delay, d2	55.4	0.5			42.4	0.1	221.0		1.2	0.1		129.1
Delay (s)	106.2	16.6			92.7	7.5	272.6		1.2	29.4		180.4
Level of Service	F	B			F	A	F		A	C		F
Approach Delay (s)		41.7			74.6			167.1			101.1	
Approach LOS		D			E			F			F	

Intersection Summary

HCM Average Control Delay	97.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	98.9%	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												
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	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1752	3471	1568	3433	3469		1665	1679	1583		1846	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1752	3471	1568	3433	3469		1665	1679	1583		1846	1524
Volume (vph)	34	1687	441	545	1550	9	513	22	484	20	14	41
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.96	0.96	0.96	0.68	0.68	0.68
Adj. Flow (vph)	37	1834	479	568	1615	9	534	23	504	29	21	60
RTOR Reduction (vph)	0	0	139	0	0	0	0	0	35	0	0	58
Lane Group Flow (vph)	37	1834	340	568	1624	0	267	290	469	0	50	2
Heavy Vehicles (%)	3%	4%	3%	2%	4%	0%	3%	0%	2%	0%	0%	6%
Turn Type	Prot		Perm	Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2						8			7
Actuated Green, G (s)	4.8	79.2	79.2	20.5	97.4		14.1	14.1	34.6		4.8	4.8
Effective Green, g (s)	4.5	81.1	81.1	21.7	98.3		16.0	16.0	37.7		5.2	5.2
Actuated g/C Ratio	0.03	0.58	0.58	0.16	0.70		0.11	0.11	0.27		0.04	0.04
Clearance Time (s)	3.7	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	4.4
Vehicle Extension (s)	3.0	5.7	5.7	5.7	3.0		5.6	5.6	5.7		3.0	3.0
Lane Grp Cap (vph)	56	2011	908	532	2436		190	192	472		69	57
v/s Ratio Prot	0.02	c0.53		c0.17	0.47		0.16	c0.17	0.15		c0.03	
v/s Ratio Perm			0.22						0.14			0.00
v/c Ratio	0.66	0.91	0.37	1.07	0.67		1.41	1.51	0.99		0.72	0.04
Uniform Delay, d1	67.0	26.3	15.8	59.2	11.7		62.0	62.0	51.0		66.7	65.0
Progression Factor	0.96	0.95	1.05	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	23.2	7.1	1.1	58.3	1.5		210.8	254.7	39.7		31.2	0.3
Delay (s)	87.2	31.9	17.6	117.5	13.1		272.8	316.7	90.7		97.8	65.3
Level of Service	F	C	B	F	B		F	F	F		F	E
Approach Delay (s)		29.9			40.2			198.3			80.1	
Approach LOS		C			D			F			F	

Intersection Summary

HCM Average Control Delay	66.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.6%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1781		1770	1863	1583	1770	3410		1770	3448	
Flt Permitted	0.64	1.00		0.45	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1201	1781		838	1863	1583	1770	3410		1770	3448	
Volume (vph)	121	113	47	127	89	66	25	842	201	38	945	124
Peak-hour factor, PHF	0.87	0.87	0.87	0.86	0.86	0.86	0.91	0.91	0.91	0.94	0.94	0.94
Adj. Flow (vph)	139	130	54	148	103	77	27	925	221	40	1005	132
RTOR Reduction (vph)	0	0	0	0	0	63	0	0	0	0	0	0
Lane Group Flow (vph)	139	184	0	148	103	14	27	1146	0	40	1137	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	19.5	19.5		19.5	19.5	19.5	4.3	70.2		4.8	70.7	
Effective Green, g (s)	20.1	20.1		20.1	20.1	20.1	4.3	71.1		4.8	71.6	
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.19	0.04	0.66		0.04	0.66	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	224	331		156	347	295	70	2245		79	2286	
v/s Ratio Prot		0.10			0.06		0.02	c0.34		c0.02	0.33	
v/s Ratio Perm	0.12			c0.18		0.01						
v/c Ratio	0.62	0.56		0.95	0.30	0.05	0.39	0.51		0.51	0.50	
Uniform Delay, d1	40.4	39.9		43.4	37.9	36.1	50.6	9.5		50.4	9.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.21	0.21		1.00	1.00	
Incremental Delay, d2	4.6	1.6		56.2	0.3	0.0	1.1	0.7		1.9	0.8	
Delay (s)	45.0	41.5		99.6	38.2	36.1	62.5	2.8		52.3	9.9	
Level of Service	D	D		F	D	D	E	A		D	A	
Approach Delay (s)		43.0			65.4			4.1			11.4	
Approach LOS		D			E			A			B	

Intersection Summary

HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.4%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1628		1770	1863	1583	1770	3474		1770	3499	
Flt Permitted	0.75	1.00		0.40	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1390	1628		739	1863	1583	1770	3474		1770	3499	
Volume (vph)	30	24	124	62	15	28	31	1067	71	29	1102	13
Peak-hour factor, PHF	0.79	0.79	0.79	0.88	0.88	0.88	0.91	0.91	0.91	0.92	0.92	0.92
Adj. Flow (vph)	38	30	157	70	17	32	34	1173	78	32	1198	14
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	0	0	0	0
Lane Group Flow (vph)	38	187	0	70	17	5	34	1251	0	32	1212	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	16.6	16.6		16.6	16.6	16.6	7.2	73.9		4.5	71.2	
Effective Green, g (s)	17.2	17.2		17.2	17.2	17.2	7.2	74.3		4.5	71.6	
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.16	0.07	0.69		0.04	0.66	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	221	259		118	297	252	118	2390		74	2320	
v/s Ratio Prot		c0.11			0.01		0.02	c0.36		0.02	c0.35	
v/s Ratio Perm	0.03			0.09		0.00						
v/c Ratio	0.17	0.72		0.59	0.06	0.02	0.29	0.52		0.43	0.52	
Uniform Delay, d1	39.2	43.1		42.2	38.5	38.3	48.0	8.2		50.5	9.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.72	0.10		1.10	0.68	
Incremental Delay, d2	0.3	9.0		6.5	0.1	0.0	0.4	0.7		1.3	0.7	
Delay (s)	39.5	52.1		48.7	38.6	38.3	35.0	1.6		56.8	7.1	
Level of Service	D	D		D	D	D	C	A		E	A	
Approach Delay (s)		50.0			44.5			2.4			8.4	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.96		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3356		3473		1770	3505
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3356		3473		1770	3505
Volume (vph)	167	53	1092	77	36	1133
Peak-hour factor, PHF	0.79	0.79	0.96	0.96	0.98	0.98
Adj. Flow (vph)	211	67	1138	80	37	1156
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	278	0	1218	0	37	1156
Heavy Vehicles (%)	2%	2%	3%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	12.7		74.6		7.2	85.8
Effective Green, g (s)	13.3		75.5		7.2	86.7
Actuated g/C Ratio	0.12		0.70		0.07	0.80
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	413		2428		118	2814
v/s Ratio Prot	c0.08		c0.35		0.02	c0.33
v/s Ratio Perm						
v/c Ratio	0.67		0.50		0.31	0.41
Uniform Delay, d1	45.3		7.5		48.0	3.1
Progression Factor	1.00		0.22		1.15	1.03
Incremental Delay, d2	3.4		0.3		0.5	0.4
Delay (s)	48.7		2.0		55.5	3.6
Level of Service	D		A		E	A
Approach Delay (s)	48.7		2.0			5.2
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	*0.83	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	*0.75	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)	2474	3505	1583	2891	3505	1583	3400	3505	1568	3433	2794	1333
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)	2474	3505	1583	2891	3505	1583	3400	3505	1568	3433	2794	1333
Volume (vph)	515	571	337	483	926	73	333	574	307	62	672	614
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.99	0.99	0.99	0.88	0.88	0.88
Adj. Flow (vph)	554	614	362	519	996	78	336	580	310	70	764	698
RTOR Reduction (vph)	0	0	63	0	0	10	0	0	31	0	0	8
Lane Group Flow (vph)	554	614	299	519	996	68	336	580	279	70	764	690
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	17.0	29.3	29.3	20.0	32.3	32.3	11.0	34.8	34.8	5.7	29.5	46.5
Effective Green, g (s)	17.0	30.6	30.6	20.0	33.6	33.6	11.0	35.7	35.7	5.7	30.4	47.4
Actuated g/C Ratio	0.16	0.28	0.28	0.19	0.31	0.31	0.10	0.33	0.33	0.05	0.28	0.44
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	389	993	449	535	1090	492	346	1159	518	181	786	585
v/s Ratio Prot	c0.22	0.18		0.18	c0.28		c0.10	0.17		0.02	0.27	c0.19
v/s Ratio Perm			0.19			0.04			0.18			0.33
v/c Ratio	1.42	0.62	0.67	0.97	0.91	0.14	0.97	0.50	0.54	0.39	0.97	1.18
Uniform Delay, d1	45.5	33.6	34.2	43.7	35.8	26.8	48.3	29.0	29.4	49.5	38.4	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.79	0.71
Incremental Delay, d2	205.3	1.0	3.3	31.1	11.5	0.1	40.3	1.5	4.0	0.5	24.9	96.6
Delay (s)	250.8	34.6	37.5	74.9	47.3	26.9	88.7	30.5	33.4	40.5	55.2	118.0
Level of Service	F	C	D	E	D	C	F	C	C	D	E	F
Approach Delay (s)		113.6			55.3			47.2			83.1	
Approach LOS		F			E			D			F	

Intersection Summary

HCM Average Control Delay	76.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2191	2093	17	0	11
Peak Hour Factor	0.93	0.93	0.96	0.96	0.50	0.50
Hourly flow rate (vph)	0	2356	2180	18	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.50	
vC, conflicting volume	2198				3367	1099
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2198				4729	1099
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	89
cM capacity (veh/h)	236				0	207

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1178	1178	1453	744	22
Volume Left	0	0	0	0	0
Volume Right	0	0	0	18	22
cSH	1700	1700	1700	1700	207
Volume to Capacity	0.69	0.69	0.85	0.44	0.11
Queue Length 95th (ft)	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	24.4
Lane LOS					C
Approach Delay (s)	0.0		0.0		24.4
Approach LOS					C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	29	2166	2064	14	3	46
Peak Hour Factor	0.91	0.91	0.98	0.98	0.78	0.78
Hourly flow rate (vph)	32	2380	2106	14	4	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.49	
vC, conflicting volume	2120				3367	1060
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2120				4798	1060
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				0	73
cM capacity (veh/h)	254				0	220

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	32	1190	1190	1404	716	63
Volume Left	32	0	0	0	0	4
Volume Right	0	0	0	0	14	59
cSH	254	1700	1700	1700	1700	4
Volume to Capacity	0.13	0.70	0.70	0.83	0.42	17.15
Queue Length 95th (ft)	11	0	0	0	0	Err
Control Delay (s)	21.2	0.0	0.0	0.0	0.0	Err
Lane LOS	C					F
Approach Delay (s)	0.3			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	136.8		
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	34	2108	23	10	2011	6	0	7	6	4	5	67
Peak Hour Factor	1.00	1.00	1.00	0.93	0.93	0.93	0.58	0.58	0.58	0.67	0.67	0.67
Hourly flow rate (vph)	34	2108	23	11	2162	6	0	12	10	6	7	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1071										
pX, platoon unblocked				0.52			0.52	0.52	0.52	0.52	0.52	
vC, conflicting volume	2169			2131			3294	4378	1066	3315	4386	1084
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2169			2253			4500	6594	194	4541	6610	1084
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	86			91			0	0	98	0	0	53
cM capacity (veh/h)	243			116			0	0	421	0	0	212

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	34	1405	726	11	1442	727	22	113
Volume Left	34	0	0	11	0	0	0	6
Volume Right	0	0	23	0	0	6	10	100
cSH	243	1700	1700	116	1700	1700	0	0
Volume to Capacity	0.14	0.83	0.43	0.09	0.85	0.43	722.05	Err
Queue Length 95th (ft)	12	0	0	7	0	0	Err	Err
Control Delay (s)	22.2	0.0	0.0	39.1	0.0	0.0	Err	Err
Lane LOS	C			E			F	F
Approach Delay (s)	0.3			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	303.4		
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2099	13	9	2015	8	3	2	6	0	5	9
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.50	0.50	0.50	0.56	0.56	0.56
Hourly flow rate (vph)	6	2209	14	9	2099	8	6	4	12	0	9	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2107			2223			3302	4355	1112	3241	4358	1054
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2107			2223			3302	4355	1112	3241	4358	1054
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			96			0	0	94	0	0	93
cM capacity (veh/h)	257			231			0	2	203	0	1	222

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	1473	750	9	1399	708	22	25
Volume Left	6	0	0	9	0	0	6	0
Volume Right	0	0	14	0	0	8	12	16
cSH	257	1700	1700	231	1700	1700	0	4
Volume to Capacity	0.02	0.87	0.44	0.04	0.82	0.42	240.82	6.02
Queue Length 95th (ft)	2	0	0	3	0	0	Err	Err
Control Delay (s)	19.4	0.0	0.0	21.2	0.0	0.0	Err	Err
Lane LOS	C			C			F	F
Approach Delay (s)	0.1			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	107.0		
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	2100	2	9	2021	18	2	1	2	8	1	9
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.42	0.42	0.42	0.50	0.50	0.50
Hourly flow rate (vph)	3	2211	2	9	2105	19	5	2	5	16	2	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2124			2213			3290	4361	1106	3246	4352	1062
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2124			2213			3290	4361	1106	3246	4352	1062
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			0	0	98	0	0	92
cM capacity (veh/h)	253			233			0	2	205	0	2	220

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	3	1474	739	9	1403	720	12	36
Volume Left	3	0	0	9	0	0	5	16
Volume Right	0	0	2	0	0	19	5	18
cSH	253	1700	1700	233	1700	1700	0	0
Volume to Capacity	0.01	0.87	0.43	0.04	0.83	0.42	148.91	2697.97
Queue Length 95th (ft)	1	0	0	3	0	0	Err	Err
Control Delay (s)	19.4	0.0	0.0	21.1	0.0	0.0	Err	Err
Lane LOS	C			C			F	F
Approach Delay (s)	0.0			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	109.0		
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	2088	6	6	2027	10	2	3	6	0	0	19
Peak Hour Factor	0.96	0.96	0.96	0.95	0.95	0.95	0.70	0.70	0.70	0.61	0.61	0.61
Hourly flow rate (vph)	17	2175	6	6	2134	11	3	4	9	0	0	31
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2144			2181			3291	4368	1091	3275	4366	1072
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2144			2181			3291	4368	1091	3275	4366	1072
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			97			0	0	96	0	100	86
cM capacity (veh/h)	248			240			3	1	210	0	1	216

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	1450	731	6	1422	722	16	31
Volume Left	17	0	0	6	0	0	3	0
Volume Right	0	0	6	0	0	11	9	31
cSH	248	1700	1700	240	1700	1700	4	108
Volume to Capacity	0.07	0.85	0.43	0.03	0.84	0.42	3.96	0.29
Queue Length 95th (ft)	5	0	0	2	0	0	Err	27
Control Delay (s)	20.5	0.0	0.0	20.4	0.0	0.0	Err	51.3
Lane LOS	C			C			F	F
Approach Delay (s)	0.2			0.1			Err	51.3
Approach LOS							F	F

Intersection Summary			
Average Delay	36.2		
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	18	2071	5	15	2012	18	9	18	3	2	9	22
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.67	0.67	0.67	0.60	0.60	0.60
Hourly flow rate (vph)	19	2135	5	16	2163	19	13	27	4	3	15	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2183			2140			3296	4390	1070	3323	4383	1091
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2183			2140			3296	4390	1070	3323	4383	1091
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			94			0	0	98	0	0	83
cM capacity (veh/h)	240			249			0	1	217	0	1	210

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	19	1423	717	16	1442	741	45	55
Volume Left	19	0	0	16	0	0	13	3
Volume Right	0	0	5	0	0	19	4	37
cSH	240	1700	1700	249	1700	1700	0	0
Volume to Capacity	0.08	0.84	0.42	0.06	0.85	0.44	2601.35	438.74
Queue Length 95th (ft)	6	0	0	5	0	0	Err	Err
Control Delay (s)	21.3	0.0	0.0	20.4	0.0	0.0	Err	Err
Lane LOS	C			C			F	F
Approach Delay (s)	0.2			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	224.0		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2064	5	1	2026	2	8	7	8	8	2	11
Peak Hour Factor	0.95	0.95	0.95	0.89	0.89	0.89	0.79	0.79	0.79	0.59	0.59	0.59
Hourly flow rate (vph)	7	2173	5	1	2276	2	10	9	10	14	3	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2279			2178			3332	4471	1089	3385	4472	1139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2279			2178			3332	4471	1089	3385	4472	1139
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			0	0	95	0	0	90
cM capacity (veh/h)	220			241			0	1	211	0	1	195

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	7	1448	729	1	1518	761	29	36
Volume Left	7	0	0	1	0	0	10	14
Volume Right	0	0	5	0	0	2	10	19
cSH	220	1700	1700	241	1700	1700	0	0
Volume to Capacity	0.03	0.85	0.43	0.00	0.89	0.45	854.50	1585.87
Queue Length 95th (ft)	3	0	0	0	0	0	Err	Err
Control Delay (s)	22.0	0.0	0.0	20.0	0.0	0.0	Err	Err
Lane LOS	C			C			F	F
Approach Delay (s)	0.1			0.0			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	142.9		
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	29	2044	7	15	2002	13	6	5	3	9	2	21
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.57	0.57	0.57	0.83	0.83	0.83
Hourly flow rate (vph)	31	2174	7	17	2328	15	11	9	5	11	2	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2343			2182			3440	4618	1091	3524	4614	1172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2343			2182			3440	4618	1091	3524	4614	1172
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			93			0	0	97	0	0	86
cM capacity (veh/h)	207			240			0	1	210	0	1	185

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	31	1450	732	17	1552	791	25	39
Volume Left	31	0	0	17	0	0	11	11
Volume Right	0	0	7	0	0	15	5	25
cSH	207	1700	1700	240	1700	1700	0	0
Volume to Capacity	0.15	0.85	0.43	0.07	0.91	0.47	1400.96	1651.61
Queue Length 95th (ft)	13	0	0	6	0	0	Err	Err
Control Delay (s)	25.4	0.0	0.0	21.2	0.0	0.0	Err	Err
Lane LOS	D			C			F	F
Approach Delay (s)	0.4			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	136.4		
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	1	2022	7	2	3	0	0	1	6
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.25	0.25	0.25	0.44	0.44	0.44
Hourly flow rate (vph)	0	0	0	1	2128	7	8	12	0	0	2	14
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)					1079							
pX, platoon unblocked	0.53						0.53	0.53		0.53	0.53	0.53
vC, conflicting volume	2136			0			1067	2138	0	2140	2134	1068
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2258			0			228	2262	0	2266	2255	229
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	43	100	100	89	97
cM capacity (veh/h)	118			1622			331	21	1084	6	21	407

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	1065	1072	20	16
Volume Left	1	0	8	0
Volume Right	0	7	0	14
cSH	1622	1700	34	150
Volume to Capacity	0.00	0.63	0.59	0.11
Queue Length 95th (ft)	0	0	50	9
Control Delay (s)	0.0	0.0	210.3	39.5
Lane LOS	A		F	E
Approach Delay (s)	0.0		210.3	39.5
Approach LOS			F	E

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	8	2020	11	7	6	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.70	0.70	0.70	0.43	0.43	0.43
Hourly flow rate (vph)	0	0	0	10	2405	13	10	9	0	0	19	7
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)					724							
pX, platoon unblocked	0.66						0.66	0.66		0.66	0.66	0.66
vC, conflicting volume	2418			0			833	2437	0	2435	2430	808
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2119			0			0	2148	0	2145	2138	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	73	100	100	42	99
cM capacity (veh/h)	168			1622			357	31	1084	14	32	717

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	611	1202	614	19	26
Volume Left	10	0	0	10	0
Volume Right	0	0	13	0	7
cSH	1622	1700	1700	62	44
Volume to Capacity	0.01	0.71	0.36	0.30	0.58
Queue Length 95th (ft)	0	0	0	27	54
Control Delay (s)	0.2	0.0	0.0	86.9	163.5
Lane LOS	A			F	F
Approach Delay (s)	0.0			86.9	163.5
Approach LOS				F	F

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	10	2014	6	4	3	0	0	5	21
Peak Hour Factor	0.92	0.92	0.92	0.85	0.85	0.85	0.50	0.50	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	12	2369	7	8	6	0	0	5	23
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)					361							
pX, platoon unblocked	0.66						0.66	0.66		0.66	0.66	0.66
vC, conflicting volume	2376			0			816	2400	0	2399	2396	793
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2049			0			0	2085	0	2084	2079	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	82	100	100	84	97
cM capacity (veh/h)	177			1622			567	34	1084	17	34	711

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	604	1185	599	14	28
Volume Left	12	0	0	8	0
Volume Right	0	0	7	0	23
cSH	1622	1700	1700	74	179
Volume to Capacity	0.01	0.70	0.35	0.19	0.16
Queue Length 95th (ft)	1	0	0	16	14
Control Delay (s)	0.2	0.0	0.0	65.1	33.0
Lane LOS	A			F	D
Approach Delay (s)	0.1			65.1	33.0
Approach LOS				F	D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.95	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					4965		1736	3471			3309	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					4965		1736	3471			3309	
Volume (vph)	0	0	0	141	1766	11	88	401	0	0	390	176
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.87	0.87	0.74	0.74	0.74	0.76	0.76	0.76
Adj. Flow (vph)	0	0	0	162	2030	13	119	542	0	0	513	232
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	31	0
Lane Group Flow (vph)	0	0	0	0	2204	0	119	542	0	0	714	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	0%	0%	4%	4%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					49.1		9.0	29.7			17.0	
Effective Green, g (s)					49.7		8.7	30.3			17.6	
Actuated g/C Ratio					0.56		0.10	0.34			0.20	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2804		172	1195			662	
v/s Ratio Prot							c0.07	0.16			c0.22	
v/s Ratio Perm					0.44							
v/c Ratio					0.79		0.69	0.45			1.08	
Uniform Delay, d1					15.0		38.4	22.4			35.2	
Progression Factor					0.47		1.15	1.22			1.00	
Incremental Delay, d2					1.8		4.1	0.5			58.0	
Delay (s)					8.8		48.4	27.8			93.2	
Level of Service					A		D	C			F	
Approach Delay (s)		0.0			8.8			31.5			93.2	
Approach LOS		A			A			C			F	

Intersection Summary

HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	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
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	19	1858	36	9	18	0	0	19	51
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.73	0.73	0.73	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	0	20	1956	38	12	25	0	0	24	64
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)		346			345							
pX, platoon unblocked	0.71						0.71	0.71		0.71	0.71	0.71
vC, conflicting volume	1994			0			704	2034	0	2027	2015	671
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1585			0			0	1641	0	1632	1615	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	65	100	100	67	92
cM capacity (veh/h)	292			1622			493	70	1084	34	72	771

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	509	978	527	37	88
Volume Left	20	0	0	12	0
Volume Right	0	0	38	0	64
cSH	1622	1700	1700	98	266
Volume to Capacity	0.01	0.58	0.31	0.38	0.33
Queue Length 95th (ft)	1	0	0	38	35
Control Delay (s)	0.4	0.0	0.0	62.9	28.4
Lane LOS	A			F	D
Approach Delay (s)	0.1			62.9	28.4
Approach LOS				F	D

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4956		1770	1863			3401	
Flt Permitted					0.99		0.45	1.00			1.00	
Satd. Flow (perm)					4956		841	1863			3401	
Volume (vph)	0	0	0	221	1699	43	137	194	0	0	219	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.74	0.74	0.74
Adj. Flow (vph)	0	0	0	233	1788	45	149	211	0	0	296	104
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	0	2063	0	149	211	0	0	390	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					48.8		28.0	28.0			28.0	
Effective Green, g (s)					50.4		29.6	29.6			29.6	
Actuated g/C Ratio					0.57		0.34	0.34			0.34	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					2838		283	627			1144	
v/s Ratio Prot								0.11			0.11	
v/s Ratio Perm					0.42		c0.18					
v/c Ratio					0.73		0.53	0.34			0.34	
Uniform Delay, d1					13.8		23.5	21.9			21.9	
Progression Factor					0.38		0.88	0.83			1.00	
Incremental Delay, d2					1.2		5.7	1.2			0.8	
Delay (s)					6.5		26.4	19.4			22.7	
Level of Service					A		C	B			C	
Approach Delay (s)		0.0			6.5			22.3			22.7	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	48	1863	21	11	9	0	0	12	89
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.58	0.58	0.58	0.72	0.72	0.72
Hourly flow rate (vph)	0	0	0	52	2003	23	19	16	0	0	17	124
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)		373			371							
pX, platoon unblocked	0.72						0.72	0.72		0.72	0.72	0.72
vC, conflicting volume	2026			0			779	2129	0	2126	2118	679
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1650			0			0	1793	0	1788	1778	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			96	72	100	100	71	84
cM capacity (veh/h)	280			1622			470	56	1084	28	57	783

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	552	1002	523	34	140
Volume Left	52	0	0	19	0
Volume Right	0	0	23	0	124
cSH	1622	1700	1700	108	480
Volume to Capacity	0.03	0.59	0.31	0.32	0.29
Queue Length 95th (ft)	2	0	0	31	30
Control Delay (s)	1.0	0.0	0.0	53.1	20.2
Lane LOS	A			F	C
Approach Delay (s)	0.3			53.1	20.2
Approach LOS				F	C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4955		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4955		1770	3539			3539	1583
Volume (vph)	0	0	0	148	1615	56	133	470	0	0	589	184
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	161	1755	61	146	516	0	0	647	202
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	0	0	1973	0	146	516	0	0	647	177
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					48.6		8.0	30.2			18.0	18.0
Effective Green, g (s)					49.2		8.2	30.8			18.6	18.6
Actuated g/C Ratio					0.56		0.09	0.35			0.21	0.21
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2770		165	1239			748	335
v/s Ratio Prot							c0.08	0.15			c0.18	
v/s Ratio Perm					0.40							0.11
v/c Ratio					0.71		0.88	0.42			0.86	0.53
Uniform Delay, d1					14.2		39.4	21.8			33.5	30.8
Progression Factor					0.26		1.34	0.61			1.00	1.00
Incremental Delay, d2					1.4		34.5	0.9			12.7	5.8
Delay (s)					5.2		87.3	14.1			46.2	36.6
Level of Service					A		F	B			D	D
Approach Delay (s)		0.0			5.2			30.3			43.9	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	19.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	37	1733	20	42	41	0	0	24	24
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.75	0.75	0.75	0.80	0.80	0.80
Hourly flow rate (vph)	0	0	0	39	1824	21	56	55	0	0	30	30
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)		381			357							
pX, platoon unblocked	0.86						0.86	0.86		0.86	0.86	0.86
vC, conflicting volume	1845			0			701	1923	0	1940	1913	619
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1650			0			313	1741	0	1761	1729	217
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			83	24	100	100	59	96
cM capacity (veh/h)	331			1622			337	72	1084	17	73	674

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	495	912	477	56	55	60
Volume Left	39	0	0	56	0	0
Volume Right	0	0	21	0	0	30
cSH	1622	1700	1700	337	72	146
Volume to Capacity	0.02	0.54	0.28	0.17	0.76	0.41
Queue Length 95th (ft)	2	0	0	15	90	45
Control Delay (s)	0.8	0.0	0.0	17.8	143.3	47.9
Lane LOS	A			C	F	E
Approach Delay (s)	0.2			79.8		47.9
Approach LOS				F		E

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4967		1770	1863			1863	1583
Flt Permitted					1.00		0.73	1.00			1.00	1.00
Satd. Flow (perm)					4967		1352	1863			1863	1583
Volume (vph)	0	0	0	186	1742	18	55	66	0	0	35	13
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.77	0.77	0.77	0.73	0.73	0.73
Adj. Flow (vph)	0	0	0	202	1893	20	71	86	0	0	48	18
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	0	0	0	2114	0	71	86	0	0	48	8
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					67.2		9.7	9.7			9.7	9.7
Effective Green, g (s)					68.8		11.2	11.2			11.2	11.2
Actuated g/C Ratio					0.78		0.13	0.13			0.13	0.13
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3883		172	237			237	201
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm					0.43		c0.05					0.00
v/c Ratio					0.54		0.41	0.36			0.20	0.04
Uniform Delay, d1					3.6		35.4	35.1			34.4	33.7
Progression Factor					1.49		1.50	1.51			1.00	1.00
Incremental Delay, d2					0.4		0.5	0.3			0.2	0.0
Delay (s)					5.8		53.7	53.2			34.6	33.7
Level of Service					A		D	D			C	C
Approach Delay (s)		0.0			5.8			53.4			34.3	
Approach LOS		A			A			D			C	

Intersection Summary

HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.1%	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												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4976		1770	1863			1863	1583
Flt Permitted					1.00		0.69	1.00			1.00	1.00
Satd. Flow (perm)					4976		1291	1863			1863	1583
Volume (vph)	0	0	0	6	1791	31	79	130	0	0	86	76
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.84	0.84	0.84	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	7	2012	35	94	155	0	0	99	87
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	6
Lane Group Flow (vph)	0	0	0	0	2052	0	94	155	0	0	99	81
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					48.9		28.0	28.0			28.0	28.0
Effective Green, g (s)					50.5		29.5	29.5			29.5	29.5
Actuated g/C Ratio					0.57		0.34	0.34			0.34	0.34
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					2856		433	625			625	531
v/s Ratio Prot								c0.08			0.05	
v/s Ratio Perm					0.41		0.07					0.05
v/c Ratio					0.72		0.22	0.25			0.16	0.15
Uniform Delay, d1					13.6		21.0	21.2			20.5	20.5
Progression Factor					1.00		1.09	1.09			1.00	1.00
Incremental Delay, d2					1.6		1.0	0.8			0.5	0.6
Delay (s)					15.2		23.9	24.0			21.1	21.1
Level of Service					B		C	C			C	C
Approach Delay (s)		0.0			15.2			23.9			21.1	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2047	3	0	0	0	0	2	4	23	4	0
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.92	0.42	0.42	0.42	0.71	0.71	0.71
Hourly flow rate (vph)	7	2274	3	0	0	0	0	5	10	32	6	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)					728							
pX, platoon unblocked												
vC, conflicting volume	0			2278			2292	2289	760	774	2291	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2278			2292	2289	760	774	2291	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	88	97	87	85	100
cM capacity (veh/h)	1622			220			19	39	349	253	39	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	575	1137	572	14	38
Volume Left	7	0	0	0	32
Volume Right	0	0	3	10	0
cSH	1622	1700	1700	116	139
Volume to Capacity	0.00	0.67	0.34	0.12	0.27
Queue Length 95th (ft)	0	0	0	10	26
Control Delay (s)	0.1	0.0	0.0	47.4	40.5
Lane LOS	A			E	E
Approach Delay (s)	0.0			47.4	40.5
Approach LOS				E	E

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	2060	5	0	0	0	0	5	7	5	3	0
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.50	0.50	0.50	0.44	0.44	0.44
Hourly flow rate (vph)	10	2215	5	0	0	0	0	10	14	11	7	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			2220			2241	2237	741	763	2240	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2220			2241	2237	741	763	2240	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	76	96	95	84	100
cM capacity (veh/h)	1622			232			20	42	359	229	41	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	563	1108	559	24	18
Volume Left	10	0	0	0	11
Volume Right	0	0	5	14	0
cSH	1622	1700	1700	100	85
Volume to Capacity	0.01	0.65	0.33	0.24	0.21
Queue Length 95th (ft)	0	0	0	22	19
Control Delay (s)	0.2	0.0	0.0	57.7	58.6
Lane LOS	A			F	F
Approach Delay (s)	0.0			57.7	58.6
Approach LOS				F	F

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4962						3336		1736	3471	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		4962						3336		1736	3471	
Volume (vph)	114	1924	34	0	0	0	0	413	145	137	394	0
Peak-hour factor, PHF	0.97	0.97	0.97	0.92	0.92	0.92	0.80	0.80	0.80	0.72	0.72	0.72
Adj. Flow (vph)	118	1984	35	0	0	0	0	516	181	190	547	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	2135	0	0	0	0	0	675	0	190	547	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	0%	4%	4%	4%	4%	0%
Turn Type	Perm									Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2											
Actuated Green, G (s)		45.6						17.0		10.0	31.2	
Effective Green, g (s)		47.2						18.6		10.2	32.8	
Actuated g/C Ratio		0.54						0.21		0.12	0.37	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		5.6						4.4		2.0	5.9	
Lane Grp Cap (vph)		2661						705		201	1294	
v/s Ratio Prot								c0.20		c0.11	0.16	
v/s Ratio Perm		0.43										
v/c Ratio		0.80						0.96		0.95	0.42	
Uniform Delay, d1		16.6						34.3		38.6	20.6	
Progression Factor		1.00						1.00		0.72	0.97	
Incremental Delay, d2		2.7						24.9		25.5	0.4	
Delay (s)		19.3						59.2		53.4	20.3	
Level of Service		B						E		D	C	
Approach Delay (s)		19.3			0.0			59.2			28.8	
Approach LOS		B			A			E			C	

Intersection Summary

HCM Average Control Delay	29.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.9%	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
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2178	21	0	0	0	0	9	33	35	13	0
Peak Hour Factor	0.99	0.99	0.99	0.92	0.92	0.92	0.59	0.59	0.59	0.83	0.83	0.83
Hourly flow rate (vph)	7	2200	21	0	0	0	0	15	56	42	16	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)		346			345							
pX, platoon unblocked				0.66			0.66	0.66	0.66	0.66	0.66	
vC, conflicting volume	0			2221			2233	2225	744	755	2235	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			1821			1839	1827	0	0	1843	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	69	92	91	68	100
cM capacity (veh/h)	1622			220			23	50	717	474	49	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	557	1100	571	71	58
Volume Left	7	0	0	0	42
Volume Right	0	0	21	56	0
cSH	1622	1700	1700	233	141
Volume to Capacity	0.00	0.65	0.34	0.31	0.41
Queue Length 95th (ft)	0	0	0	31	44
Control Delay (s)	0.1	0.0	0.0	30.9	47.1
Lane LOS	A			D	E
Approach Delay (s)	0.0			30.9	47.1
Approach LOS				D	E

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4972						3297		1770	1863	
Flt Permitted		1.00						1.00		0.33	1.00	
Satd. Flow (perm)		4972						3297		609	1863	
Volume (vph)	70	2140	36	0	0	0	0	249	209	51	402	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.83	0.83	0.83	0.93	0.93	0.93
Adj. Flow (vph)	73	2229	38	0	0	0	0	300	252	55	432	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	2338	0	0	0	0	0	548	0	55	432	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.3						27.0		27.0	27.0	
Effective Green, g (s)		51.8						28.2		28.2	28.2	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		2927						1057		195	597	
v/s Ratio Prot								0.17			c0.23	
v/s Ratio Perm		0.47								0.09		
v/c Ratio		0.80						0.52		0.28	0.72	
Uniform Delay, d1		14.1						24.4		22.3	26.5	
Progression Factor		0.56						1.00		1.33	1.32	
Incremental Delay, d2		1.5						1.8		3.1	6.5	
Delay (s)		9.3						26.2		32.9	41.5	
Level of Service		A						C		C	D	
Approach Delay (s)		9.3			0.0			26.2			40.5	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	2369	22	0	0	0	0	11	42	18	33	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.69	0.69	0.69	0.77	0.77	0.77
Hourly flow rate (vph)	9	2494	23	0	0	0	0	16	61	23	43	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)		373			371							
pX, platoon unblocked				0.63			0.63	0.63	0.63	0.63	0.63	
vC, conflicting volume	0			2517			2546	2524	843	858	2536	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2232			2278	2244	0	0	2262	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	39	91	92	0	100
cM capacity (veh/h)	1622			144			0	26	682	297	25	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	633	1247	647	77	66
Volume Left	9	0	0	0	23
Volume Right	0	0	23	61	0
cSH	1622	1700	1700	125	37
Volume to Capacity	0.01	0.73	0.38	0.61	1.78
Queue Length 95th (ft)	0	0	0	79	178
Control Delay (s)	0.2	0.0	0.0	64.9	604.4
Lane LOS	A			F	F
Approach Delay (s)	0.0			64.9	604.4
Approach LOS				F	F

Intersection Summary			
Average Delay	16.9		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4960						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		4960						3539	1583	1770	3539	
Volume (vph)	175	2191	63	0	0	0	0	342	175	131	616	0
Peak-hour factor, PHF	0.98	0.98	0.98	0.92	0.92	0.92	0.95	0.95	0.95	0.90	0.90	0.90
Adj. Flow (vph)	179	2236	64	0	0	0	0	360	184	146	684	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	27	0	0	0
Lane Group Flow (vph)	0	2476	0	0	0	0	0	360	157	146	684	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2								8			
Actuated Green, G (s)		46.2						17.3	17.3	8.7	30.6	
Effective Green, g (s)		47.8						18.9	18.9	9.3	32.2	
Actuated g/C Ratio		0.54						0.21	0.21	0.11	0.37	
Clearance Time (s)		5.6						5.6	5.6	4.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2694						760	340	187	1295	
v/s Ratio Prot								0.10		c0.08	c0.19	
v/s Ratio Perm		0.50							0.10			
v/c Ratio		0.92						0.47	0.46	0.78	0.53	
Uniform Delay, d1		18.3						30.2	30.1	38.4	21.9	
Progression Factor		0.37						1.00	1.00	1.33	1.27	
Incremental Delay, d2		4.5						2.1	4.5	10.3	0.9	
Delay (s)		11.2						32.3	34.6	61.4	28.8	
Level of Service		B						C	C	E	C	
Approach Delay (s)		11.2			0.0			33.1			34.6	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	19.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	54	2421	22	0	0	0	0	9	13	44	27	0
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.75	0.75	0.75	0.84	0.84	0.84
Hourly flow rate (vph)	56	2522	23	0	0	0	0	12	17	52	32	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)		377			348							
pX, platoon unblocked				0.54			0.54	0.54	0.54	0.54	0.54	
vC, conflicting volume	0			2545			2662	2646	852	959	2657	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2164			2379	2349	0	0	2370	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			0	36	97	79	0	100
cM capacity (veh/h)	1622			133			0	19	590	255	18	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	687	1261	653	29	85
Volume Left	56	0	0	0	52
Volume Right	0	0	23	17	0
cSH	1622	1700	1700	46	43
Volume to Capacity	0.03	0.74	0.38	0.64	1.98
Queue Length 95th (ft)	3	0	0	61	221
Control Delay (s)	1.0	0.0	0.0	157.0	663.3
Lane LOS	A			F	F
Approach Delay (s)	0.3			157.0	663.3
Approach LOS				F	F

Intersection Summary			
Average Delay	22.6		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						1.00	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4972						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.58	1.00	
Satd. Flow (perm)		4972						1863	1583	1075	3539	
Volume (vph)	77	2359	42	0	0	0	0	123	164	72	101	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.79	0.79	0.79	0.93	0.93	0.93
Adj. Flow (vph)	81	2483	44	0	0	0	0	156	208	77	109	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	2606	0	0	0	0	0	156	204	77	109	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		58.4						18.8	18.8	18.8	18.8	
Effective Green, g (s)		60.0						20.0	20.0	20.0	20.0	
Actuated g/C Ratio		0.68						0.23	0.23	0.23	0.23	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3390						423	360	244	804	
v/s Ratio Prot								0.08			0.03	
v/s Ratio Perm		0.52							c0.13	0.07		
v/c Ratio		0.77						0.37	0.57	0.32	0.14	
Uniform Delay, d1		9.4						28.7	30.2	28.3	27.1	
Progression Factor		0.29						1.00	1.00	1.36	1.38	
Incremental Delay, d2		0.9						0.2	1.2	0.2	0.0	
Delay (s)		3.6						28.9	31.4	38.9	37.4	
Level of Service		A						C	C	D	D	
Approach Delay (s)		3.6			0.0			30.3			38.0	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.1%	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												
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		0.91						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4975						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.57	1.00	
Satd. Flow (perm)		4975						1863	1583	1057	1863	
Volume (vph)	71	2490	34	0	0	0	0	126	134	43	80	0
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.73	0.73	0.73	0.68	0.68	0.68
Adj. Flow (vph)	76	2677	37	0	0	0	0	173	184	63	118	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	2789	0	0	0	0	0	173	182	63	118	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3211						491	417	279	491	
v/s Ratio Prot								0.09			0.06	
v/s Ratio Perm		0.56							c0.11	0.06		
v/c Ratio		0.87						0.35	0.44	0.23	0.24	
Uniform Delay, d1		12.6						26.3	27.0	25.4	25.5	
Progression Factor		0.84						1.00	1.00	1.24	1.24	
Incremental Delay, d2		2.3						2.0	3.3	1.9	1.2	
Delay (s)		13.0						28.3	30.2	33.2	32.8	
Level of Service		B						C	C	C	C	
Approach Delay (s)		13.0			0.0			29.3			32.9	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Forecast Year 2035 No Build Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.97	*0.84	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1719	4921		3367	4560	1538	1626	1517		1603	1639	1495
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	1719	4921		3367	4560	1538	1626	1517		1603	1639	1495
Volume (vph)	70	2240	55	310	2205	145	25	5	215	80	10	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	74	2358	58	326	2321	153	29	6	247	96	12	48
RTOR Reduction (vph)	0	0	0	0	0	39	0	0	0	0	0	45
Lane Group Flow (vph)	74	2416	0	326	2321	114	29	253	0	51	57	3
Heavy Vehicles (%)	5%	5%	6%	4%	5%	5%	11%	2%	7%	7%	2%	8%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	10.0	83.5		14.0	87.5	87.5	14.0	14.0		9.6	9.6	9.6
Effective Green, g (s)	10.2	85.8		14.2	89.8	89.8	14.2	14.2		9.8	9.8	9.8
Actuated g/C Ratio	0.07	0.61		0.10	0.64	0.64	0.10	0.10		0.07	0.07	0.07
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	125	3016		342	2925	987	165	154		112	115	105
v/s Ratio Prot	0.04	c0.49		c0.10	c0.51		0.02	c0.17		0.03	c0.03	
v/s Ratio Perm						0.07						0.00
v/c Ratio	0.59	0.80		0.95	0.79	0.12	0.18	1.64		0.46	0.50	0.03
Uniform Delay, d1	62.9	20.6		62.6	18.3	9.7	57.5	62.9		62.5	62.7	60.7
Progression Factor	0.70	0.29		1.10	0.59	0.47	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	1.8		6.7	0.2	0.0	0.2	316.6		1.1	1.2	0.0
Delay (s)	47.6	7.8		75.5	11.1	4.6	57.7	379.5		63.6	63.9	60.7
Level of Service	D	A		E	B	A	E	F		E	E	E
Approach Delay (s)		9.0			18.2			346.4			62.8	
Approach LOS		A			B			F			E	

Intersection Summary

HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	1.00	1.00	1.00			
Frt		0.98	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4584	1286		4940	1468	1656	1509			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4584	1286		4940	1468	1656	1509			
Volume (vph)	0	1615	920	0	2030	1165	450	0	630	0	0
Peak-hour factor, PHF	0.85	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.92	0.92
Adj. Flow (vph)	0	1700	968	0	2137	1226	484	0	677	0	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1975	677	0	2137	1226	484	677	0	0	0
Heavy Vehicles (%)	0%	4%	8%	0%	5%	10%	9%	0%	7%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		111.5	140.0		111.5	140.0	20.0	20.0			
Effective Green, g (s)		111.9	140.0		111.9	140.0	20.1	20.1			
Actuated g/C Ratio		0.80	1.00		0.80	1.00	0.14	0.14			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		3664	1286		3948	1468	238	217			
v/s Ratio Prot		0.43			0.43		0.29	c0.45			
v/s Ratio Perm			0.53			c0.84					
v/c Ratio		0.54	0.53		0.54	0.84	2.03	3.12			
Uniform Delay, d1		5.0	0.0		5.0	0.0	60.0	60.0			
Progression Factor		0.22	1.00		0.73	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.8		0.0	0.6	479.6	966.0			
Delay (s)		1.4	0.8		3.7	0.6	539.5	1025.9			
Level of Service		A	A		A	A	F	F			
Approach Delay (s)		1.2			2.5			823.1		0.0	
Approach LOS		A			A			F		A	

Intersection Summary

HCM Average Control Delay	134.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	84.9%	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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1769		1559	1540	1252	3045	3144		1583	3128	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	1769		1559	1540	1252	3045	3144		1583	3128	
Volume (vph)	350	280	70	175	20	10	375	270	370	55	240	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.87	0.87	0.93	0.93	0.93	0.87	0.87	0.87
Adj. Flow (vph)	380	304	76	201	23	11	403	290	398	63	276	86
RTOR Reduction (vph)	0	8	0	0	0	10	0	180	0	0	23	0
Lane Group Flow (vph)	380	372	0	115	109	1	403	508	0	63	339	0
Heavy Vehicles (%)	8%	4%	5%	10%	23%	29%	15%	6%	4%	14%	12%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	27.9	27.9		13.4	13.4	13.4	8.9	35.0		5.5	30.1	
Effective Green, g (s)	28.1	28.1		13.1	13.1	13.1	10.1	35.6		5.2	30.7	
Actuated g/C Ratio	0.29	0.29		0.13	0.13	0.13	0.10	0.36		0.05	0.31	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	479	507		208	206	167	314	1142		84	980	
v/s Ratio Prot	c0.23	0.21		c0.07	0.07		c0.13	c0.16		0.04	0.11	
v/s Ratio Perm						0.00						
v/c Ratio	0.79	0.73		0.55	0.53	0.01	1.28	0.45		0.75	0.35	
Uniform Delay, d1	32.3	31.6		39.7	39.6	36.8	44.0	23.7		45.8	25.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	5.9		4.0	3.3	0.0	149.7	1.3		27.8	1.0	
Delay (s)	41.6	37.5		43.7	42.9	36.8	193.6	25.0		73.6	26.9	
Level of Service	D	D		D	D	D	F	C		E	C	
Approach Delay (s)		39.5			43.0			87.3			33.8	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	59.6	HCM Level of Service	E
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	98.0	Sum of lost time (s)	12.0
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												
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	*0.90	*0.85			0.91	1.00	0.97		1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.99	1.00		1.00	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	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2954	4704			4988	1514	3242		1583	3303		1417
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2954	4704			4988	1514	3242		1583	3303		1417
Volume (vph)	475	1590	0	0	2015	550	900	0	1100	200	0	280
Peak-hour factor, PHF	0.95	0.95	0.90	0.78	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87
Adj. Flow (vph)	500	1674	0	0	2121	579	947	0	1158	230	0	322
RTOR Reduction (vph)	0	0	0	0	0	2	0	0	0	0	0	4
Lane Group Flow (vph)	500	1674	0	0	2121	577	947	0	1158	230	0	318
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	10%	3%	2%	2%	4%	6%	8%	2%	2%	6%	2%	14%
Turn Type	Prot					pm+ov	Prot		Free	Prot		custom
Protected Phases	5	2			6	4	8			4		5 7
Permitted Phases						6			Free			
Actuated Green, G (s)	19.0	68.6			44.4	106.7	39.0		140.0	62.3		35.4
Effective Green, g (s)	20.2	69.5			45.3	107.8	40.9		140.0	62.5		37.8
Actuated g/C Ratio	0.14	0.50			0.32	0.77	0.29		1.00	0.45		0.27
Clearance Time (s)	5.2	4.9			4.9	4.2	5.9			4.2		
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		
Lane Grp Cap (vph)	426	2335			1614	1209	947		1583	1475		383
v/s Ratio Prot	c0.17	0.36			c0.43	0.21	c0.29			0.07		0.22
v/s Ratio Perm						0.17			c0.73			
v/c Ratio	1.17	0.72			1.31	0.48	1.00		0.73	0.16		0.83
Uniform Delay, d1	59.9	27.6			47.3	5.9	49.5		0.0	23.1		48.1
Progression Factor	1.17	1.32			1.09	1.41	1.00		1.00	1.00		1.00
Incremental Delay, d2	89.7	0.9			142.9	0.2	29.2		3.0	0.1		13.2
Delay (s)	159.9	37.3			194.7	8.4	78.8		3.0	23.1		61.2
Level of Service	F	D			F	A	E		A	C		E
Approach Delay (s)		65.5			154.8			37.1			45.4	
Approach LOS		E			F			D			D	

Intersection Summary

HCM Average Control Delay	88.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	140.0	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												
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	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	1.00
Satd. Flow (prot)	1736	3505	1538	3467	3499		1588	1601	1599		1753	1346
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00		0.97	1.00
Satd. Flow (perm)	1736	3505	1538	3467	3499		1588	1601	1599		1753	1346
Volume (vph)	30	2295	565	850	2120	20	425	10	950	25	20	20
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.78	0.78	0.78
Adj. Flow (vph)	32	2416	595	895	2232	21	457	11	1022	32	26	26
RTOR Reduction (vph)	0	0	134	0	0	0	0	0	26	0	0	25
Lane Group Flow (vph)	32	2416	461	895	2253	0	229	239	996	0	58	1
Heavy Vehicles (%)	4%	3%	5%	1%	3%	5%	8%	0%	1%	5%	6%	20%
Turn Type	Prot		Perm	Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2						8			7
Actuated Green, G (s)	3.6	76.2	76.2	23.5	98.1		14.1	14.1	37.6		4.8	4.8
Effective Green, g (s)	3.8	78.1	78.1	24.7	99.0		16.0	16.0	40.7		5.2	5.2
Actuated g/C Ratio	0.03	0.56	0.56	0.18	0.71		0.11	0.11	0.29		0.04	0.04
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	4.4
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	1.0
Lane Grp Cap (vph)	47	1955	858	612	2474		181	183	465		65	50
v/s Ratio Prot	0.02	c0.69		0.26	0.64		0.14	0.15	c0.38		c0.03	
v/s Ratio Perm			0.30						0.24			0.00
v/c Ratio	0.68	1.24	0.54	1.46	0.91		1.27	1.31	2.14		0.89	0.02
Uniform Delay, d1	67.5	31.0	19.6	57.6	16.9		62.0	62.0	49.7		67.1	64.9
Progression Factor	1.16	0.49	0.31	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	20.9	109.5	1.8	217.0	6.4		155.7	171.4	521.5		73.3	0.1
Delay (s)	99.1	124.6	7.7	274.7	23.3		217.7	233.4	571.1		140.4	65.0
Level of Service	F	F	A	F	C		F	F	F		F	E
Approach Delay (s)		101.5			94.7			462.6			117.1	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	168.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	137.3%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1835		1770	1863	1583	1770	3370		1770	3450	
Flt Permitted	0.66	1.00		0.58	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1235	1835		1082	1863	1583	1770	3370		1770	3450	
Volume (vph)	94	83	9	92	76	86	16	1205	342	89	1197	149
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	113	100	11	106	87	99	17	1296	368	96	1287	160
RTOR Reduction (vph)	0	0	0	0	0	86	0	0	0	0	0	0
Lane Group Flow (vph)	113	111	0	106	87	13	17	1664	0	96	1447	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	13.6	13.6		13.6	13.6	13.6	4.4	72.0		8.9	76.5	
Effective Green, g (s)	14.2	14.2		14.2	14.2	14.2	4.4	72.9		8.9	77.4	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.13	0.04	0.68		0.08	0.72	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	162	241		142	245	208	72	2275		146	2473	
v/s Ratio Prot		0.06			0.05		0.01	c0.49		0.05	c0.42	
v/s Ratio Perm	0.09			c0.10		0.01						
v/c Ratio	0.70	0.46		0.75	0.36	0.06	0.24	0.73		0.66	0.59	
Uniform Delay, d1	44.8	43.4		45.2	42.7	41.1	50.2	11.3		48.1	7.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.69	0.35		1.00	1.00	
Incremental Delay, d2	11.4	1.0		18.2	0.6	0.1	0.5	1.8		7.9	1.0	
Delay (s)	56.2	44.4		63.3	43.4	41.2	35.0	5.7		56.0	8.5	
Level of Service	E	D		E	D	D	D	A		E	A	
Approach Delay (s)		50.4			49.9			6.0			11.4	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1639		1770	1863	1583	1770	3455		1770	3484	
Flt Permitted	0.74	1.00		0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1639		1374	1863	1583	1770	3455		1770	3484	
Volume (vph)	23	5	19	22	22	22	48	1510	55	22	1222	54
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	6	24	28	28	28	52	1624	59	24	1314	58
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	0
Lane Group Flow (vph)	29	30	0	28	28	2	52	1683	0	24	1372	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	6.1	6.1		6.1	6.1	6.1	13.6	86.0		2.9	75.3	
Effective Green, g (s)	6.7	6.7		6.7	6.7	6.7	13.6	86.4		2.9	75.7	
Actuated g/C Ratio	0.06	0.06		0.06	0.06	0.06	0.13	0.80		0.03	0.70	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	85	102		85	116	98	223	2764		48	2442	
v/s Ratio Prot		0.02			0.02		0.03	c0.49		0.01	c0.39	
v/s Ratio Perm	c0.02			0.02		0.00						
v/c Ratio	0.34	0.29		0.33	0.24	0.02	0.23	0.61		0.50	0.56	
Uniform Delay, d1	48.5	48.4		48.5	48.2	47.6	42.5	4.2		51.8	8.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.85	0.11		1.17	0.56	
Incremental Delay, d2	1.7	1.2		1.7	0.8	0.1	0.1	0.6		2.4	0.8	
Delay (s)	50.3	49.6		50.2	49.0	47.6	36.4	1.1		63.3	5.2	
Level of Service	D	D		D	D	D	D	A		E	A	
Approach Delay (s)		49.9			48.9			2.1			6.2	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.97		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3366		3427		1770	3505
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3366		3427		1770	3505
Volume (vph)	302	82	1521	166	46	1217
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	347	94	1635	178	49	1309
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	441	0	1813	0	49	1309
Heavy Vehicles (%)	2%	2%	4%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	17.8		70.2		6.5	80.7
Effective Green, g (s)	18.4		71.1		6.5	81.6
Actuated g/C Ratio	0.17		0.66		0.06	0.76
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	573		2256		107	2648
v/s Ratio Prot	c0.13		c0.53		0.03	c0.37
v/s Ratio Perm						
v/c Ratio	0.77		0.80		0.46	0.49
Uniform Delay, d1	42.8		13.4		49.0	5.2
Progression Factor	1.00		1.09		1.23	0.46
Incremental Delay, d2	5.6		0.3		1.0	0.6
Delay (s)	48.4		14.9		61.1	2.9
Level of Service	D		B		E	A
Approach Delay (s)	48.4		14.9			5.0
Approach LOS	D		B			A

Intersection Summary

HCM Average Control Delay	15.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	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												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	0.91	1.00	0.97	0.91	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)	2891	4940	1568	2891	5036	1583	3400	3471	1568	3400	3438	1320
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)	2891	4940	1568	2891	5036	1583	3400	3471	1568	3400	3438	1320
Volume (vph)	903	1748	238	130	621	72	499	689	434	126	610	783
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	951	1840	251	141	675	78	537	741	467	135	656	842
RTOR Reduction (vph)	0	0	50	0	0	6	0	0	33	0	0	11
Lane Group Flow (vph)	951	1840	201	141	675	72	537	741	434	135	656	831
Heavy Vehicles (%)	2%	5%	3%	2%	3%	2%	3%	4%	3%	3%	5%	3%
Turn Type	Prot		NA	Prot		NA	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases									6			2
Actuated Green, G (s)	27.7	37.0	0.0	9.2	18.5	0.0	19.9	36.5	36.5	7.1	23.7	51.4
Effective Green, g (s)	27.7	38.3	0.0	9.2	19.8	0.0	19.9	37.4	37.4	7.1	24.6	52.3
Actuated g/C Ratio	0.26	0.35	0.00	0.09	0.18	0.00	0.18	0.35	0.35	0.07	0.23	0.48
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	741	1752	0	246	923	0	626	1202	543	224	783	639
v/s Ratio Prot	0.33	c0.37		0.05	c0.13		0.16	0.21		0.04	0.19	c0.33
v/s Ratio Perm									c0.28			0.30
v/c Ratio	1.28	1.05	no cap	0.57	0.73	no cap	0.86	0.62	0.80	0.60	0.84	1.30
Uniform Delay, d1	40.2	34.8	Error	47.5	41.6	Error	42.7	29.3	31.9	49.1	39.8	27.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.92	0.93	1.03
Incremental Delay, d2	137.7	36.1	Error	2.0	2.8	Error	10.8	2.4	11.7	2.6	8.9	144.6
Delay (s)	177.9	70.9	Error	49.5	44.4	Error	53.5	31.7	43.6	47.9	45.8	173.3
Level of Service	F	E	F	D	D	F	D	C	D	D	D	F
Approach Delay (s)		Error			Error			41.6			111.7	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	Error	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3270	2988	2	0	2
Peak Hour Factor	0.93	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3442	3145	2	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.45	
vC, conflicting volume	3147				4867	1574
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3147				8402	1574
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	97
cM capacity (veh/h)	98				0	99

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1721	1721	2097	1051	3
Volume Left	0	0	0	0	0
Volume Right	0	0	0	2	3
cSH	1700	1700	1700	1700	99
Volume to Capacity	1.01	1.01	1.23	0.62	0.03
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	42.4
Lane LOS					E
Approach Delay (s)	0.0		0.0		42.4
Approach LOS					E

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	24	3246	2987	3	1	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	25	3417	3144	3	1	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.45	
vC, conflicting volume	3147				4905	1574
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3147				8432	1574
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	74				0	96
cM capacity (veh/h)	98				0	99

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	25	1708	1708	2096	1051	5
Volume Left	25	0	0	0	0	1
Volume Right	0	0	0	0	3	4
cSH	98	1700	1700	1700	1700	0
Volume to Capacity	0.26	1.00	1.00	1.23	0.62	10.09
Queue Length 95th (ft)	23	0	0	0	0	Err
Control Delay (s)	53.7	0.0	0.0	0.0	0.0	Err
Lane LOS	F					F
Approach Delay (s)	0.4			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	36	3208	3	14	2924	8	5	2	10	1	3	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	38	3377	3	15	3078	8	6	3	13	1	4	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.46			0.46	0.46	0.46	0.46	0.46	
vC, conflicting volume	3086			3380			5025	6570	1690	4877	6567	1543
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3086			5030			8641	12034	1319	8317	12028	1543
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	64			0			0	0	81	0	0	25
cM capacity (veh/h)	104			7			0	0	67	0	0	104

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	38	2251	1129	15	2052	1034	22	83
Volume Left	38	0	0	15	0	0	6	1
Volume Right	0	0	3	0	0	8	13	78
cSH	104	1700	1700	7	1700	1700	0	0
Volume to Capacity	0.36	1.32	0.66	2.00	1.21	0.61	Err	Err
Queue Length 95th (ft)	36	0	0	71	0	0	Err	Err
Control Delay (s)	58.0	0.0	0.0	1417.0	0.0	0.0	Err	Err
Lane LOS	F			F			F	F
Approach Delay (s)	0.6			6.7			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	3205	8	10	2939	5	2	1	3	1	2	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	6	3374	8	11	3094	5	3	1	4	1	3	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3099			3382			4960	6511	1691	4817	6512	1549
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3099			3382			4960	6511	1691	4817	6512	1549
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			87			0	0	95	0	0	94
cM capacity (veh/h)	103			79			0	0	82	0	0	103

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	2249	1133	11	2062	1036	8	10
Volume Left	6	0	0	11	0	0	3	1
Volume Right	0	0	8	0	0	5	4	6
cSH	103	1700	1700	79	1700	1700	0	0
Volume to Capacity	0.06	1.32	0.67	0.13	1.21	0.61	1788.76	896.73
Queue Length 95th (ft)	5	0	0	11	0	0	Err	Err
Control Delay (s)	42.2	0.0	0.0	57.5	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.1			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	27.7		
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	3193	1	6	2937	12	2	1	3	1	0	15
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.45	0.78
Hourly flow rate (vph)	16	3361	1	6	3092	13	3	1	4	1	0	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3104			3362			4952	6510	1681	4823	6504	1552
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3104			3362			4952	6510	1681	4823	6504	1552
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			92			0	0	95	0	100	81
cM capacity (veh/h)	103			81			0	0	84	0	0	102

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	16	2241	1121	6	2061	1043	8	21
Volume Left	16	0	0	6	0	0	3	1
Volume Right	0	0	1	0	0	13	4	19
cSH	103	1700	1700	81	1700	1700	0	0
Volume to Capacity	0.15	1.32	0.66	0.08	1.21	0.61	56.40	Err
Queue Length 95th (ft)	13	0	0	6	0	0	Err	Err
Control Delay (s)	46.4	0.0	0.0	53.5	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.2			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	3182	2	11	2947	5	1	3	1	3	2	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	14	3349	2	12	3102	5	1	4	1	4	3	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3107			3352			4953	6508	1676	4832	6507	1554
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3107			3352			4953	6508	1676	4832	6507	1554
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			86			0	0	98	0	0	91
cM capacity (veh/h)	102			81			0	0	84	0	0	102

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	14	2233	1119	12	2068	1039	6	15
Volume Left	14	0	0	12	0	0	1	4
Volume Right	0	0	2	0	0	5	1	9
cSH	102	1700	1700	81	1700	1700	0	0
Volume to Capacity	0.13	1.31	0.66	0.14	1.22	0.61	1446.29	4282.40
Queue Length 95th (ft)	11	0	0	12	0	0	Err	Err
Control Delay (s)	45.6	0.0	0.0	56.5	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.2			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	33.7		
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	3185	0	10	2954	6	1	3	2	5	1	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	1	3353	0	11	3109	6	1	4	3	6	1	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3116			3353			4931	6492	1676	4814	6488	1558
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3116			3353			4931	6492	1676	4814	6488	1558
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			87			0	0	97	0	0	90
cM capacity (veh/h)	101			81			0	0	84	0	0	101

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	2235	1118	11	2073	1043	8	18
Volume Left	1	0	0	11	0	0	1	6
Volume Right	0	0	0	0	0	6	3	10
cSH	101	1700	1700	81	1700	1700	0	0
Volume to Capacity	0.01	1.31	0.66	0.13	1.22	0.61	1212.73	Err
Queue Length 95th (ft)	1	0	0	11	0	0	Err	Err
Control Delay (s)	40.9	0.0	0.0	55.8	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.0			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	39.5		
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	3188	2	3	2961	5	2	3	4	4	1	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	2	3356	2	3	3117	5	3	4	5	5	1	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3122			3358			4926	6489	1679	4810	6488	1561
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3122			3358			4926	6489	1679	4810	6488	1561
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			96			0	0	94	0	0	91
cM capacity (veh/h)	101			81			0	0	84	0	0	101

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	2	2237	1121	3	2078	1044	12	15
Volume Left	2	0	0	3	0	0	3	5
Volume Right	0	0	2	0	0	5	5	9
cSH	101	1700	1700	81	1700	1700	0	0
Volume to Capacity	0.02	1.32	0.66	0.04	1.22	0.61	2189.73	1551.95
Queue Length 95th (ft)	2	0	0	3	0	0	Err	Err
Control Delay (s)	41.5	0.0	0.0	51.3	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.0			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	41.4		
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	3149	10	2	2959	6	0	2	3	4	1	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.63	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	39	3315	11	2	3115	6	0	3	4	5	1	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3121			3325			4960	6523	1663	4859	6525	1561
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3121			3325			4960	6523	1663	4859	6525	1561
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	61			97			0	0	96	0	0	87
cM capacity (veh/h)	101			83			0	0	86	0	0	101

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	39	2210	1115	2	2076	1045	6	19
Volume Left	39	0	0	2	0	0	0	5
Volume Right	0	0	11	0	0	6	4	13
cSH	101	1700	1700	83	1700	1700	0	0
Volume to Capacity	0.39	1.30	0.66	0.03	1.22	0.61	91.99	Err
Queue Length 95th (ft)	39	0	0	2	0	0	Err	Err
Control Delay (s)	61.5	0.0	0.0	49.3	0.0	0.0	Err	Err
Lane LOS	F			E			F	F
Approach Delay (s)	0.7			0.0			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	39.7		
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	2961	5	1	0	0	0	0	5
Peak Hour Factor	0.92	0.92	0.92	0.93	0.95	0.95	0.78	0.92	0.92	0.58	0.58	0.78
Hourly flow rate (vph)	0	0	0	0	3117	5	1	0	0	0	0	6
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)					1079							
pX, platoon unblocked	0.42						0.42	0.42		0.42	0.42	0.42
vC, conflicting volume	3122			0			1558	3122	0	3119	3119	1561
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	4677			0			947	4677	0	4671	4671	953
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	100	100	100	100	94
cM capacity (veh/h)	10			1622			85	0	1084	0	0	109

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	1558	1564	1	6
Volume Left	0	0	1	0
Volume Right	0	5	0	6
cSH	1622	1700	85	54
Volume to Capacity	0.00	0.92	0.02	0.12
Queue Length 95th (ft)	0	0	1	9
Control Delay (s)	0.0	0.0	47.9	79.8
Lane LOS			E	F
Approach Delay (s)	0.0		47.9	79.8
Approach LOS			E	F

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	6	2957	10	4	1	0	0	4	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.58	0.67	0.78	0.78
Hourly flow rate (vph)	0	0	0	6	3113	11	5	1	0	0	5	6
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)					728							
pX, platoon unblocked	0.48						0.48	0.48		0.48	0.48	0.48
vC, conflicting volume	3123			0			1056	3136	0	3131	3131	1043
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3259			0			0	3285	0	3275	3274	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	69	100	100	0	99
cM capacity (veh/h)	42			1622			0	4	1084	1	4	517

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	784	1556	789	6	12
Volume Left	6	0	0	5	0
Volume Right	0	0	11	0	6
cSH	1622	1700	1700	0	9
Volume to Capacity	0.00	0.92	0.46	Err	1.24
Queue Length 95th (ft)	0	0	0	Err	56
Control Delay (s)	0.1	0.0	0.0	Err	909.1
Lane LOS	A			F	F
Approach Delay (s)	0.0			Err	909.1
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	6	2967	11	4	3	0	0	2	2
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.50	0.78	0.78
Hourly flow rate (vph)	0	0	0	6	3123	12	5	4	0	0	3	3
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)					372							
pX, platoon unblocked	0.47						0.47	0.47		0.47	0.47	0.47
vC, conflicting volume	3135			0			1055	3147	0	3144	3142	1047
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3289			0			0	3317	0	3308	3304	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	0	100	0	34	99
cM capacity (veh/h)	40			1622			222	4	1084	0	4	505

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	787	1562	792	9	5
Volume Left	6	0	0	5	0
Volume Right	0	0	12	0	3
cSH	1622	1700	1700	9	8
Volume to Capacity	0.00	0.92	0.47	1.03	0.66
Queue Length 95th (ft)	0	0	0	46	31
Control Delay (s)	0.1	0.0	0.0	864.8	698.5
Lane LOS	A			F	F
Approach Delay (s)	0.0			864.8	698.5
Approach LOS				F	F

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.95	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					4997		1752	3505			3319	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					4997		1752	3505			3319	
Volume (vph)	0	0	0	294	2623	58	47	437	0	0	572	314
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.82	0.88	0.92	0.92
Adj. Flow (vph)	0	0	0	309	2761	61	51	475	0	0	622	341
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	65	0
Lane Group Flow (vph)	0	0	0	0	3129	0	51	475	0	0	898	0
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	0%	0%	3%	3%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					47.6		4.8	31.2			22.7	
Effective Green, g (s)					48.2		4.5	31.8			23.3	
Actuated g/C Ratio					0.55		0.05	0.36			0.26	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2737		90	1267			879	
v/s Ratio Prot							c0.03	0.14			c0.27	
v/s Ratio Perm					0.63							
v/c Ratio					1.14		0.57	0.37			1.02	
Uniform Delay, d1					19.9		40.8	20.8			32.4	
Progression Factor					0.16		0.86	1.12			1.00	
Incremental Delay, d2					64.9		2.1	0.4			36.0	
Delay (s)					68.0		37.1	23.6			68.4	
Level of Service					E		D	C			E	
Approach Delay (s)		0.0			68.0			24.9			68.4	
Approach LOS		A			E			C			E	

Intersection Summary			
HCM Average Control Delay	63.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.1%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	31	2949	16	14	20	0	0	15	12
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.63	0.66	0.78	0.78
Hourly flow rate (vph)	0	0	0	33	3104	17	18	26	0	0	19	15
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)		346			345							
pX, platoon unblocked	0.44						0.44	0.44		0.44	0.44	0.44
vC, conflicting volume	3121			0			1110	3186	0	3191	3178	1043
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3275			0			0	3424	0	3434	3405	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	0	100	0	0	97
cM capacity (veh/h)	38			1622			0	3	1084	0	3	477

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	809	1552	793	44	35
Volume Left	33	0	0	18	0
Volume Right	0	0	17	0	15
cSH	1622	1700	1700	0	6
Volume to Capacity	0.02	0.91	0.47	Err	6.25
Queue Length 95th (ft)	2	0	0	Err	Err
Control Delay (s)	0.6	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					5009		1770	1863			3385	
Flt Permitted					1.00		0.67	1.00			1.00	
Satd. Flow (perm)					5009		1251	1863			3385	
Volume (vph)	0	0	0	182	2902	69	63	270	0	0	75	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.85	0.85	0.83	0.83
Adj. Flow (vph)	0	0	0	192	3055	73	72	310	0	0	90	37
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	0	3317	0	72	310	0	0	126	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					48.8		28.0	28.0			28.0	
Effective Green, g (s)					50.4		29.6	29.6			29.6	
Actuated g/C Ratio					0.57		0.34	0.34			0.34	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					2869		421	627			1139	
v/s Ratio Prot								c0.17			0.04	
v/s Ratio Perm					0.66		0.06					
v/c Ratio					1.16		0.17	0.49			0.11	
Uniform Delay, d1					18.8		20.6	23.2			20.1	
Progression Factor					0.06		0.92	0.97			1.00	
Incremental Delay, d2					70.8		0.6	2.0			0.2	
Delay (s)					71.9		19.5	24.6			20.3	
Level of Service					E		B	C			C	
Approach Delay (s)		0.0			71.9			23.6			20.3	
Approach LOS		A			E			C			C	

Intersection Summary

HCM Average Control Delay	65.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	31	3142	19	1	7	0	0	1	10
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.75	0.78	0.78
Hourly flow rate (vph)	0	0	0	33	3307	20	1	9	0	0	1	13
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)		373			371							
pX, platoon unblocked	0.46						0.46	0.46		0.46	0.46	0.46
vC, conflicting volume	3327			0			1168	3393	0	3387	3383	1112
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3707			0			0	3848	0	3836	3826	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	0	100	0	24	97
cM capacity (veh/h)	27			1622			171	2	1084	0	2	502

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	859	1654	847	10	14
Volume Left	33	0	0	1	0
Volume Right	0	0	20	0	13
cSH	1622	1700	1700	2	19
Volume to Capacity	0.02	0.97	0.50	5.51	0.76
Queue Length 95th (ft)	2	0	0	Err	51
Control Delay (s)	0.5	0.0	0.0	Err	278.5
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	278.5
Approach LOS				F	F

Intersection Summary			
Average Delay	31.6		
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5003		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					5003		1770	3539			3539	1583
Volume (vph)	0	0	0	242	3072	90	56	522	0	0	560	64
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.75	0.95	0.92	0.92
Adj. Flow (vph)	0	0	0	255	3234	95	61	567	0	0	609	70
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	34
Lane Group Flow (vph)	0	0	0	0	3581	0	61	567	0	0	609	36
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					47.8		5.9	31.0			20.9	20.9
Effective Green, g (s)					48.4		6.1	31.6			21.5	21.5
Actuated g/C Ratio					0.55		0.07	0.36			0.24	0.24
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2752		123	1271			865	387
v/s Ratio Prot							0.03	c0.16			c0.17	
v/s Ratio Perm					0.72							0.02
v/c Ratio					1.30		0.50	0.45			0.70	0.09
Uniform Delay, d1					19.8		39.5	21.5			30.3	25.7
Progression Factor					0.88		1.34	0.62			1.00	1.00
Incremental Delay, d2					135.8		0.5	0.5			4.8	0.5
Delay (s)					153.1		53.3	13.8			35.1	26.2
Level of Service					F		D	B			D	C
Approach Delay (s)		0.0			153.1			17.6			34.2	
Approach LOS		A			F			B			C	

Intersection Summary

HCM Average Control Delay	119.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.0%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	46	3362	72	16	6	0	0	2	26
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.81	0.83	0.78	0.78
Hourly flow rate (vph)	0	0	0	48	3539	76	21	8	0	0	3	33
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)		381			357							
pX, platoon unblocked	0.23						0.23	0.23		0.23	0.23	0.23
vC, conflicting volume	3615			0			1278	3712	0	3678	3674	1218
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	5720			0			0	6149	0	5998	5981	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			0	0	100	0	0	86
cM capacity (veh/h)	2			1622			0	0	1084	0	0	245

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	933	1769	961	21	8	36
Volume Left	48	0	0	21	0	0
Volume Right	0	0	76	0	0	33
cSH	1622	1700	1700	0	0	0
Volume to Capacity	0.03	1.04	0.57	Err	404.49	102.29
Queue Length 95th (ft)	2	0	0	Err	Err	Err
Control Delay (s)	0.8	0.0	0.0	Err	Err	Err
Lane LOS	A			F	F	F
Approach Delay (s)	0.2			Err		Err
Approach LOS				F		F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5007		1770	1863			1863	1583
Flt Permitted					0.99		0.71	1.00			1.00	1.00
Satd. Flow (perm)					5007		1331	1863			1863	1583
Volume (vph)	0	0	0	517	3433	16	28	27	0	0	51	19
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	544	3614	17	36	35	0	0	65	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	4175	0	36	35	0	0	65	24
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					68.4		8.5	8.5			8.5	8.5
Effective Green, g (s)					70.0		10.0	10.0			10.0	10.0
Actuated g/C Ratio					0.80		0.11	0.11			0.11	0.11
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3983		151	212			212	180
v/s Ratio Prot								0.02			c0.03	
v/s Ratio Perm					0.83		0.03					0.02
v/c Ratio					1.05		0.24	0.17			0.31	0.13
Uniform Delay, d1					9.0		35.5	35.2			35.8	35.1
Progression Factor					1.79		1.03	1.03			1.00	1.00
Incremental Delay, d2					22.5		0.2	0.1			0.3	0.1
Delay (s)					38.6		36.7	36.4			36.1	35.2
Level of Service					D		D	D			D	D
Approach Delay (s)		0.0			38.6			36.5			35.9	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.2%	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												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5021		1770	1863			1863	1583
Flt Permitted					1.00		0.59	1.00			1.00	1.00
Satd. Flow (perm)					5021		1100	1863			1863	1583
Volume (vph)	0	0	0	0	3875	85	37	128	0	0	156	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.95	0.95	0.83	0.83	0.81	0.62	0.87	0.87
Adj. Flow (vph)	0	0	0	0	4079	89	45	154	0	0	179	62
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	4165	0	45	154	0	0	179	62
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					48.9		28.0	28.0			28.0	28.0
Effective Green, g (s)					50.5		29.5	29.5			29.5	29.5
Actuated g/C Ratio					0.57		0.34	0.34			0.34	0.34
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					2881		369	625			625	531
v/s Ratio Prot					c0.83			0.08			c0.10	
v/s Ratio Perm							0.04					0.04
v/c Ratio					1.45		0.12	0.25			0.29	0.12
Uniform Delay, d1					18.8		20.3	21.2			21.5	20.2
Progression Factor					1.00		1.11	1.11			1.00	1.00
Incremental Delay, d2					202.6		0.4	0.6			1.2	0.4
Delay (s)					221.4		23.0	24.1			22.7	20.7
Level of Service					F		C	C			C	C
Approach Delay (s)		0.0			221.4			23.8			22.2	
Approach LOS		A			F			C			C	

Intersection Summary

HCM Average Control Delay	202.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.6%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	3142	5	0	0	0	0	2	4	6	1	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.50	0.78	0.78	0.78	0.78	0.55
Hourly flow rate (vph)	9	3307	5	0	0	0	0	3	5	8	1	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)					728							
pX, platoon unblocked												
vC, conflicting volume	0			3313			3330	3329	1105	1123	3332	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3313			3330	3329	1105	1123	3332	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	68	98	93	84	100
cM capacity (veh/h)	1622			84			3	8	205	117	8	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	836	1654	832	8	9
Volume Left	9	0	0	0	8
Volume Right	0	0	5	5	0
cSH	1622	1700	1700	24	40
Volume to Capacity	0.01	0.97	0.49	0.32	0.23
Queue Length 95th (ft)	0	0	0	24	18
Control Delay (s)	0.2	0.0	0.0	214.6	120.5
Lane LOS	A			F	F
Approach Delay (s)	0.0			214.6	120.5
Approach LOS				F	F

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	3137	5	0	0	0	0	4	1	2	6	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.75	0.78	0.78	0.78	0.78	0.42
Hourly flow rate (vph)	11	3302	5	0	0	0	0	5	1	3	8	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			3307			3330	3326	1103	1124	3328	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3307			3330	3326	1103	1124	3328	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	36	99	97	4	100
cM capacity (veh/h)	1622			85			0	8	206	78	8	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	836	1651	831	6	10
Volume Left	11	0	0	0	3
Volume Right	0	0	5	1	0
cSH	1622	1700	1700	10	10
Volume to Capacity	0.01	0.97	0.49	0.64	0.99
Queue Length 95th (ft)	0	0	0	33	49
Control Delay (s)	0.2	0.0	0.0	594.7	746.1
Lane LOS	A			F	F
Approach Delay (s)	0.0			594.7	746.1
Approach LOS				F	F

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.98		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5011						3422		1752	3505	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		5011						3422		1752	3505	
Volume (vph)	213	2894	33	0	0	0	0	386	72	310	629	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.80	0.87	0.87	0.92	0.92	0.90
Adj. Flow (vph)	224	3046	35	0	0	0	0	444	83	337	684	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	3304	0	0	0	0	0	524	0	337	684	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	3%	3%	3%	3%	0%
Turn Type	Perm									Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2											
Actuated Green, G (s)		45.6						17.0		10.0	31.2	
Effective Green, g (s)		47.2						18.6		10.2	32.8	
Actuated g/C Ratio		0.54						0.21		0.12	0.37	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		5.6						4.4		2.0	5.9	
Lane Grp Cap (vph)		2688						723		203	1306	
v/s Ratio Prot								c0.15		c0.19	0.20	
v/s Ratio Perm		0.66										
v/c Ratio		1.23						0.72		1.66	0.52	
Uniform Delay, d1		20.4						32.3		38.9	21.5	
Progression Factor		1.00						1.00		0.70	0.82	
Incremental Delay, d2		106.5						6.2		303.7	0.3	
Delay (s)		126.9						38.5		330.9	17.8	
Level of Service		F						D		F	B	
Approach Delay (s)		126.9			0.0			38.5			121.2	
Approach LOS		F			A			D			F	

Intersection Summary

HCM Average Control Delay	116.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.1%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	29	3222	25	0	0	0	0	9	9	36	20	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.63	0.78	0.78	0.78	0.78	0.79
Hourly flow rate (vph)	31	3392	26	0	0	0	0	12	12	46	26	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)		346			345							
pX, platoon unblocked				0.48			0.48	0.48	0.48	0.48	0.48	
vC, conflicting volume	0			3418			3479	3466	1144	1197	3479	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3878			4006	3979	0	0	4006	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			0	0	98	0	0	100
cM capacity (veh/h)	1622			23			0	1	516	0	1	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	878	1696	874	23	72
Volume Left	31	0	0	0	46
Volume Right	0	0	26	12	0
cSH	1622	1700	1700	3	0
Volume to Capacity	0.02	1.00	0.51	8.47	Err
Queue Length 95th (ft)	1	0	0	Err	Err
Control Delay (s)	0.5	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	1.00	
Frt		1.00						0.94		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5021						3311		1770	1863	
Flt Permitted		1.00						1.00		0.39	1.00	
Satd. Flow (perm)		5021						3311		723	1863	
Volume (vph)	127	3110	30	0	0	0	0	233	176	10	188	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.79	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	134	3274	32	0	0	0	0	268	202	12	227	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3439	0	0	0	0	0	470	0	12	227	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.3						27.0		27.0	27.0	
Effective Green, g (s)		51.8						28.2		28.2	28.2	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		2956						1061		232	597	
v/s Ratio Prot								c0.14			0.12	
v/s Ratio Perm		0.68								0.02		
v/c Ratio		1.16						0.44		0.05	0.38	
Uniform Delay, d1		18.1						23.7		20.7	23.1	
Progression Factor		0.46						1.00		0.97	0.96	
Incremental Delay, d2		73.9						1.3		0.2	1.0	
Delay (s)		82.3						25.0		20.3	23.2	
Level of Service		F						C		C	C	
Approach Delay (s)		82.3			0.0			25.0			23.1	
Approach LOS		F			A			C			C	

Intersection Summary

HCM Average Control Delay	72.4	HCM Level of Service	E
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	3252	30	0	0	0	0	0	12	2	30	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.69	0.69	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	15	3423	32	0	0	0	0	0	15	3	38	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)		373			371							
pX, platoon unblocked				0.42			0.42	0.42	0.42	0.42	0.42	
vC, conflicting volume	0			3455			3488	3468	1157	1171	3484	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			4072			4149	4104	0	0	4141	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	100	97	99	0	100
cM capacity (veh/h)	1622			17			0	1	460	417	1	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	871	1712	887	15	41
Volume Left	15	0	0	0	3
Volume Right	0	0	32	15	0
cSH	1622	1700	1700	230	1
Volume to Capacity	0.01	1.01	0.52	0.07	40.46
Queue Length 95th (ft)	1	0	0	5	Err
Control Delay (s)	0.3	0.0	0.0	21.8	Err
Lane LOS	A			C	F
Approach Delay (s)	0.1			21.8	Err
Approach LOS				C	F

Intersection Summary			
Average Delay	116.5		
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5006						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5006						3539	1583	1770	3539	
Volume (vph)	275	2931	60	0	0	0	0	472	281	199	657	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.92	0.92	0.92	0.92	0.91
Adj. Flow (vph)	289	3085	63	0	0	0	0	513	305	216	714	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	3435	0	0	0	0	0	513	295	216	714	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2								8			
Actuated Green, G (s)		46.2						17.0	17.0	9.0	30.6	
Effective Green, g (s)		47.8						18.6	18.6	9.6	32.2	
Actuated g/C Ratio		0.54						0.21	0.21	0.11	0.37	
Clearance Time (s)		5.6						5.6	5.6	4.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2719						748	335	193	1295	
v/s Ratio Prot								0.14		c0.12	0.20	
v/s Ratio Perm		0.69							c0.19			
v/c Ratio		1.26						0.69	0.88	1.12	0.55	
Uniform Delay, d1		20.1						32.0	33.6	39.2	22.2	
Progression Factor		0.42						1.00	1.00	1.25	1.09	
Incremental Delay, d2		118.7						5.1	26.4	84.5	0.9	
Delay (s)		127.1						37.1	60.0	133.6	25.0	
Level of Service		F						D	E	F	C	
Approach Delay (s)		127.1			0.0			45.6			50.2	
Approach LOS		F			A			D			D	

Intersection Summary			
HCM Average Control Delay	100.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	102.0%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	62	3294	55	0	0	0	0	7	12	36	11	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.54	0.78	0.78	0.78	0.78	0.77
Hourly flow rate (vph)	65	3467	58	0	0	0	0	9	15	46	14	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)		377			348							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			3525			3634	3627	1185	1291	3656	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			4117			4348	4333	0	0	4395	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			0	0	97	0	0	100
cM capacity (veh/h)	1622			18			0	1	510	0	1	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	932	1734	925	24	60
Volume Left	65	0	0	0	46
Volume Right	0	0	58	15	0
cSH	1622	1700	1700	2	0
Volume to Capacity	0.04	1.02	0.54	11.98	Err
Queue Length 95th (ft)	3	0	0	Err	Err
Control Delay (s)	1.1	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.3			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						1.00	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4992						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.71	1.00	
Satd. Flow (perm)		4992						1863	1583	1324	3539	
Volume (vph)	145	3032	165	0	0	0	0	59	98	82	551	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.83	0.83	0.92	0.92	0.77
Adj. Flow (vph)	153	3192	174	0	0	0	0	71	118	89	599	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3513	0	0	0	0	0	71	117	89	599	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		57.7						21.5	21.5	19.5	19.5	
Effective Green, g (s)		59.3						20.7	20.7	20.7	20.7	
Actuated g/C Ratio		0.67						0.24	0.24	0.24	0.24	
Clearance Time (s)		5.6						3.2	3.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3364						438	372	311	832	
v/s Ratio Prot								0.04			c0.17	
v/s Ratio Perm		0.70							0.07	0.07		
v/c Ratio		1.04						0.16	0.32	0.29	0.72	
Uniform Delay, d1		14.4						26.8	27.8	27.6	31.0	
Progression Factor		0.49						1.00	1.00	1.13	1.14	
Incremental Delay, d2		21.0						0.1	0.2	0.1	1.2	
Delay (s)		28.1						26.8	28.0	31.2	36.5	
Level of Service		C						C	C	C	D	
Approach Delay (s)		28.1			0.0			27.5			35.8	
Approach LOS		C			A			C			D	

Intersection Summary

HCM Average Control Delay	29.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.2%	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												
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		0.91						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5013						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.71	1.00	
Satd. Flow (perm)		5013						1863	1583	1325	1863	
Volume (vph)	140	3007	65	0	0	0	0	58	51	29	140	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.66	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	147	3165	68	0	0	0	0	70	61	35	169	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3378	0	0	0	0	0	70	60	35	169	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3236						491	417	349	491	
v/s Ratio Prot								0.04			c0.09	
v/s Ratio Perm		0.67							0.04	0.03		
v/c Ratio		1.04						0.14	0.14	0.10	0.34	
Uniform Delay, d1		15.6						24.8	24.8	24.5	26.2	
Progression Factor		0.51						1.00	1.00	1.36	1.38	
Incremental Delay, d2		22.3						0.6	0.7	0.6	1.9	
Delay (s)		30.4						25.4	25.5	33.9	38.1	
Level of Service		C						C	C	C	D	
Approach Delay (s)		30.4			0.0			25.5			37.4	
Approach LOS		C			A			C			D	

Intersection Summary

HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.6%	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												
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		0.97	*0.87	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1626	4835		3400	4678	1568	1626	1573		1665	1671	1429
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1626	4835		3400	4678	1568	1626	1573		1665	1671	1429
Volume (vph)	90	2635	45	405	2420	420	90	5	290	375	5	115
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	95	2774	47	426	2547	442	103	6	333	408	5	125
RTOR Reduction (vph)	0	0	0	0	0	158	0	0	0	0	0	47
Lane Group Flow (vph)	95	2821	0	426	2547	284	103	339	0	204	209	78
Heavy Vehicles (%)	11%	7%	8%	3%	6%	3%	11%	2%	3%	3%	2%	13%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	10.0	74.0		14.0	78.0	78.0	14.0	14.0		19.1	19.1	19.1
Effective Green, g (s)	10.2	76.3		14.2	80.3	80.3	14.2	14.2		19.3	19.3	19.3
Actuated g/C Ratio	0.07	0.54		0.10	0.57	0.57	0.10	0.10		0.14	0.14	0.14
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	118	2635		345	2683	899	165	160		230	230	197
v/s Ratio Prot	0.06	c0.58		c0.13	0.54		0.06	c0.22		0.12	c0.13	
v/s Ratio Perm						0.18						0.05
v/c Ratio	0.81	1.07		1.23	0.95	0.32	0.62	2.12		0.89	0.91	0.40
Uniform Delay, d1	63.9	31.9		62.9	27.9	15.5	60.3	62.9		59.3	59.5	55.1
Progression Factor	1.13	1.27		1.09	0.63	0.39	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	29.2	39.8		108.1	1.1	0.1	5.2	523.9		30.2	34.6	0.5
Delay (s)	101.7	80.3		176.4	18.7	6.2	65.5	586.8		89.5	94.1	55.5
Level of Service	F	F		F	B	A	E	F		F	F	E
Approach Delay (s)		81.0			36.8			465.3			83.4	
Approach LOS		F			D			F			F	

Intersection Summary

HCM Average Control Delay	83.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	1.00	1.00	1.00			
Frpb, ped/bikes		1.00	0.99		1.00	0.98	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			
Frt		0.98	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4568	1282		4940	1492	1570	1524			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4568	1282		4940	1492	1570	1524			
Volume (vph)	0	2050	1250	0	2385	1350	375	0	860	0	0
Peak-hour factor, PHF	0.93	0.95	0.95	0.90	0.95	0.95	0.93	0.93	0.93	0.92	0.92
Adj. Flow (vph)	0	2158	1316	0	2511	1421	403	0	925	0	0
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2558	897	0	2511	1421	403	925	0	0	0
Confl. Peds. (#/hr)			2			2					
Heavy Vehicles (%)	2%	4%	7%	2%	5%	6%	15%	2%	6%	2%	2%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		108.5	140.0		108.5	140.0	23.0	23.0			
Effective Green, g (s)		108.9	140.0		108.9	140.0	23.1	23.1			
Actuated g/C Ratio		0.78	1.00		0.78	1.00	0.16	0.16			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		3553	1282		3843	1492	259	251			
v/s Ratio Prot		0.56			0.51		0.26	c0.61			
v/s Ratio Perm			0.70			c0.95					
v/c Ratio		0.72	0.70		0.65	0.95	1.56	3.69			
Uniform Delay, d1		7.9	0.0		7.0	0.0	58.4	58.4			
Progression Factor		0.50	1.00		1.91	1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.3		0.1	2.0	268.3	1218.1			
Delay (s)		4.0	0.3		13.5	2.0	326.8	1276.6			
Level of Service		A	A		B	A	F	F			
Approach Delay (s)		3.1			9.3			988.3		0.0	
Approach LOS		A			A			F		A	

Intersection Summary

HCM Average Control Delay	155.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	108.9%	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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1634		1633	1646	1553	3213	3089		1399	3314	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	1634		1633	1646	1553	3213	3089		1399	3314	
Volume (vph)	150	125	60	380	65	60	700	380	210	55	475	85
Peak-hour factor, PHF	0.87	0.87	0.87	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	172	144	69	413	71	65	753	409	226	60	516	92
RTOR Reduction (vph)	0	0	0	0	0	53	0	0	0	0	0	0
Lane Group Flow (vph)	172	213	0	239	245	12	753	635	0	60	608	0
Heavy Vehicles (%)	14%	10%	12%	5%	8%	4%	9%	6%	19%	29%	6%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	19.3	19.3		23.2	23.2	23.2	22.6	54.3		7.0	37.2	
Effective Green, g (s)	19.5	19.5		22.9	22.9	22.9	23.8	54.9		6.7	37.8	
Actuated g/C Ratio	0.16	0.16		0.19	0.19	0.19	0.20	0.46		0.06	0.32	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	257	266		312	314	296	637	1413		78	1044	
v/s Ratio Prot	0.11	c0.13		0.15	c0.15		c0.23	0.21		c0.04	c0.18	
v/s Ratio Perm						0.01						
v/c Ratio	0.67	0.80		0.77	0.78	0.04	1.18	0.45		0.77	0.58	
Uniform Delay, d1	47.2	48.4		46.0	46.2	39.6	48.1	22.2		55.9	34.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.2	16.7		11.4	12.6	0.1	97.4	1.0		32.7	2.4	
Delay (s)	54.4	65.1		57.5	58.8	39.7	145.5	23.3		88.6	36.9	
Level of Service	D	E		E	E	D	F	C		F	D	
Approach Delay (s)		60.3			55.9			89.6			41.5	
Approach LOS		E			E			F			D	

Intersection Summary

HCM Average Control Delay	68.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	*0.90	*0.85			0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2927	4704			5036	1538	3213		1568	3400		1509
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2927	4704			5036	1538	3213		1568	3400		1509
Volume (vph)	675	1750	0	0	2185	600	1125	0	975	475	0	425
Peak-hour factor, PHF	0.95	0.95	0.84	0.86	0.95	0.95	0.95	0.86	0.95	0.92	0.92	0.92
Adj. Flow (vph)	711	1842	0	0	2300	632	1184	0	1026	516	0	462
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	711	1842	0	0	2300	632	1184	0	1026	516	0	461
Heavy Vehicles (%)	11%	3%	2%	2%	3%	5%	9%	2%	3%	3%	2%	7%
Turn Type	Prot					pm+ov	Prot		Free	Prot		custom
Protected Phases	5	2			6	4	8			4		5 7
Permitted Phases						6			Free			
Actuated Green, G (s)	20.0	74.0			48.8	104.7	35.0		140.0	55.9		35.0
Effective Green, g (s)	21.2	74.9			49.7	106.8	36.9		140.0	57.1		37.4
Actuated g/C Ratio	0.15	0.54			0.36	0.76	0.26		1.00	0.41		0.27
Clearance Time (s)	5.2	4.9			4.9	5.2	5.9			5.2		
Vehicle Extension (s)	2.0	4.5			4.5	2.0	3.3			2.0		
Lane Grp Cap (vph)	443	2517			1788	1217	847		1568	1387		403
v/s Ratio Prot	c0.24	0.39			c0.46	0.21	c0.37			0.15		c0.31
v/s Ratio Perm						0.20			0.65			
v/c Ratio	1.60	0.73			1.29	0.52	1.40		0.65	0.37		1.14
Uniform Delay, d1	59.4	24.9			45.2	6.5	51.6		0.0	28.9		51.3
Progression Factor	0.95	0.93			1.03	1.17	1.00		1.00	1.00		1.00
Incremental Delay, d2	277.5	1.0			129.3	0.0	186.2		2.1	0.1		90.5
Delay (s)	333.9	24.1			175.8	7.6	237.8		2.1	29.0		141.8
Level of Service	F	C			F	A	F		A	C		F
Approach Delay (s)		110.4			139.5			128.4			82.3	
Approach LOS		F			F			F			F	

Intersection Summary

HCM Average Control Delay	121.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	110.6%	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												
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	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1752	3471	1568	3433	3470		1665	1679	1583		1845	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1752	3471	1568	3433	3470		1665	1679	1583		1845	1524
Volume (vph)	40	2680	480	700	2069	9	675	30	900	30	20	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.78	0.78	0.78
Adj. Flow (vph)	42	2821	505	737	2178	9	726	32	968	38	26	51
RTOR Reduction (vph)	0	0	97	0	0	0	0	0	20	0	0	49
Lane Group Flow (vph)	42	2821	408	737	2187	0	364	394	948	0	64	2
Heavy Vehicles (%)	3%	4%	3%	2%	4%	0%	3%	0%	2%	0%	0%	6%
Turn Type	Prot		Perm	Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2						8			7
Actuated Green, G (s)	4.8	78.0	78.0	20.5	96.2		14.1	14.1	34.6		6.0	6.0
Effective Green, g (s)	4.5	79.9	79.9	21.7	97.1		16.0	16.0	37.7		6.4	6.4
Actuated g/C Ratio	0.03	0.57	0.57	0.16	0.69		0.11	0.11	0.27		0.05	0.05
Clearance Time (s)	3.7	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	4.4
Vehicle Extension (s)	3.0	5.7	5.7	5.7	3.0		5.6	5.6	5.7		3.0	3.0
Lane Grp Cap (vph)	56	1981	895	532	2407		190	192	472		84	70
v/s Ratio Prot	0.02	c0.81		0.21	0.63		0.22	0.23	c0.31		c0.03	
v/s Ratio Perm			0.26						0.29			0.00
v/c Ratio	0.75	1.42	0.46	1.39	0.91		1.92	2.05	2.01		0.76	0.03
Uniform Delay, d1	67.2	30.0	17.4	59.2	17.8		62.0	62.0	51.2		66.0	63.8
Progression Factor	0.93	1.03	0.83	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	34.0	193.1	1.3	184.8	6.4		431.1	491.1	460.9		32.8	0.2
Delay (s)	96.7	224.1	15.7	244.0	24.2		493.1	553.1	512.0		98.8	64.0
Level of Service	F	F	B	F	C		F	F	F		F	E
Approach Delay (s)		191.2			79.6			517.4			83.4	
Approach LOS		F			E			F			F	

Intersection Summary

HCM Average Control Delay	218.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	144.8%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1788		1770	1863	1583	1770	3407		1770	3445	
Flt Permitted	0.65	1.00		0.42	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1211	1788		774	1863	1583	1770	3407		1770	3445	
Volume (vph)	124	130	47	127	89	98	25	1383	343	81	982	137
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	143	149	54	146	102	113	27	1487	369	87	1056	147
RTOR Reduction (vph)	0	0	0	0	0	91	0	0	0	0	0	0
Lane Group Flow (vph)	143	203	0	146	102	22	27	1856	0	87	1203	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	20.2	20.2		20.2	20.2	20.2	4.3	65.9		8.4	70.0	
Effective Green, g (s)	20.8	20.8		20.8	20.8	20.8	4.3	66.8		8.4	70.9	
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.19	0.04	0.62		0.08	0.66	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	233	344		149	359	305	70	2107		138	2262	
v/s Ratio Prot		0.11			0.05		0.02	c0.54		c0.05	0.35	
v/s Ratio Perm	0.12			c0.19		0.01						
v/c Ratio	0.61	0.59		0.98	0.28	0.07	0.39	0.88		0.63	0.53	
Uniform Delay, d1	39.9	39.7		43.4	37.2	35.7	50.6	17.3		48.3	9.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.10	0.55		1.00	1.00	
Incremental Delay, d2	4.1	2.3		66.8	0.3	0.1	0.8	3.8		6.7	0.9	
Delay (s)	44.0	42.0		110.2	37.6	35.8	56.7	13.3		55.0	10.7	
Level of Service	D	D		F	D	D	E	B		E	B	
Approach Delay (s)		42.8			66.4			13.9			13.7	
Approach LOS		D			E			B			B	

Intersection Summary

HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1629		1770	1863	1583	1770	3483		1770	3499	
Flt Permitted	0.75	1.00		0.41	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1389	1629		765	1863	1583	1770	3483		1770	3499	
Volume (vph)	36	24	124	62	15	32	33	1683	79	29	1114	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	29	149	75	18	39	35	1810	85	31	1198	14
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	0
Lane Group Flow (vph)	43	178	0	75	18	6	35	1895	0	31	1212	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	16.0	16.0		16.0	16.0	16.0	7.3	74.5		4.5	71.7	
Effective Green, g (s)	16.6	16.6		16.6	16.6	16.6	7.3	74.9		4.5	72.1	
Actuated g/C Ratio	0.15	0.15		0.15	0.15	0.15	0.07	0.69		0.04	0.67	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	213	250		118	286	243	120	2416		74	2336	
v/s Ratio Prot		c0.11			0.01		0.02	c0.54		0.02	c0.35	
v/s Ratio Perm	0.03			0.10		0.00						
v/c Ratio	0.20	0.71		0.64	0.06	0.02	0.29	0.78		0.42	0.52	
Uniform Delay, d1	39.9	43.4		42.9	39.1	38.8	47.9	11.1		50.5	9.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.65	0.22		1.08	0.73	
Incremental Delay, d2	0.3	8.6		9.4	0.1	0.0	0.3	1.5		1.2	0.7	
Delay (s)	40.3	52.0		52.3	39.1	38.9	31.3	4.0		55.6	7.4	
Level of Service	D	D		D	D	D	C	A		E	A	
Approach Delay (s)		49.7			46.5			4.5			8.6	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	108.0	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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.91		0.99		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	3220		3481		1770	3505
Flt Permitted	0.98		1.00		0.95	1.00
Satd. Flow (perm)	3220		3481		1770	3505
Volume (vph)	168	264	1531	77	73	1227
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	193	303	1646	83	78	1319
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	496	0	1729	0	78	1319
Heavy Vehicles (%)	2%	2%	3%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	20.3		64.6		9.6	78.2
Effective Green, g (s)	20.9		65.5		9.6	79.1
Actuated g/C Ratio	0.19		0.61		0.09	0.73
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	623		2111		157	2567
v/s Ratio Prot	c0.15		c0.50		0.04	c0.38
v/s Ratio Perm						
v/c Ratio	0.97dr		0.82		0.50	0.51
Uniform Delay, d1	41.5		16.6		46.9	6.2
Progression Factor	1.00		0.58		1.13	1.20
Incremental Delay, d2	6.5		0.3		0.8	0.6
Delay (s)	48.1		9.9		54.0	8.1
Level of Service	D		A		D	A
Approach Delay (s)	48.1		9.9			10.6
Approach LOS	D		A			B

Intersection Summary

HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	*0.83	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	*0.75	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)	2474	5036	1583	2891	5036	1583	3400	3505	1568	3433	2794	1333
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)	2474	5036	1583	2891	5036	1583	3400	3505	1568	3433	2794	1333
Volume (vph)	803	1292	458	565	1176	98	385	707	361	78	678	639
Peak-hour factor, PHF	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	845	1360	482	608	1265	105	414	760	388	84	729	687
RTOR Reduction (vph)	0	0	88	0	0	15	0	0	31	0	0	2
Lane Group Flow (vph)	845	1360	394	608	1265	90	414	760	357	84	729	685
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		NA	Prot		NA	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases									6			2
Actuated Green, G (s)	19.7	30.8	0.0	20.0	31.1	0.0	11.0	33.3	33.3	5.7	28.0	47.7
Effective Green, g (s)	19.7	32.1	0.0	20.0	32.4	0.0	11.0	34.2	34.2	5.7	28.9	48.6
Actuated g/C Ratio	0.18	0.30	0.00	0.19	0.30	0.00	0.10	0.32	0.32	0.05	0.27	0.45
Clearance Time (s)	4.0	5.3		4.0	5.3		4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5		2.0	2.5		2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	451	1497	0	535	1511	0	346	1110	497	181	748	600
v/s Ratio Prot	c0.34	0.27		c0.21	c0.25		c0.12	0.22		0.02	0.26	c0.21
v/s Ratio Perm									0.23			0.31
v/c Ratio	1.87	0.91	no cap	1.14	0.84	no cap	1.20	0.68	0.72	0.46	0.97	1.14
Uniform Delay, d1	44.2	36.5	Error	44.0	35.3	Error	48.5	32.2	32.6	49.7	39.2	29.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	0.73	0.68	0.70
Incremental Delay, d2	401.5	8.3	Error	82.3	4.1	Error	113.2	3.4	8.6	0.6	24.7	79.9
Delay (s)	445.7	44.9	Error	126.3	39.5	Error	161.7	35.6	41.2	37.0	51.4	100.7
Level of Service	F	D	F	F	D	F	F	D	D	D	D	F
Approach Delay (s)		Error			Error			70.4			73.2	
Approach LOS		F			F			E			E	

Intersection Summary

HCM Average Control Delay	Error	HCM Level of Service	F
HCM Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3610	2767	17	0	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.50	0.78
Hourly flow rate (vph)	0	3800	2913	18	0	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.44	
vC, conflicting volume	2931				4822	1465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2931				8479	1465
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	88
cM capacity (veh/h)	121				0	117

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1900	1900	1942	989	14
Volume Left	0	0	0	0	0
Volume Right	0	0	0	18	14
cSH	1700	1700	1700	1700	117
Volume to Capacity	1.12	1.12	1.14	0.58	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	39.8
Lane LOS					E
Approach Delay (s)	0.0		0.0		39.8
Approach LOS					E

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	29	3581	2738	14	3	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	31	3769	2882	15	4	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.44	
vC, conflicting volume	2897				4835	1448
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2897				8451	1448
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	75				0	51
cM capacity (veh/h)	124				0	120

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	31	1885	1885	1921	975	63
Volume Left	31	0	0	0	0	4
Volume Right	0	0	0	0	15	59
cSH	124	1700	1700	1700	1700	0
Volume to Capacity	0.25	1.11	1.11	1.13	0.57	Err
Queue Length 95th (ft)	23	0	0	0	0	Err
Control Delay (s)	43.1	0.0	0.0	0.0	0.0	Err
Lane LOS	E					F
Approach Delay (s)	0.3			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	93.1		
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	34	3527	23	10	2685	6	0	7	6	4	5	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.58	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	36	3713	24	11	2826	6	0	9	8	5	6	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1071										
pX, platoon unblocked				0.44			0.44	0.44	0.44	0.44	0.44	
vC, conflicting volume	2833			3737			5234	6650	1868	4783	6659	1416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2833			5914			9287	12479	1703	8271	12499	1416
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	73			0			0	0	78	0	0	32
cM capacity (veh/h)	132			3			0	0	36	0	0	127

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	36	2475	1262	11	1884	948	17	97
Volume Left	36	0	0	11	0	0	0	5
Volume Right	0	0	24	0	0	6	8	86
cSH	132	1700	1700	3	1700	1700	0	0
Volume to Capacity	0.27	1.46	0.74	3.51	1.11	0.56	Err	Err
Queue Length 95th (ft)	26	0	0	Err	0	0	Err	Err
Control Delay (s)	42.1	0.0	0.0	3260.2	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.4			12.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	114.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	3518	13	9	2689	8	3	2	6	0	5	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.56	0.78	0.78
Hourly flow rate (vph)	6	3703	14	9	2831	8	4	3	8	0	6	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2839			3717			5160	6581	1858	4719	6583	1419
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2839			3717			5160	6581	1858	4719	6583	1419
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			84			0	0	88	0	0	91
cM capacity (veh/h)	131			58			0	0	63	0	0	126

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	2469	1248	9	1887	952	14	18
Volume Left	6	0	0	9	0	0	4	0
Volume Right	0	0	14	0	0	8	8	12
cSH	131	1700	1700	58	1700	1700	0	0
Volume to Capacity	0.05	1.45	0.73	0.16	1.11	0.56	4522.14	191.32
Queue Length 95th (ft)	4	0	0	14	0	0	Err	Err
Control Delay (s)	33.8	0.0	0.0	79.5	0.0	0.0	Err	Err
Lane LOS	D			F			F	F
Approach Delay (s)	0.1			0.3			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	48.7		
Intersection Capacity Utilization	114.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	3519	2	9	2695	18	2	1	2	8	1	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	3	3704	2	9	2837	19	3	1	3	10	1	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2856			3706			5150	6586	1853	4724	6578	1428
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2856			3706			5150	6586	1853	4724	6578	1428
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			84			0	0	96	0	0	91
cM capacity (veh/h)	129			58			0	0	64	0	0	124

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	3	2469	1237	9	1891	965	6	23
Volume Left	3	0	0	9	0	0	3	10
Volume Right	0	0	2	0	0	19	3	12
cSH	129	1700	1700	58	1700	1700	0	0
Volume to Capacity	0.02	1.45	0.73	0.16	1.11	0.57	2021.95	Err
Queue Length 95th (ft)	2	0	0	13	0	0	Err	Err
Control Delay (s)	33.6	0.0	0.0	78.6	0.0	0.0	Err	Err
Lane LOS	D			F			F	F
Approach Delay (s)	0.0			0.3			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	44.8		
Intersection Capacity Utilization	114.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	3507	6	6	2701	10	2	3	6	0	0	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.61	0.61	0.78
Hourly flow rate (vph)	17	3692	6	6	2843	11	3	4	8	0	0	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2854			3698			5163	6595	1849	4742	6593	1427
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2854			3698			5163	6595	1849	4742	6593	1427
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			89			0	0	88	0	100	80
cM capacity (veh/h)	129			59			0	0	64	0	0	125

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	2461	1237	6	1895	958	14	24
Volume Left	17	0	0	6	0	0	3	0
Volume Right	0	0	6	0	0	11	8	24
cSH	129	1700	1700	59	1700	1700	0	62
Volume to Capacity	0.13	1.45	0.73	0.11	1.11	0.56	154.30	0.39
Queue Length 95th (ft)	11	0	0	9	0	0	Err	37
Control Delay (s)	36.9	0.0	0.0	73.7	0.0	0.0	Err	95.9
Lane LOS	E			F			F	F
Approach Delay (s)	0.2			0.2			Err	95.9
Approach LOS							F	F

Intersection Summary			
Average Delay	21.8		
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	18	3490	5	15	2686	18	9	18	3	2	9	22
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	19	3598	5	16	2888	19	12	23	4	3	12	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2908			3603			5120	6577	1802	4778	6570	1454
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2908			3603			5120	6577	1802	4778	6570	1454
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			75			0	0	94	0	0	76
cM capacity (veh/h)	123			64			0	0	69	0	0	119

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	19	2399	1204	16	1925	982	38	42
Volume Left	19	0	0	16	0	0	12	3
Volume Right	0	0	5	0	0	19	4	28
cSH	123	1700	1700	64	1700	1700	0	0
Volume to Capacity	0.15	1.41	0.71	0.25	1.13	0.58	Err	Err
Queue Length 95th (ft)	13	0	0	22	0	0	Err	Err
Control Delay (s)	39.3	0.0	0.0	79.1	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.2			0.4			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	122.2		
Intersection Capacity Utilization	113.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	3483	5	1	2700	2	8	7	8	8	2	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	7	3666	5	1	2842	2	10	9	10	10	3	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2844			3672			5108	6530	1836	4698	6532	1422
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2844			3672			5108	6530	1836	4698	6532	1422
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			98			0	0	84	0	0	89
cM capacity (veh/h)	131			60			0	0	65	0	0	125

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	7	2444	1227	1	1895	949	29	27
Volume Left	7	0	0	1	0	0	10	10
Volume Right	0	0	5	0	0	2	10	14
cSH	131	1700	1700	60	1700	1700	0	0
Volume to Capacity	0.06	1.44	0.72	0.02	1.11	0.56	Err	Err
Queue Length 95th (ft)	4	0	0	1	0	0	Err	Err
Control Delay (s)	34.2	0.0	0.0	66.0	0.0	0.0	Err	Err
Lane LOS	D			F			F	F
Approach Delay (s)	0.1			0.0			Err	9999.0
Approach LOS							F	F

Intersection Summary			
Average Delay	85.8		
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	29	3463	7	15	2676	13	6	5	3	9	2	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	31	3645	7	16	2817	14	8	6	4	12	3	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2831			3653			5151	6572	1826	4742	6569	1415
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2831			3653			5151	6572	1826	4742	6569	1415
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	77			74			0	0	94	0	0	79
cM capacity (veh/h)	132			61			0	0	66	0	0	127

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	31	2430	1222	16	1878	953	18	41
Volume Left	31	0	0	16	0	0	8	12
Volume Right	0	0	7	0	0	14	4	27
cSH	132	1700	1700	61	1700	1700	0	0
Volume to Capacity	0.23	1.43	0.72	0.26	1.10	0.56	Err	Err
Queue Length 95th (ft)	21	0	0	23	0	0	Err	Err
Control Delay (s)	40.2	0.0	0.0	83.2	0.0	0.0	Err	Err
Lane LOS	E			F			F	F
Approach Delay (s)	0.3			0.5			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	89.9		
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	1	2696	7	2	3	0	0	1	6
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.44	0.78	0.78
Hourly flow rate (vph)	0	0	0	1	2838	7	3	4	0	0	1	8
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)					1079							
pX, platoon unblocked	0.43						0.43	0.43		0.43	0.43	0.43
vC, conflicting volume	2845			0			1422	2847	0	2846	2844	1423
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3970			0			652	3975	0	3971	3966	654
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			0	0	100	0	0	96
cM capacity (veh/h)	19			1622			0	1	1084	0	1	176

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	1420	1426	6	9
Volume Left	1	0	3	0
Volume Right	0	7	0	8
cSH	1622	1700	0	9
Volume to Capacity	0.00	0.84	Err	1.00
Queue Length 95th (ft)	0	0	Err	46
Control Delay (s)	0.0	0.0	Err	587.0
Lane LOS	A		F	F
Approach Delay (s)	0.0		Err	587.0
Approach LOS			F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	12	2694	17	7	6	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.43	0.78	0.78
Hourly flow rate (vph)	0	0	0	13	2836	18	9	8	0	0	10	4
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)					724							
pX, platoon unblocked	0.49						0.49	0.49		0.49	0.49	0.49
vC, conflicting volume	2854			0			978	2879	0	2874	2870	954
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2700			0			0	2752	0	2741	2733	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			0	18	100	100	0	99
cM capacity (veh/h)	73			1622			0	9	1084	1	10	528

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	722	1418	727	17	14
Volume Left	13	0	0	9	0
Volume Right	0	0	18	0	4
cSH	1622	1700	1700	0	13
Volume to Capacity	0.01	0.83	0.43	Err	1.06
Queue Length 95th (ft)	1	0	0	Err	59
Control Delay (s)	0.2	0.0	0.0	Err	650.6
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	650.6
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	13	2698	9	4	3	0	0	5	21
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.50	0.92	0.78	0.78
Hourly flow rate (vph)	0	0	0	14	2840	9	5	4	0	0	6	27
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)					361							
pX, platoon unblocked	0.47						0.47	0.47		0.47	0.47	0.47
vC, conflicting volume	2849			0			977	2877	0	2874	2872	951
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2677			0			0	2736	0	2730	2726	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	58	100	100	31	95
cM capacity (veh/h)	71			1622			200	9	1084	3	9	505

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	724	1420	719	9	33
Volume Left	14	0	0	5	0
Volume Right	0	0	9	0	27
cSH	1622	1700	1700	20	49
Volume to Capacity	0.01	0.84	0.42	0.44	0.69
Queue Length 95th (ft)	1	0	0	32	68
Control Delay (s)	0.2	0.0	0.0	283.6	139.1
Lane LOS	A			F	F
Approach Delay (s)	0.1			283.6	139.1
Approach LOS				F	F

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					4956		1736	3471			3328	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					4956		1736	3471			3328	
Volume (vph)	0	0	0	228	2370	35	88	768	0	0	693	262
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.95	0.76	0.92	0.92
Adj. Flow (vph)	0	0	0	240	2495	37	96	835	0	0	753	285
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	35	0
Lane Group Flow (vph)	0	0	0	0	2770	0	96	835	0	0	1003	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	0%	0%	4%	4%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					48.4		7.2	30.4			19.5	
Effective Green, g (s)					49.0		6.9	31.0			20.1	
Actuated g/C Ratio					0.56		0.08	0.35			0.23	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2760		136	1223			760	
v/s Ratio Prot							0.06	c0.24			c0.30	
v/s Ratio Perm					0.56							
v/c Ratio					1.00		0.71	0.68			1.32	
Uniform Delay, d1					19.5		39.6	24.3			34.0	
Progression Factor					0.30		1.15	1.22			1.00	
Incremental Delay, d2					10.3		1.2	0.3			152.8	
Delay (s)					16.2		46.7	29.9			186.7	
Level of Service					B		D	C			F	
Approach Delay (s)		0.0			16.2			31.6			186.7	
Approach LOS		A			B			C			F	

Intersection Summary			
HCM Average Control Delay	56.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	113.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	24	2552	55	12	25	0	0	26	69
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.73	0.80	0.78	0.78
Hourly flow rate (vph)	0	0	0	25	2686	58	15	32	0	0	33	88
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)		346			345							
pX, platoon unblocked	0.45						0.45	0.45		0.45	0.45	0.45
vC, conflicting volume	2744			0			963	2795	0	2782	2766	924
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2432			0			0	2545	0	2516	2480	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	0	100	0	0	82
cM capacity (veh/h)	86			1622			0	12	1084	0	13	489

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	697	1343	729	47	122
Volume Left	25	0	0	15	0
Volume Right	0	0	58	0	88
cSH	1622	1700	1700	0	45
Volume to Capacity	0.02	0.79	0.43	Err	2.72
Queue Length 95th (ft)	1	0	0	Err	328
Control Delay (s)	0.4	0.0	0.0	Err	971.9
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	971.9
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4954		1770	1863			3411	
Flt Permitted					0.99		0.48	1.00			1.00	
Satd. Flow (perm)					4954		889	1863			3411	
Volume (vph)	0	0	0	357	2414	65	140	214	0	0	244	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.92	0.74	0.87	0.87
Adj. Flow (vph)	0	0	0	376	2541	68	161	246	0	0	280	89
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	0	2982	0	161	246	0	0	368	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					48.8		28.0	28.0			28.0	
Effective Green, g (s)					50.4		29.6	29.6			29.6	
Actuated g/C Ratio					0.57		0.34	0.34			0.34	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					2837		299	627			1147	
v/s Ratio Prot								0.13			0.11	
v/s Ratio Perm					0.60		c0.18					
v/c Ratio					1.05		0.54	0.39			0.32	
Uniform Delay, d1					18.8		23.7	22.3			21.7	
Progression Factor					0.42		0.91	0.88			1.00	
Incremental Delay, d2					24.2		4.4	1.2			0.7	
Delay (s)					32.0		25.8	20.9			22.5	
Level of Service					C		C	C			C	
Approach Delay (s)		0.0			32.0			22.8			22.5	
Approach LOS		A			C			C			C	

Intersection Summary

HCM Average Control Delay	30.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.7%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	59	2729	32	13	11	0	0	13	94
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.58	0.72	0.83	0.83
Hourly flow rate (vph)	0	0	0	62	2873	34	17	14	0	0	16	113
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)		373			371							
pX, platoon unblocked	0.46						0.46	0.46		0.46	0.46	0.46
vC, conflicting volume	2906			0			1090	3031	0	3021	3014	974
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2798			0			0	3066	0	3045	3029	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			0	0	100	0	0	78
cM capacity (veh/h)	63			1622			0	5	1084	0	6	504

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	780	1436	752	31	129
Volume Left	62	0	0	17	0
Volume Right	0	0	34	0	113
cSH	1622	1700	1700	0	44
Volume to Capacity	0.04	0.84	0.44	Err	2.92
Queue Length 95th (ft)	3	0	0	Err	351
Control Delay (s)	1.0	0.0	0.0	Err	1062.2
Lane LOS	A			F	F
Approach Delay (s)	0.3			Err	1062.2
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4953		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4953		1770	3539			3539	1583
Volume (vph)	0	0	0	265	2381	85	255	573	0	0	705	184
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.91	0.91	0.92	0.92
Adj. Flow (vph)	0	0	0	279	2506	89	277	623	0	0	766	200
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	0	2870	0	277	623	0	0	766	197
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					48.6		8.0	30.2			18.0	18.0
Effective Green, g (s)					49.2		8.2	30.8			18.6	18.6
Actuated g/C Ratio					0.56		0.09	0.35			0.21	0.21
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2769		165	1239			748	335
v/s Ratio Prot							c0.16	0.18			c0.22	
v/s Ratio Perm					0.58							0.12
v/c Ratio					1.04		1.68	0.50			1.02	0.59
Uniform Delay, d1					19.4		39.9	22.6			34.7	31.2
Progression Factor					0.58		1.28	0.65			1.00	1.00
Incremental Delay, d2					24.3		322.3	1.0			39.2	7.4
Delay (s)					35.5		373.3	15.7			73.9	38.6
Level of Service					D		F	B			E	D
Approach Delay (s)		0.0			35.5			125.8			66.6	
Approach LOS		A			D			F			E	

Intersection Summary			
HCM Average Control Delay	59.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	115.1%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	45	2642	30	54	52	0	0	35	35
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.75	0.80	0.78	0.78
Hourly flow rate (vph)	0	0	0	47	2781	32	65	63	0	0	45	45
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)		381			357							
pX, platoon unblocked	0.60						0.60	0.60		0.60	0.60	0.60
vC, conflicting volume	2813			0			1044	2907	0	2923	2892	943
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2688			0			0	2846	0	2872	2820	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			0	0	100	0	0	93
cM capacity (veh/h)	91			1622			0	10	1084	0	10	652

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	743	1391	727	65	63	90
Volume Left	47	0	0	65	0	0
Volume Right	0	0	32	0	0	45
cSH	1622	1700	1700	0	10	20
Volume to Capacity	0.03	0.82	0.43	Err	6.36	4.44
Queue Length 95th (ft)	2	0	0	Err	Err	Err
Control Delay (s)	0.8	0.0	0.0	Err	Err	Err
Lane LOS	A			F	F	F
Approach Delay (s)	0.2			Err		Err
Approach LOS				F		F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4966		1770	1863			1863	1583
Flt Permitted					1.00		0.71	1.00			1.00	1.00
Satd. Flow (perm)					4966		1331	1863			1863	1583
Volume (vph)	0	0	0	295	2628	27	70	84	0	0	51	19
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.77	0.73	0.78	0.78
Adj. Flow (vph)	0	0	0	311	2766	28	84	101	0	0	65	24
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	3105	0	84	101	0	0	65	23
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					66.6		10.3	10.3			10.3	10.3
Effective Green, g (s)					68.2		11.8	11.8			11.8	11.8
Actuated g/C Ratio					0.78		0.13	0.13			0.13	0.13
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3849		178	250			250	212
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm					0.63		c0.06					0.01
v/c Ratio					0.81		0.47	0.40			0.26	0.11
Uniform Delay, d1					5.9		35.2	34.9			34.2	33.5
Progression Factor					1.44		1.41	1.42			1.00	1.00
Incremental Delay, d2					0.5		0.5	0.2			0.2	0.1
Delay (s)					9.1		50.1	49.7			34.4	33.6
Level of Service					A		D	D			C	C
Approach Delay (s)		0.0			9.1			49.9			34.2	
Approach LOS		A			A			D			C	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.9%	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												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4977		1770	1863			1863	1583
Flt Permitted					1.00		0.54	1.00			1.00	1.00
Satd. Flow (perm)					4977		999	1863			1863	1583
Volume (vph)	0	0	0	0	2756	47	93	154	0	0	190	101
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.95	0.95	0.87	0.87	0.84	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	2901	49	107	177	0	0	218	116
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2948	0	107	177	0	0	218	115
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					48.9		28.0	28.0			28.0	28.0
Effective Green, g (s)					50.5		29.5	29.5			29.5	29.5
Actuated g/C Ratio					0.57		0.34	0.34			0.34	0.34
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					2856		335	625			625	531
v/s Ratio Prot					c0.59			0.10			c0.12	
v/s Ratio Perm							0.11					0.07
v/c Ratio					1.03		0.32	0.28			0.35	0.22
Uniform Delay, d1					18.8		21.8	21.5			22.0	21.0
Progression Factor					1.00		1.11	1.11			1.00	1.00
Incremental Delay, d2					25.8		1.9	0.8			1.5	0.9
Delay (s)					44.6		26.0	24.7			23.6	21.9
Level of Service					D		C	C			C	C
Approach Delay (s)		0.0			44.6			25.2			23.0	
Approach LOS		A			D			C			C	

Intersection Summary

HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.8%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	3462	5	0	0	0	0	2	4	23	4	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.42	0.78	0.78	0.78	0.78	0.71
Hourly flow rate (vph)	8	3644	5	0	0	0	0	3	5	29	5	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)					728							
pX, platoon unblocked												
vC, conflicting volume	0			3649			3666	3664	1217	1233	3666	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3649			3666	3664	1217	1233	3666	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	46	97	60	0	100
cM capacity (veh/h)	1622			61			0	5	173	74	5	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	919	1822	916	8	35
Volume Left	8	0	0	0	29
Volume Right	0	0	5	5	0
cSH	1622	1700	1700	14	23
Volume to Capacity	0.01	1.07	0.54	0.54	1.48
Queue Length 95th (ft)	0	0	0	33	109
Control Delay (s)	0.1	0.0	0.0	382.9	603.8
Lane LOS	A			F	F
Approach Delay (s)	0.0			382.9	603.8
Approach LOS				F	F

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	3461	9	0	0	0	0	5	7	5	3	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.50	0.78	0.78	0.78	0.78	0.44
Hourly flow rate (vph)	20	3643	9	0	0	0	0	6	9	6	4	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			3653			3690	3688	1219	1258	3693	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3653			3690	3688	1219	1258	3693	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	0	95	0	15	100
cM capacity (veh/h)	1622			61			0	5	172	0	5	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	931	1822	920	15	10
Volume Left	20	0	0	0	6
Volume Right	0	0	9	9	0
cSH	1622	1700	1700	11	0
Volume to Capacity	0.01	1.07	0.54	1.43	Err
Queue Length 95th (ft)	1	0	0	68	Err
Control Delay (s)	0.3	0.0	0.0	911.7	Err
Lane LOS	A			F	F
Approach Delay (s)	0.1			911.7	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4960						3369		1736	3471	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		4960						3369		1736	3471	
Volume (vph)	183	3223	67	0	0	0	0	720	175	186	737	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.80	0.92	0.92	0.92	0.92	0.72
Adj. Flow (vph)	193	3393	71	0	0	0	0	783	190	202	801	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	16	0	0	0	0
Lane Group Flow (vph)	0	3655	0	0	0	0	0	957	0	202	801	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	0%	4%	4%	4%	4%	0%
Turn Type	Perm									Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2											
Actuated Green, G (s)		45.6						17.0		10.0	31.2	
Effective Green, g (s)		47.2						18.6		10.2	32.8	
Actuated g/C Ratio		0.54						0.21		0.12	0.37	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		5.6						4.4		2.0	5.9	
Lane Grp Cap (vph)		2660						712		201	1294	
v/s Ratio Prot								c0.28		c0.12	0.23	
v/s Ratio Perm		0.74										
v/c Ratio		1.37						1.34		1.00	0.62	
Uniform Delay, d1		20.4						34.7		38.9	22.5	
Progression Factor		1.00						1.00		0.68	1.01	
Incremental Delay, d2		170.7						164.3		20.2	0.2	
Delay (s)		191.1						199.0		46.6	22.8	
Level of Service		F						F		D	C	
Approach Delay (s)		191.1			0.0			199.0			27.6	
Approach LOS		F			A			F			C	

Intersection Summary

HCM Average Control Delay	163.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	3542	32	0	0	0	0	13	46	50	19	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.59	0.78	0.78	0.78	0.78	0.83
Hourly flow rate (vph)	11	3728	34	0	0	0	0	17	59	64	24	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)		346			345							
pX, platoon unblocked				0.48			0.48	0.48	0.48	0.48	0.48	
vC, conflicting volume	0			3762			3778	3766	1260	1272	3783	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			4599			4633	4607	0	0	4643	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	89	0	0	100
cM capacity (veh/h)	1622			12			0	1	517	0	0	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	943	1864	966	76	88
Volume Left	11	0	0	0	64
Volume Right	0	0	34	59	0
cSH	1622	1700	1700	2	0
Volume to Capacity	0.01	1.10	0.57	32.88	Err
Queue Length 95th (ft)	0	0	0	Err	Err
Control Delay (s)	0.2	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.0			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4969						3283		1770	1863	
Flt Permitted		1.00						1.00		0.30	1.00	
Satd. Flow (perm)		4969						3283		562	1863	
Volume (vph)	102	3459	77	0	0	0	0	280	261	51	501	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.92	0.92	0.92	0.92	0.93
Adj. Flow (vph)	107	3641	81	0	0	0	0	304	284	55	545	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3827	0	0	0	0	0	588	0	55	545	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.3						27.0		27.0	27.0	
Effective Green, g (s)		51.8						28.2		28.2	28.2	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		2925						1052		180	597	
v/s Ratio Prot								0.18			c0.29	
v/s Ratio Perm		0.77								0.10		
v/c Ratio		1.31						0.56		0.31	0.91	
Uniform Delay, d1		18.1						24.8		22.5	28.7	
Progression Factor		0.41						1.00		1.12	1.11	
Incremental Delay, d2		138.9						2.1		2.9	15.0	
Delay (s)		146.3						26.9		28.0	46.7	
Level of Service		F						C		C	D	
Approach Delay (s)		146.3			0.0			26.9			45.0	
Approach LOS		F			A			C			D	

Intersection Summary

HCM Average Control Delay	120.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.7%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	3721	37	0	0	0	0	15	57	21	38	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.69	0.78	0.78	0.78	0.78	0.77
Hourly flow rate (vph)	14	3917	39	0	0	0	0	19	73	27	49	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)		373			371							
pX, platoon unblocked				0.43			0.43	0.43	0.43	0.43	0.43	
vC, conflicting volume	0			3956			3988	3964	1325	1343	3983	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			5248			5324	5266	0	0	5312	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	84	0	0	100
cM capacity (veh/h)	1622			6			0	0	461	0	0	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	993	1958	1018	92	76
Volume Left	14	0	0	0	27
Volume Right	0	0	39	73	0
cSH	1622	1700	1700	1	0
Volume to Capacity	0.01	1.15	0.60	123.56	Err
Queue Length 95th (ft)	1	0	0	Err	Err
Control Delay (s)	0.2	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4957						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		4957						3539	1583	1770	3539	
Volume (vph)	255	3423	121	0	0	0	0	413	385	131	767	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.90
Adj. Flow (vph)	268	3603	127	0	0	0	0	449	418	142	834	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	25	0	0	0
Lane Group Flow (vph)	0	3994	0	0	0	0	0	449	393	142	834	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2								8			
Actuated Green, G (s)		46.2						17.4	17.4	8.6	30.6	
Effective Green, g (s)		47.8						19.0	19.0	9.2	32.2	
Actuated g/C Ratio		0.54						0.22	0.22	0.10	0.37	
Clearance Time (s)		5.6						5.6	5.6	4.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2693						764	342	185	1295	
v/s Ratio Prot								0.13		c0.08	0.24	
v/s Ratio Perm		0.81							c0.25			
v/c Ratio		1.48						0.59	1.15	0.77	0.64	
Uniform Delay, d1		20.1						31.0	34.5	38.4	23.1	
Progression Factor		0.47						1.00	1.00	1.25	1.31	
Incremental Delay, d2		217.6						3.3	95.5	1.6	0.2	
Delay (s)		227.0						34.3	130.0	49.6	30.5	
Level of Service		F						C	F	D	C	
Approach Delay (s)		227.0			0.0			80.4			33.2	
Approach LOS		F			A			F			C	

Intersection Summary

HCM Average Control Delay	172.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	115.1%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	90	3819	30	0	0	0	0	12	18	72	44	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.75	0.78	0.78	0.83	0.83	0.84
Hourly flow rate (vph)	95	4020	32	0	0	0	0	15	23	87	53	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)		377			348							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			4052			4252	4225	1356	1537	4241	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			5233			5658	5602	0	0	5635	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			0	0	95	0	0	100
cM capacity (veh/h)	1622			6			0	0	511	0	0	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	1100	2010	1037	38	140
Volume Left	95	0	0	0	87
Volume Right	0	0	32	23	0
cSH	1622	1700	1700	0	0
Volume to Capacity	0.06	1.18	0.61	162.52	Err
Queue Length 95th (ft)	5	0	0	Err	Err
Control Delay (s)	1.6	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.4			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						1.00	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4968						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.51	1.00	
Satd. Flow (perm)		4968						1863	1583	957	3539	
Volume (vph)	120	3701	88	0	0	0	0	166	221	117	164	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.79	0.87	0.87	0.87	0.87	0.93
Adj. Flow (vph)	126	3896	93	0	0	0	0	191	254	134	189	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4112	0	0	0	0	0	191	254	134	189	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		57.8						19.4	19.4	19.4	19.4	
Effective Green, g (s)		59.4						20.6	20.6	20.6	20.6	
Actuated g/C Ratio		0.68						0.23	0.23	0.23	0.23	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3353						436	371	224	828	
v/s Ratio Prot								0.10			0.05	
v/s Ratio Perm		0.83							c0.16	0.14		
v/c Ratio		1.23						0.44	0.68	0.60	0.23	
Uniform Delay, d1		14.3						28.8	30.7	30.0	27.3	
Progression Factor		0.56						1.00	1.00	1.23	1.23	
Incremental Delay, d2		102.2						0.3	4.1	2.0	0.0	
Delay (s)		110.3						29.0	34.9	38.7	33.6	
Level of Service		F						C	C	D	C	
Approach Delay (s)		110.3			0.0			32.4			35.7	
Approach LOS		F			A			C			D	

Intersection Summary

HCM Average Control Delay	98.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	115.9%	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												
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		0.91						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4972						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.62	1.00	
Satd. Flow (perm)		4972						1863	1583	1149	1863	
Volume (vph)	104	3862	73	0	0	0	0	126	174	102	149	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.73	0.87	0.87	0.87	0.87	0.68
Adj. Flow (vph)	109	4065	77	0	0	0	0	145	200	117	171	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4249	0	0	0	0	0	145	200	117	171	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3209						491	417	303	491	
v/s Ratio Prot								0.08			0.09	
v/s Ratio Perm		0.85							c0.13	0.10		
v/c Ratio		1.32						0.30	0.48	0.39	0.35	
Uniform Delay, d1		15.6						25.9	27.3	26.6	26.3	
Progression Factor		0.57						1.00	1.00	1.31	1.31	
Incremental Delay, d2		146.0						1.5	3.9	3.6	1.9	
Delay (s)		154.8						27.4	31.2	38.3	36.3	
Level of Service		F						C	C	D	D	
Approach Delay (s)		154.8			0.0			29.6			37.1	
Approach LOS		F			A			C			D	

Intersection Summary

HCM Average Control Delay	139.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Forecast Year 2035 With Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.97	*0.84	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1719	4921		3367	4560	1538	1626	1517		1603	1639	1495
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	1719	4921		3367	4560	1538	1626	1517		1603	1639	1495
Volume (vph)	70	2240	55	310	2205	145	25	5	215	80	10	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	74	2358	58	326	2321	153	29	6	247	96	12	48
RTOR Reduction (vph)	0	0	0	0	0	31	0	78	0	0	0	44
Lane Group Flow (vph)	74	2416	0	326	2321	122	29	175	0	51	57	4
Heavy Vehicles (%)	5%	5%	6%	4%	5%	5%	11%	2%	7%	7%	2%	8%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	6.3	79.6		9.6	82.0	82.0	8.6	8.6		7.7	7.7	7.7
Effective Green, g (s)	8.6	81.9		11.0	84.3	84.3	11.0	11.0		10.1	10.1	10.1
Actuated g/C Ratio	0.07	0.63		0.08	0.65	0.65	0.08	0.08		0.08	0.08	0.08
Clearance Time (s)	6.3	6.3		5.4	6.3	6.3	6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	114	3100		285	2957	997	138	128		125	127	116
v/s Ratio Prot	0.04	0.49		c0.10	c0.51		0.02	c0.12		0.03	c0.03	
v/s Ratio Perm						0.08						0.00
v/c Ratio	0.65	0.78		1.14	0.78	0.12	0.21	1.37		0.41	0.45	0.03
Uniform Delay, d1	59.2	17.5		59.5	16.4	8.7	55.5	59.5		57.1	57.3	55.4
Progression Factor	0.99	0.43		0.99	0.59	0.30	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	8.0	1.8		82.1	1.0	0.1	3.4	207.6		0.8	0.9	0.0
Delay (s)	66.4	9.2		140.9	10.6	2.7	58.9	267.1		57.9	58.2	55.5
Level of Service	E	A		F	B	A	E	F		E	E	E
Approach Delay (s)		10.9			25.4			245.7			57.3	
Approach LOS		B			C			F			E	

Intersection Summary

HCM Average Control Delay	30.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	0.88	1.00	1.00			
Frpb, ped/bikes		1.00	0.99		1.00	0.98	1.00	0.99			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			
Frt		0.99	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4532	1270		4988	2577	1671	1397			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4532	1270		4988	2577	1671	1397			
Volume (vph)	0	1615	920	0	2030	1165	450	0	630	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.92	0.92
Adj. Flow (vph)	0	1700	968	0	2137	1226	484	0	677	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1806	857	0	2137	1226	484	677	0	0	0
Confl. Peds. (#/hr)			2			2			2		
Heavy Vehicles (%)	2%	7%	8%	2%	4%	8%	8%	0%	14%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		74.2	130.0		74.2	130.0	44.6	44.6			
Effective Green, g (s)		76.0	130.0		76.0	130.0	46.0	46.0			
Actuated g/C Ratio		0.58	1.00		0.58	1.00	0.35	0.35			
Clearance Time (s)		5.8			5.8		5.4	5.4			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		2649	1270		2916	2577	591	494			
v/s Ratio Prot		0.40			c0.43		0.29	c0.48			
v/s Ratio Perm			0.67			0.48					
v/c Ratio		0.68	0.67		0.73	0.48	0.82	1.37			
Uniform Delay, d1		18.6	0.0		19.6	0.0	38.2	42.0			
Progression Factor		0.47	1.00		0.52	1.00	1.00	1.00			
Incremental Delay, d2		0.8	1.7		0.9	0.4	9.2	179.2			
Delay (s)		9.7	1.7		11.0	0.4	47.4	221.2			
Level of Service		A	A		B	A	D	F			
Approach Delay (s)		7.1			7.1			148.8		0.0	
Approach LOS		A			A			F		A	

Intersection Summary

HCM Average Control Delay	30.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.1%	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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.91		1.00	0.96	
Flt Protected	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1755		1588	1549	1049	2847	3137		1612	3026	
Flt Permitted	0.95	1.00		0.95	0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1612	1755		1588	1549	1049	2847	3137		1612	3026	
Volume (vph)	350	280	70	175	20	10	375	270	370	55	240	75
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92	0.87	0.87	0.87
Adj. Flow (vph)	380	304	76	201	23	11	408	293	402	63	276	86
RTOR Reduction (vph)	0	7	0	0	0	10	0	156	0	0	20	0
Lane Group Flow (vph)	380	373	0	118	106	1	408	539	0	63	342	0
Heavy Vehicles (%)	12%	4%	9%	8%	27%	54%	23%	8%	3%	12%	16%	12%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	34.0	34.0		15.5	15.5	15.5	21.5	55.9		8.4	41.3	
Effective Green, g (s)	34.2	34.2		15.2	15.2	15.2	22.7	56.5		8.1	41.9	
Actuated g/C Ratio	0.26	0.26		0.12	0.12	0.12	0.17	0.43		0.06	0.32	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	424	462		186	181	123	497	1363		100	975	
v/s Ratio Prot	c0.24	0.21		c0.07	0.07		c0.14	c0.17		c0.04	0.11	
v/s Ratio Perm						0.00						
v/c Ratio	0.90	0.81		0.63	0.59	0.01	0.82	0.40		0.63	0.35	
Uniform Delay, d1	46.2	44.8		54.7	54.4	50.8	51.7	25.1		59.5	33.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.60	0.35		1.00	1.00	
Incremental Delay, d2	21.4	10.5		7.9	5.8	0.0	5.9	0.5		9.1	1.0	
Delay (s)	67.6	55.4		62.6	60.2	50.8	36.8	9.2		68.6	34.7	
Level of Service	E	E		E	E	D	D	A		E	C	
Approach Delay (s)		61.5			61.0			19.4			39.7	
Approach LOS		E			E			B			D	

Intersection Summary

HCM Average Control Delay	39.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
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												
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
Lane Util. Factor	*0.90	*0.85			0.81		0.94		1.00	0.97		0.88
Frt	1.00	1.00			0.97		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	2730	4704			7186		4757		1583	3303		2429
Flt Permitted	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	2730	4704			7186		4757		1583	3303		2429
Volume (vph)	475	1590	0	0	2015	550	900	0	1100	200	0	280
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87
Adj. Flow (vph)	500	1674	0	0	2121	579	947	0	1158	230	0	322
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	3
Lane Group Flow (vph)	500	1674	0	0	2700	0	947	0	1158	230	0	319
Heavy Vehicles (%)	19%	3%	0%	0%	3%	6%	7%	0%	2%	6%	0%	17%
Turn Type	Prot						Prot		Free	Prot		Over
Protected Phases	5	2			6		8			4		5
Permitted Phases									Free			
Actuated Green, G (s)	28.8	90.7			56.7		28.5		130.0	30.2		28.8
Effective Green, g (s)	30.0	91.6			57.6		30.4		130.0	30.4		30.0
Actuated g/C Ratio	0.23	0.70			0.44		0.23		1.00	0.23		0.23
Clearance Time (s)	5.2	4.9			4.9		5.9			4.2		5.2
Vehicle Extension (s)	2.0	4.5			4.5		3.3			4.5		2.0
Lane Grp Cap (vph)	630	3315			3184		1112		1583	772		561
v/s Ratio Prot	0.18	0.36			c0.38		c0.20			0.07		0.13
v/s Ratio Perm									c0.73			
v/c Ratio	0.79	0.50			0.85		0.85		0.73	0.30		0.57
Uniform Delay, d1	47.1	8.8			32.3		47.6		0.0	41.0		44.3
Progression Factor	0.97	0.59			0.66		1.00		1.00	0.86		0.45
Incremental Delay, d2	4.5	0.4			2.6		6.5		3.0	0.3		0.7
Delay (s)	50.1	5.5			24.0		54.2		3.0	35.6		20.6
Level of Service	D	A			C		D		A	D		C
Approach Delay (s)		15.8			24.0			26.0			26.8	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
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												
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	0.86	1.00	0.97	0.86		0.91	0.91	0.88	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1736	6346	1538	3467	6335		3042	1537	2814	1719	1528	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1736	6346	1538	3467	6335		3042	1537	2814	1719	1528	
Volume (vph)	30	2295	565	841	2120	20	425	10	969	25	20	20
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.78	0.78	0.78
Adj. Flow (vph)	32	2416	595	885	2232	21	457	11	1042	32	26	26
RTOR Reduction (vph)	0	0	40	0	1	0	0	0	50	0	25	0
Lane Group Flow (vph)	32	2416	555	885	2252	0	305	163	992	32	27	0
Heavy Vehicles (%)	4%	3%	5%	1%	3%	6%	8%	0%	1%	5%	6%	24%
Turn Type	Prot		pm+ov	Prot			Split		pm+ov	Split		
Protected Phases	5	2	8	1	6		8	8	1	7	7	
Permitted Phases			2						8			
Actuated Green, G (s)	4.0	52.3	68.4	35.8	86.1		16.1	16.1	51.9	4.8	4.8	
Effective Green, g (s)	4.2	54.2	72.2	37.0	87.0		18.0	18.0	55.0	4.8	4.8	
Actuated g/C Ratio	0.03	0.42	0.56	0.28	0.67		0.14	0.14	0.42	0.04	0.04	
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2	4.0	4.0	
Vehicle Extension (s)	3.0	5.7	5.6	5.7	3.0		5.6	5.6	5.7	3.0	3.0	
Lane Grp Cap (vph)	56	2646	854	987	4240		421	213	1277	63	56	
v/s Ratio Prot	0.02	c0.38	0.09	c0.26	0.36		0.10	0.11	c0.22	c0.02	0.02	
v/s Ratio Perm			0.27						0.13			
v/c Ratio	0.57	0.91	0.65	0.90	0.53		0.72	0.77	0.78	0.51	0.48	
Uniform Delay, d1	62.0	35.7	20.1	44.7	11.0		53.6	54.0	32.2	61.4	61.4	
Progression Factor	0.88	0.82	0.92	1.00	1.00		0.97	0.97	0.71	1.00	1.00	
Incremental Delay, d2	11.1	5.2	3.2	11.6	0.5		7.6	17.1	2.7	6.3	6.4	
Delay (s)	65.7	34.4	21.7	56.3	11.5		59.6	69.2	25.6	67.7	67.8	
Level of Service	E	C	C	E	B		E	E	C	E	E	
Approach Delay (s)		32.2			24.1			37.2			67.8	
Approach LOS		C			C			D			E	

Intersection Summary

HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1835		1770	1863	1583	1770	3370		1770	3450	
Flt Permitted	0.63	1.00		0.55	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1171	1835		1019	1863	1583	1770	3370		1770	3450	
Volume (vph)	94	83	9	92	76	105	16	1205	342	89	1188	149
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	113	100	11	106	87	121	17	1296	368	96	1277	160
RTOR Reduction (vph)	0	0	0	0	0	105	0	0	0	0	0	0
Lane Group Flow (vph)	113	111	0	106	87	16	17	1664	0	96	1437	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	16.4	16.4		16.4	16.4	16.4	2.0	89.5		10.6	98.1	
Effective Green, g (s)	17.0	17.0		17.0	17.0	17.0	2.0	90.4		10.6	99.0	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.13	0.02	0.70		0.08	0.76	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	153	240		133	244	207	27	2343		144	2627	
v/s Ratio Prot		0.06			0.05		0.01	c0.49		c0.05	0.42	
v/s Ratio Perm	0.10			c0.10		0.01						
v/c Ratio	0.74	0.46		0.80	0.36	0.08	0.63	0.71		0.67	0.55	
Uniform Delay, d1	54.4	52.3		54.8	51.5	49.6	63.6	11.9		58.0	6.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.68	0.19		0.93	1.39	
Incremental Delay, d2	16.0	1.0		26.5	0.7	0.1	24.3	1.5		5.3	0.5	
Delay (s)	70.4	53.3		81.3	52.2	49.7	67.9	3.8		59.5	9.3	
Level of Service	E	D		F	D	D	E	A		E	A	
Approach Delay (s)		61.9			61.1			4.5			12.4	
Approach LOS		E			E			A			B	

Intersection Summary

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.0%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1639		1770	1863	1583	1770	3455		1770	3484	
Flt Permitted	0.74	1.00		0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1639		1374	1863	1583	1770	3455		1770	3484	
Volume (vph)	23	5	19	22	22	22	48	1510	55	22	1213	54
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	29	6	24	28	28	28	52	1624	59	24	1304	58
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	0
Lane Group Flow (vph)	29	30	0	28	28	2	52	1683	0	24	1362	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	6.6	6.6		6.6	6.6	6.6	11.2	106.0		4.4	99.2	
Effective Green, g (s)	7.2	7.2		7.2	7.2	7.2	11.2	106.4		4.4	99.6	
Actuated g/C Ratio	0.06	0.06		0.06	0.06	0.06	0.09	0.82		0.03	0.77	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	76	91		76	103	88	152	2828		60	2669	
v/s Ratio Prot		0.02			0.02		0.03	c0.49		0.01	c0.39	
v/s Ratio Perm	c0.02			0.02		0.00						
v/c Ratio	0.38	0.33		0.37	0.27	0.02	0.34	0.60		0.40	0.51	
Uniform Delay, d1	59.3	59.1		59.2	58.9	58.1	55.9	4.2		61.5	5.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.65	0.24		1.18	0.27	
Incremental Delay, d2	2.3	1.5		2.2	1.0	0.1	0.3	0.6		1.3	0.6	
Delay (s)	61.6	60.6		61.4	59.9	58.1	36.5	1.6		74.0	2.2	
Level of Service	E	E		E	E	E	D	A		E	A	
Approach Delay (s)		61.1			59.8			2.7			3.4	
Approach LOS		E			E			A			A	

Intersection Summary

HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.97		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3366		3427		1770	3505
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3366		3427		1770	3505
Volume (vph)	302	82	1521	166	46	1208
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	347	94	1635	178	49	1299
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	441	0	1813	0	49	1299
Heavy Vehicles (%)	2%	2%	4%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	20.3		89.0		7.2	100.2
Effective Green, g (s)	20.9		89.9		7.2	101.1
Actuated g/C Ratio	0.16		0.69		0.06	0.78
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	541		2370		98	2726
v/s Ratio Prot	c0.13		c0.53		0.03	c0.37
v/s Ratio Perm						
v/c Ratio	0.82		0.76		0.50	0.48
Uniform Delay, d1	52.7		13.1		59.7	5.1
Progression Factor	1.00		0.14		1.12	0.67
Incremental Delay, d2	8.7		1.6		1.3	0.5
Delay (s)	61.4		3.4		68.3	4.0
Level of Service	E		A		E	A
Approach Delay (s)	61.4		3.4			6.3
Approach LOS	E		A			A

Intersection Summary

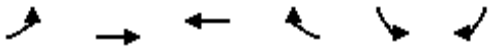
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	0.91	1.00	0.97	0.91	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	4940	1568	3433	5036	1568	3433	3505	1583	3400	3438	1568
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	4940	1568	3433	5036	1568	3433	3505	1583	3400	3438	1568
Volume (vph)	903	1748	238	130	621	72	499	689	434	126	601	783
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	951	1840	251	141	675	78	537	741	467	135	646	842
RTOR Reduction (vph)	0	0	83	0	0	64	0	0	73	0	0	5
Lane Group Flow (vph)	951	1840	168	141	675	14	537	741	394	135	646	837
Heavy Vehicles (%)	2%	5%	3%	2%	3%	3%	2%	3%	2%	3%	5%	3%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	41.2	57.1	57.1	6.0	21.9	21.9	21.0	41.7	41.7	7.0	27.7	68.9
Effective Green, g (s)	41.2	58.4	58.4	6.0	23.2	23.2	21.0	42.6	42.6	7.0	28.6	69.8
Actuated g/C Ratio	0.32	0.45	0.45	0.05	0.18	0.18	0.16	0.33	0.33	0.05	0.22	0.54
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	1088	2219	704	158	899	280	555	1149	519	183	756	890
v/s Ratio Prot	0.28	c0.37		0.04	c0.13		c0.16	0.21		0.04	0.19	c0.30
v/s Ratio Perm			0.11			0.01			0.25			0.24
v/c Ratio	0.87	0.83	0.24	0.89	0.75	0.05	0.97	0.64	0.76	0.74	0.85	0.94
Uniform Delay, d1	41.9	31.4	22.1	61.7	50.7	44.3	54.2	37.3	39.1	60.6	48.7	28.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.68	0.40
Incremental Delay, d2	7.7	2.6	0.1	41.0	3.4	0.1	29.6	2.8	10.0	10.7	10.2	15.3
Delay (s)	49.7	34.1	22.2	102.7	54.1	44.3	83.8	40.0	49.2	64.8	43.2	26.6
Level of Service	D	C	C	F	D	D	F	D	D	E	D	C
Approach Delay (s)		38.0			60.9			56.0			36.4	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	44.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3289	2979	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3462	3136	2	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.64	
vC, conflicting volume	3138				4002	785
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3138				4004	785
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	99
cM capacity (veh/h)	99				1	336

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	866	866	866	866	896	896	896	450	3
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	2	3
cSH	1700	1700	1700	1700	1700	1700	1700	1700	336
Volume to Capacity	0.51	0.51	0.51	0.51	0.53	0.53	0.53	0.26	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.8
Lane LOS									C
Approach Delay (s)	0.0				0.0				15.8
Approach LOS									C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↱			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3289	2977	3	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3462	3134	3	0	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.60	
vC, conflicting volume	3137				4289	1046
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3137				5133	1046
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	98
cM capacity (veh/h)	99				0	225

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	1154	1154	1154	1253	1253	630	5
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	3	5
cSH	1700	1700	1700	1700	1700	1700	225
Volume to Capacity	0.68	0.68	0.68	0.74	0.74	0.37	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	21.4
Lane LOS							C
Approach Delay (s)	0.0			0.0			21.4
Approach LOS							C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	66	3220	3	21	2919	8	0	0	12	0	0	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	69	3389	3	22	3073	8	0	0	15	0	0	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.61			0.61	0.61	0.61	0.61	0.61	
vC, conflicting volume	3081			3393			4677	6655	1131	4405	6653	1028
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3081			3646			5756	9009	0	5310	9005	1028
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	34			41			100	100	98	100	100	66
cM capacity (veh/h)	105			37			0	0	660	0	0	231

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	69	1356	1356	681	22	1229	1229	623	15	78
Volume Left	69	0	0	0	22	0	0	0	0	0
Volume Right	0	0	0	3	0	0	0	8	15	78
cSH	105	1700	1700	1700	37	1700	1700	1700	660	231
Volume to Capacity	0.66	0.80	0.80	0.40	0.59	0.72	0.72	0.37	0.02	0.34
Queue Length 95th (ft)	84	0	0	0	52	0	0	0	2	36
Control Delay (s)	90.0	0.0	0.0	0.0	193.3	0.0	0.0	0.0	10.6	28.3
Lane LOS	F				F				B	D
Approach Delay (s)	1.8				1.4				10.6	28.3
Approach LOS									B	D

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3224	8	0	2936	5	0	0	4	0	0	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3394	8	0	3091	5	0	0	5	0	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3096			3402			4443	6494	1135	4230	6495	1033
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3096			3402			4443	6494	1135	4230	6495	1033
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	97	100	100	93
cM capacity (veh/h)	103			78			0	0	196	1	0	230

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1357	1357	687	1236	1236	623	5	15
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	8	0	0	5	5	15
cSH	1700	1700	1700	1700	1700	1700	196	230
Volume to Capacity	0.80	0.80	0.40	0.73	0.73	0.37	0.03	0.07
Queue Length 95th (ft)	0	0	0	0	0	0	2	5
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	23.9	21.8
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			23.9	21.8
Approach LOS							C	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	31	3196	1	22	2923	12	0	0	4	0	0	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	33	3364	1	23	3077	13	0	0	5	0	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3089			3365			4525	6566	1122	4321	6560	1032
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3089			3365			4525	6566	1122	4321	6560	1032
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	69			71			100	100	97	100	100	90
cM capacity (veh/h)	104			80			0	0	200	0	0	230

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	33	1346	1346	674	23	1231	1231	628	5	23
Volume Left	33	0	0	0	23	0	0	0	0	0
Volume Right	0	0	0	1	0	0	0	13	5	23
cSH	104	1700	1700	1700	80	1700	1700	1700	200	230
Volume to Capacity	0.31	0.79	0.79	0.40	0.29	0.72	0.72	0.37	0.03	0.10
Queue Length 95th (ft)	30	0	0	0	26	0	0	0	2	8
Control Delay (s)	54.7	0.0	0.0	0.0	67.1	0.0	0.0	0.0	23.5	22.4
Lane LOS	F				F				C	C
Approach Delay (s)	0.5				0.5				23.5	22.4
Approach LOS									C	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3198	2	0	2944	5	0	0	10	0	0	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3366	2	0	3099	5	0	0	13	0	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3104			3368			4417	6472	1123	4237	6470	1036
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3104			3368			4417	6472	1123	4237	6470	1036
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	94	100	100	93
cM capacity (veh/h)	103			80			0	0	200	1	0	229

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1347	1347	675	1240	1240	625	13	17
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	2	0	0	5	13	17
cSH	1700	1700	1700	1700	1700	1700	200	229
Volume to Capacity	0.79	0.79	0.40	0.73	0.73	0.37	0.06	0.07
Queue Length 95th (ft)	0	0	0	0	0	0	5	6
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	24.3	22.0
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			24.3	22.0
Approach LOS							C	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	49	3159	0	26	2941	6	0	0	2	0	0	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	52	3325	0	27	3096	6	0	0	3	0	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3102			3325			4525	6585	1108	4368	6582	1035
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3102			3325			4525	6585	1108	4368	6582	1035
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	50			67			100	100	99	100	100	96
cM capacity (veh/h)	103			83			0	0	204	0	0	229

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	52	1330	1330	665	27	1238	1238	625	3	10
Volume Left	52	0	0	0	27	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	6	3	10
cSH	103	1700	1700	1700	83	1700	1700	1700	204	229
Volume to Capacity	0.50	0.78	0.78	0.39	0.33	0.73	0.73	0.37	0.01	0.04
Queue Length 95th (ft)	56	0	0	0	31	0	0	0	1	4
Control Delay (s)	71.1	0.0	0.0	0.0	68.0	0.0	0.0	0.0	22.8	21.5
Lane LOS	F				F				C	C
Approach Delay (s)	1.1				0.6				22.8	21.5
Approach LOS									C	C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3159	2	0	2966	5	0	0	4	0	0	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3325	2	0	3122	5	0	0	5	0	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	3127			3327			4376	6454	1109	4238	6452	1043
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3127			3327			4376	6454	1109	4238	6452	1043
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	97	100	100	96
cM capacity (veh/h)	100			83			0	0	204	1	0	226

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1330	1330	667	1249	1249	630	5	9
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	2	0	0	5	5	9
cSH	1700	1700	1700	1700	1700	1700	204	226
Volume to Capacity	0.78	0.78	0.39	0.73	0.73	0.37	0.03	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	2	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	23.1	21.6
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			23.1	21.6
Approach LOS							C	C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	0	2961	6	0	10
Peak Hour Factor	0.92	0.92	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	0	3117	6	0	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3123				3120	1042
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3123				3120	1042
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	94
cM capacity (veh/h)	101				9	226

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	1247	1247	630	13
Volume Left	0	0	0	0
Volume Right	0	0	6	13
cSH	1700	1700	1700	226
Volume to Capacity	0.73	0.73	0.37	0.06
Queue Length 95th (ft)	0	0	0	4
Control Delay (s)	0.0	0.0	0.0	21.9
Lane LOS				C
Approach Delay (s)	0.0			21.9
Approach LOS				C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	7	2961	5	1	0	0	0	0	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	7	3117	5	1	0	0	0	0	6
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)					1079							
pX, platoon unblocked	0.58						0.58	0.58		0.58	0.58	0.58
vC, conflicting volume	3122			0			794	3137	0	3134	3134	782
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2492			0			0	2517	0	2512	2512	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	99
cM capacity (veh/h)	105			1622			587	16	1084	8	16	631

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	527	1039	1039	525	1	6
Volume Left	7	0	0	0	1	0
Volume Right	0	0	0	5	0	6
cSH	1622	1700	1700	1700	587	316
Volume to Capacity	0.00	0.61	0.61	0.31	0.00	0.02
Queue Length 95th (ft)	0	0	0	0	0	2
Control Delay (s)	0.1	0.0	0.0	0.0	11.1	16.6
Lane LOS	A				B	C
Approach Delay (s)	0.0				11.1	16.6
Approach LOS					B	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	15	2957	12	11	1	0	0	4	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	16	3113	13	14	1	0	0	5	6
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)					728							
pX, platoon unblocked	0.55						0.55	0.55		0.55	0.55	0.55
vC, conflicting volume	3125			0			812	3157	0	3151	3151	784
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2409			0			0	2467	0	2456	2455	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	92	100	100	69	99
cM capacity (veh/h)	107			1622			420	16	1084	8	17	596

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	535	1038	1038	531	15	12
Volume Left	16	0	0	0	14	0
Volume Right	0	0	0	13	0	6
cSH	1622	1700	1700	1700	137	37
Volume to Capacity	0.01	0.61	0.61	0.31	0.11	0.31
Queue Length 95th (ft)	1	0	0	0	9	26
Control Delay (s)	0.3	0.0	0.0	0.0	34.7	140.1
Lane LOS	A				D	F
Approach Delay (s)	0.1				34.7	140.1
Approach LOS					D	F

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	6	2967	11	15	3	0	0	2	2
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	6	3123	12	19	4	0	0	3	3
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)					372							
pX, platoon unblocked	0.52						0.52	0.52		0.52	0.52	0.52
vC, conflicting volume	3135			0			795	3147	0	3144	3142	787
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2337			0			0	2361	0	2353	2350	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	79	100	100	86	100
cM capacity (veh/h)	108			1622			472	18	1084	8	18	564

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	527	1041	1041	532	23	5
Volume Left	6	0	0	0	19	0
Volume Right	0	0	0	12	0	3
cSH	1622	1700	1700	1700	91	37
Volume to Capacity	0.00	0.61	0.61	0.31	0.25	0.14
Queue Length 95th (ft)	0	0	0	0	23	11
Control Delay (s)	0.1	0.0	0.0	0.0	57.5	120.9
Lane LOS	A				F	F
Approach Delay (s)	0.0				57.5	120.9
Approach LOS					F	F

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.95	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6086		1752	3505			3319	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6086		1752	3505			3319	
Volume (vph)	0	0	0	294	2623	58	47	437	0	0	572	314
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	309	2761	61	54	502	0	0	622	341
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	29	0
Lane Group Flow (vph)	0	0	0	0	3128	0	54	502	0	0	934	0
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	0%	0%	3%	3%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					46.0		4.8	34.8			26.3	
Effective Green, g (s)					46.6		4.5	35.4			26.9	
Actuated g/C Ratio					0.52		0.05	0.39			0.30	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					3151		88	1379			992	
v/s Ratio Prot							c0.03	0.14			c0.28	
v/s Ratio Perm					0.51							
v/c Ratio					0.99		0.61	0.36			0.94	
Uniform Delay, d1					21.5		41.9	19.3			30.8	
Progression Factor					0.37		0.93	1.37			1.00	
Incremental Delay, d2					10.8		7.2	0.6			17.5	
Delay (s)					18.7		46.2	27.1			48.2	
Level of Service					B		D	C			D	
Approach Delay (s)		0.0			18.7			29.0			48.2	
Approach LOS		A			B			C			D	

Intersection Summary

HCM Average Control Delay	26.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	31	2949	16	14	20	0	0	15	12
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	33	3104	17	18	26	0	0	19	15
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)		346			345							
pX, platoon unblocked	0.61						0.61	0.61		0.61	0.61	0.61
vC, conflicting volume	3121			0			851	3186	0	3191	3178	784
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2560			0			0	2667	0	2674	2653	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	0	100	0	0	98
cM capacity (veh/h)	104			1622			0	13	1084	0	14	662

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	550	1035	1035	534	44	35
Volume Left	33	0	0	0	18	0
Volume Right	0	0	0	17	0	15
cSH	1622	1700	1700	1700	0	24
Volume to Capacity	0.02	0.61	0.61	0.31	Err	1.44
Queue Length 95th (ft)	2	0	0	0	Err	108
Control Delay (s)	0.6	0.0	0.0	0.0	Err	579.6
Lane LOS	A				F	F
Approach Delay (s)	0.1				Err	579.6
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6101		1770	1863			3385	
Flt Permitted					1.00		0.67	1.00			1.00	
Satd. Flow (perm)					6101		1251	1863			3385	
Volume (vph)	0	0	0	182	2902	69	63	270	0	0	75	31
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	192	3055	73	72	310	0	0	90	37
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	0	3317	0	72	310	0	0	125	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					58.4		20.4	20.4			20.4	
Effective Green, g (s)					60.0		22.0	22.0			22.0	
Actuated g/C Ratio					0.67		0.24	0.24			0.24	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					4067		306	455			827	
v/s Ratio Prot								c0.17			0.04	
v/s Ratio Perm					0.54		0.06					
v/c Ratio					0.82		0.24	0.68			0.15	
Uniform Delay, d1					11.0		27.3	30.8			26.7	
Progression Factor					0.06		0.53	0.55			1.00	
Incremental Delay, d2					0.6		1.4	6.4			0.4	
Delay (s)					1.3		16.0	23.3			27.1	
Level of Service					A		B	C			C	
Approach Delay (s)		0.0			1.3			21.9			27.1	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	4.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.5%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	31	3142	19	1	7	0	0	1	10
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	33	3307	20	1	9	0	0	1	13
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)		373			371							
pX, platoon unblocked	0.44						0.44	0.44		0.44	0.44	0.44
vC, conflicting volume	3327			0			893	3393	0	3387	3383	837
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2480			0			0	2628	0	2615	2605	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	12	100	100	88	97
cM capacity (veh/h)	81			1622			393	10	1084	1	11	480

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	584	1102	1102	571	10	14
Volume Left	33	0	0	0	1	0
Volume Right	0	0	0	20	0	13
cSH	1622	1700	1700	1700	12	116
Volume to Capacity	0.02	0.65	0.65	0.34	0.89	0.12
Queue Length 95th (ft)	2	0	0	0	47	10
Control Delay (s)	0.6	0.0	0.0	0.0	643.2	47.0
Lane LOS	A				F	E
Approach Delay (s)	0.1				643.2	47.0
Approach LOS					F	E

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6094		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6094		1770	3539			3539	1583
Volume (vph)	0	0	0	242	3072	90	56	522	0	0	560	64
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	255	3234	95	61	567	0	0	609	70
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	0	0	0	3580	0	61	567	0	0	609	44
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					52.8		4.8	28.0			19.0	19.0
Effective Green, g (s)					53.4		5.0	28.6			19.6	19.6
Actuated g/C Ratio					0.59		0.06	0.32			0.22	0.22
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					3616		98	1125			771	345
v/s Ratio Prot							0.03	c0.16			c0.17	
v/s Ratio Perm					0.59							0.03
v/c Ratio					0.99		0.62	0.50			0.79	0.13
Uniform Delay, d1					18.0		41.6	24.9			33.3	28.3
Progression Factor					0.85		0.71	0.53			1.00	1.00
Incremental Delay, d2					8.7		6.7	1.3			8.1	0.8
Delay (s)					24.1		36.1	14.6			41.3	29.1
Level of Service					C		D	B			D	C
Approach Delay (s)		0.0			24.1			16.7			40.1	
Approach LOS		A			C			B			D	

Intersection Summary

HCM Average Control Delay	25.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.1%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	46	3388	72	16	6	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	48	3566	76	21	8	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		381			357							
pX, platoon unblocked	0.57						0.57	0.57		0.57	0.57	0.57
vC, conflicting volume	3642			0			988	3739	0	3705	3701	929
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3370			0			0	3540	0	3480	3473	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			96	0	100	0	100	100
cM capacity (veh/h)	45			1622			567	3	1084	0	4	616

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	643	1189	1189	670	21	8
Volume Left	48	0	0	0	21	0
Volume Right	0	0	0	76	0	0
cSH	1622	1700	1700	1700	567	3
Volume to Capacity	0.03	0.70	0.70	0.39	0.04	2.40
Queue Length 95th (ft)	2	0	0	0	3	50
Control Delay (s)	0.9	0.0	0.0	0.0	11.6	2592.1
Lane LOS	A				B	F
Approach Delay (s)	0.1				715.4	
Approach LOS					F	

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6102	1583	1770	1863			1863	1583
Flt Permitted					0.99	1.00	0.71	1.00			1.00	1.00
Satd. Flow (perm)					6102	1583	1328	1863			1863	1583
Volume (vph)	0	0	0	517	3433	16	28	27	0	0	53	45
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	544	3614	17	36	35	0	0	68	58
RTOR Reduction (vph)	0	0	0	0	0	3	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	4158	14	36	35	0	0	68	57
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6		6	8					4
Actuated Green, G (s)					70.2	70.2	8.7	8.7			8.7	8.7
Effective Green, g (s)					71.8	71.8	10.2	10.2			10.2	10.2
Actuated g/C Ratio					0.80	0.80	0.11	0.11			0.11	0.11
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4868	1263	151	211			211	179
v/s Ratio Prot								0.02			c0.04	
v/s Ratio Perm					0.68	0.01	0.03					0.04
v/c Ratio					0.85	0.01	0.24	0.17			0.32	0.32
Uniform Delay, d1					5.8	1.9	36.4	36.1			36.7	36.7
Progression Factor					0.12	0.00	0.71	0.71			1.00	1.00
Incremental Delay, d2					0.8	0.0	0.2	0.1			0.3	0.4
Delay (s)					1.5	0.0	26.1	25.8			37.0	37.1
Level of Service					A	A	C	C			D	D
Approach Delay (s)		0.0			1.5			26.0			37.1	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6134	1583	1770	1863			1863	1583
Flt Permitted					1.00	1.00	0.50	1.00			1.00	1.00
Satd. Flow (perm)					6134	1583	926	1863			1863	1583
Volume (vph)	0	0	0	0	3875	85	37	128	0	0	156	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	4079	89	45	154	0	0	179	62
RTOR Reduction (vph)	0	0	0	0	0	25	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	4079	64	45	154	0	0	179	62
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type						Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)					62.9	62.9	16.0	16.0			16.0	16.0
Effective Green, g (s)					64.5	64.5	17.5	17.5			17.5	17.5
Actuated g/C Ratio					0.72	0.72	0.19	0.19			0.19	0.19
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4396	1134	180	362			362	308
v/s Ratio Prot					c0.66			0.08			c0.10	
v/s Ratio Perm						0.04	0.05					0.04
v/c Ratio					0.93	0.06	0.25	0.43			0.49	0.20
Uniform Delay, d1					10.8	3.8	30.7	31.8			32.3	30.4
Progression Factor					1.00	1.00	1.14	1.12			1.00	1.00
Incremental Delay, d2					4.6	0.1	2.7	2.9			4.8	1.5
Delay (s)					15.4	3.9	37.8	38.7			37.1	31.9
Level of Service					B	A	D	D			D	C
Approach Delay (s)		0.0			15.1			38.5			35.7	
Approach LOS		A			B			D			D	

Intersection Summary

HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	3157	8	0	0	0	6
Peak Hour Factor	0.95	0.95	0.92	0.92	0.78	0.78
Hourly flow rate (vph)	3323	8	0	0	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				728		
pX, platoon unblocked						
vC, conflicting volume			3332		3327	835
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3332		3327	835
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	98
cM capacity (veh/h)			83		6	311

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1
Volume Total	949	949	949	483	8
Volume Left	0	0	0	0	0
Volume Right	0	0	0	8	8
cSH	1700	1700	1700	1700	311
Volume to Capacity	0.56	0.56	0.56	0.28	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	16.9
Lane LOS					C
Approach Delay (s)	0.0				16.9
Approach LOS					C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	3137	5	0	0	0	0	4	1	2	6	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	22	3302	5	0	0	0	0	5	1	3	8	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			3307			3353	3349	828	872	3352	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3307			3353	3349	828	872	3352	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	34	100	98	0	100
cM capacity (veh/h)	1622			85			0	8	314	112	8	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	572	1101	1101	556	6	10
Volume Left	22	0	0	0	0	3
Volume Right	0	0	0	5	1	0
cSH	1622	1700	1700	1700	10	10
Volume to Capacity	0.01	0.65	0.65	0.33	0.66	1.02
Queue Length 95th (ft)	1	0	0	0	34	49
Control Delay (s)	0.4	0.0	0.0	0.0	625.4	777.2
Lane LOS	A				F	F
Approach Delay (s)	0.1				625.4	777.2
Approach LOS					F	F

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6104						3505	1568	1752	3505	
Flt Permitted		1.00						1.00	1.00	0.41	1.00	
Satd. Flow (perm)		6104						3505	1568	762	3505	
Volume (vph)	213	2894	33	0	0	0	0	386	72	310	629	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.93	0.93	0.93
Adj. Flow (vph)	224	3046	35	0	0	0	0	444	83	333	676	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3303	0	0	0	0	0	444	82	333	676	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	3%	3%	3%	3%	0%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		50.4						28.4	28.4	28.4	28.4	
Effective Green, g (s)		52.0						30.0	30.0	30.0	30.0	
Actuated g/C Ratio		0.58						0.33	0.33	0.33	0.33	
Clearance Time (s)		5.6						5.6	5.6	5.6	5.6	
Vehicle Extension (s)		5.6						4.4	4.4	5.9	5.9	
Lane Grp Cap (vph)		3527						1168	523	254	1168	
v/s Ratio Prot								0.13			0.19	
v/s Ratio Perm		0.54							0.05	c0.44		
v/c Ratio		0.94						0.38	0.16	1.31	0.58	
Uniform Delay, d1		17.5						22.9	21.1	30.0	24.8	
Progression Factor		1.00						1.00	1.00	0.94	0.91	
Incremental Delay, d2		6.2						0.9	0.6	152.3	0.9	
Delay (s)		23.7						23.8	21.7	180.4	23.5	
Level of Service		C						C	C	F	C	
Approach Delay (s)		23.7			0.0			23.5			75.3	
Approach LOS		C			A			C			E	

Intersection Summary

HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	29	3222	25	0	0	0	0	9	9	36	20	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	31	3392	26	0	0	0	0	12	12	46	26	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)		346			345							
pX, platoon unblocked				0.51			0.51	0.51	0.51	0.51	0.51	
vC, conflicting volume	0			3418			3479	3466	861	915	3479	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2857			2977	2951	0	0	2977	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			0	0	98	0	0	100
cM capacity (veh/h)	1622			66			0	7	552	0	7	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	596	1131	1131	592	23	72
Volume Left	31	0	0	0	0	46
Volume Right	0	0	0	26	12	0
cSH	1622	1700	1700	1700	14	0
Volume to Capacity	0.02	0.67	0.67	0.35	1.62	Err
Queue Length 95th (ft)	1	0	0	0	89	Err
Control Delay (s)	0.6	0.0	0.0	0.0	846.7	Err
Lane LOS	A				F	F
Approach Delay (s)	0.1				846.7	Err
Approach LOS					F	F

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	1.00	
Frt		1.00						0.94		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6117						3311		1770	1863	
Flt Permitted		1.00						1.00		0.39	1.00	
Satd. Flow (perm)		6117						3311		732	1863	
Volume (vph)	127	3110	30	0	0	0	0	233	176	10	188	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	134	3274	32	0	0	0	0	268	202	12	227	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3439	0	0	0	0	0	470	0	12	227	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.5						28.8		28.8	28.8	
Effective Green, g (s)		52.0						30.0		30.0	30.0	
Actuated g/C Ratio		0.58						0.33		0.33	0.33	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		3534						1104		244	621	
v/s Ratio Prot								c0.14			0.12	
v/s Ratio Perm		0.56								0.02		
v/c Ratio		0.97						0.43		0.05	0.37	
Uniform Delay, d1		18.3						23.3		20.3	22.8	
Progression Factor		1.01						1.00		0.74	0.75	
Incremental Delay, d2		4.6						1.2		0.3	1.3	
Delay (s)		23.1						24.5		15.3	18.5	
Level of Service		C						C		B	B	
Approach Delay (s)		23.1			0.0			24.5			18.4	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.5%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	3252	30	0	0	0	0	0	12	2	30	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	15	3423	32	0	0	0	0	0	15	3	38	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)		373			371							
pX, platoon unblocked				0.46			0.46	0.46	0.46	0.46	0.46	
vC, conflicting volume	0			3455			3488	3468	872	885	3484	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2813			2884	2843	0	0	2877	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	100	97	99	0	100
cM capacity (veh/h)	1622			62			0	8	498	452	7	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	585	1141	1141	602	15	41
Volume Left	15	0	0	0	0	3
Volume Right	0	0	0	32	15	0
cSH	1622	1700	1700	1700	249	8
Volume to Capacity	0.01	0.67	0.67	0.35	0.06	5.25
Queue Length 95th (ft)	1	0	0	0	5	Err
Control Delay (s)	0.3	0.0	0.0	0.0	20.4	Err
Lane LOS	A				C	F
Approach Delay (s)	0.0				20.4	Err
Approach LOS					C	F

Intersection Summary				
Average Delay	116.5			
Intersection Capacity Utilization	64.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6098						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.36	1.00	
Satd. Flow (perm)		6098						3539	1583	673	3539	
Volume (vph)	275	2931	60	0	0	0	0	472	281	199	657	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	289	3085	63	0	0	0	0	513	305	216	714	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3434	0	0	0	0	0	513	304	216	714	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		50.4						28.4	28.4	28.4	28.4	
Effective Green, g (s)		52.0						30.0	30.0	30.0	30.0	
Actuated g/C Ratio		0.58						0.33	0.33	0.33	0.33	
Clearance Time (s)		5.6						5.6	5.6	5.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	3.9	3.9	
Lane Grp Cap (vph)		3523						1180	528	224	1180	
v/s Ratio Prot								0.14			0.20	
v/s Ratio Perm		0.56							0.19	c0.32		
v/c Ratio		0.97						0.43	0.58	0.96	0.61	
Uniform Delay, d1		18.4						23.4	24.8	29.5	25.1	
Progression Factor		1.09						1.00	1.00	0.48	0.34	
Incremental Delay, d2		4.9						1.2	4.5	38.2	1.4	
Delay (s)		24.9						24.6	29.3	52.3	9.9	
Level of Service		C						C	C	D	A	
Approach Delay (s)		24.9			0.0			26.3			19.8	
Approach LOS		C			A			C			B	

Intersection Summary

HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.1%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	62	3294	55	0	0	0	0	7	12	36	11	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	65	3467	58	0	0	0	0	9	15	46	14	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)		377			348							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			3525			3634	3627	896	1002	3656	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2983			3216	3201	0	0	3263	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			0	0	97	0	0	100
cM capacity (veh/h)	1622			54			0	4	506	0	4	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	643	1156	1156	636	24	60
Volume Left	65	0	0	0	0	46
Volume Right	0	0	0	58	15	0
cSH	1622	1700	1700	1700	12	0
Volume to Capacity	0.04	0.68	0.68	0.37	2.06	Err
Queue Length 95th (ft)	3	0	0	0	98	Err
Control Delay (s)	1.1	0.0	0.0	0.0	1129.4	Err
Lane LOS	A				F	F
Approach Delay (s)	0.2				1129.4	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6081						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.71	1.00	
Satd. Flow (perm)		6081						1863	1583	1324	3539	
Volume (vph)	145	3032	165	0	0	0	0	59	98	82	551	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	153	3192	174	0	0	0	0	71	118	89	599	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	3511	0	0	0	0	0	71	116	89	599	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		60.6						18.6	18.6	18.6	18.6	
Effective Green, g (s)		62.2						19.8	19.8	19.8	19.8	
Actuated g/C Ratio		0.69						0.22	0.22	0.22	0.22	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4203						410	348	291	779	
v/s Ratio Prot								0.04			c0.17	
v/s Ratio Perm		0.58							0.07	0.07		
v/c Ratio		0.84						0.17	0.33	0.31	0.77	
Uniform Delay, d1		10.2						28.5	29.6	29.4	33.0	
Progression Factor		0.26						1.00	1.00	0.88	0.91	
Incremental Delay, d2		0.8						0.1	0.2	0.2	2.9	
Delay (s)		3.4						28.5	29.8	26.0	32.9	
Level of Service		A						C	C	C	C	
Approach Delay (s)		3.4			0.0			29.3			32.0	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6106						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.71	1.00	
Satd. Flow (perm)		6106						1863	1583	1325	1863	
Volume (vph)	140	3007	65	0	0	0	0	58	51	29	140	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	147	3165	68	0	0	0	0	70	61	35	169	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	3377	0	0	0	0	0	70	59	35	169	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		61.2						19.0	19.0	18.0	18.0	
Effective Green, g (s)		62.8						19.2	19.2	19.2	19.2	
Actuated g/C Ratio		0.70						0.21	0.21	0.21	0.21	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4261						397	338	283	397	
v/s Ratio Prot								0.04			c0.09	
v/s Ratio Perm		0.55							0.04	0.03		
v/c Ratio		0.79						0.18	0.18	0.12	0.43	
Uniform Delay, d1		9.2						28.9	28.9	28.6	30.6	
Progression Factor		0.22						1.00	1.00	0.12	0.15	
Incremental Delay, d2		0.9						1.0	1.1	0.8	3.0	
Delay (s)		2.9						29.9	30.1	4.3	7.5	
Level of Service		A						C	C	A	A	
Approach Delay (s)		2.9			0.0			30.0			7.0	
Approach LOS		A			A			C			A	

Intersection Summary

HCM Average Control Delay	4.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.0%	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												
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		0.97	0.91	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1612	4834		3400	4893	1568	1626	1573		1665	1672	1429
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1612	4834		3400	4893	1568	1626	1573		1665	1672	1429
Volume (vph)	90	2635	45	405	2420	420	90	5	290	375	5	115
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	95	2774	47	426	2547	442	103	6	333	431	6	132
RTOR Reduction (vph)	0	0	0	0	0	125	0	105	0	0	0	48
Lane Group Flow (vph)	95	2821	0	426	2547	317	103	234	0	216	221	84
Heavy Vehicles (%)	12%	7%	9%	3%	6%	3%	11%	2%	3%	3%	0%	13%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	8.6	69.9		14.8	76.1	76.1	14.8	14.8		21.6	21.6	21.6
Effective Green, g (s)	8.8	72.2		15.0	78.4	78.4	15.0	15.0		21.8	21.8	21.8
Actuated g/C Ratio	0.06	0.52		0.11	0.56	0.56	0.11	0.11		0.16	0.16	0.16
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	101	2493		364	2740	878	174	169		259	260	223
v/s Ratio Prot	0.06	c0.58		c0.13	c0.52		0.06	c0.15		0.13	c0.13	
v/s Ratio Perm						0.20						0.06
v/c Ratio	0.94	1.13		1.17	0.93	0.36	0.59	1.38		0.83	0.85	0.38
Uniform Delay, d1	65.3	33.9		62.5	28.3	17.0	59.6	62.5		57.3	57.5	53.0
Progression Factor	0.99	0.74		0.77	0.42	0.07	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	68.3	64.7		79.6	0.8	0.1	3.6	204.5		19.3	21.7	0.4
Delay (s)	133.1	89.8		128.0	12.7	1.3	63.1	267.0		76.6	79.2	53.4
Level of Service	F	F		F	B	A	E	F		E	E	D
Approach Delay (s)		91.2			25.6			219.5			72.2	
Approach LOS		F			C			F			E	

Intersection Summary

HCM Average Control Delay	67.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	0.88	1.00	1.00			
Frpb, ped/bikes		1.00	0.99		1.00	0.98	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4713	1282		4940	2625	1641	1455			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4713	1282		4940	2625	1641	1455			
Volume (vph)	0	2050	1250	0	2385	1350	375	0	860	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.92	0.92
Adj. Flow (vph)	0	2158	1316	0	2511	1421	403	0	925	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2158	1316	0	2511	1421	403	925	0	0	0
Confl. Peds. (#/hr)			2			2					
Heavy Vehicles (%)	0%	4%	7%	0%	5%	6%	10%	0%	11%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		60.6	140.0		60.6	140.0	70.9	70.9			
Effective Green, g (s)		61.0	140.0		61.0	140.0	71.0	71.0			
Actuated g/C Ratio		0.44	1.00		0.44	1.00	0.51	0.51			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		2054	1282		2152	2625	832	738			
v/s Ratio Prot		0.46			c0.51		0.25	c0.64			
v/s Ratio Perm			1.03			0.54					
v/c Ratio		1.05	1.03		1.17	0.54	0.48	1.25			
Uniform Delay, d1		39.5	70.0		39.5	0.0	22.5	34.5			
Progression Factor		0.55	1.00		1.14	1.00	1.00	1.00			
Incremental Delay, d2		24.3	15.7		76.7	0.3	2.0	125.0			
Delay (s)		45.9	85.7		121.8	0.3	24.6	159.5			
Level of Service		D	F		F	A	C	F			
Approach Delay (s)		61.0			77.9			118.6		0.0	
Approach LOS		E			E			F		A	

Intersection Summary

HCM Average Control Delay	77.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	108.9%	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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1654		1633	1651	1553	3127	3233		1583	3302	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	1654		1633	1651	1553	3127	3233		1583	3302	
Volume (vph)	150	125	60	380	65	60	700	380	210	55	475	85
Peak-hour factor, PHF	0.87	0.87	0.87	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	172	144	69	413	71	65	753	409	226	60	516	92
RTOR Reduction (vph)	0	0	0	0	0	53	0	0	0	0	0	0
Lane Group Flow (vph)	172	213	0	238	246	12	753	635	0	60	608	0
Heavy Vehicles (%)	14%	8%	12%	5%	7%	4%	12%	5%	7%	14%	7%	6%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	16.8	16.8		23.2	23.2	23.2	30.6	56.3		7.5	31.7	
Effective Green, g (s)	17.0	17.0		22.9	22.9	22.9	31.8	56.9		7.2	32.3	
Actuated g/C Ratio	0.14	0.14		0.19	0.19	0.19	0.26	0.47		0.06	0.27	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	224	234		312	315	296	829	1533		95	889	
v/s Ratio Prot	0.11	c0.13		0.15	c0.15		c0.24	0.20		0.04	c0.18	
v/s Ratio Perm						0.01						
v/c Ratio	0.77	0.91		0.76	0.78	0.04	0.91	0.41		0.63	0.68	
Uniform Delay, d1	49.6	50.7		46.0	46.2	39.6	42.7	20.6		55.1	39.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	15.5	36.1		11.3	12.6	0.1	13.3	0.8		9.6	4.3	
Delay (s)	65.1	86.9		57.3	58.8	39.7	56.0	21.5		64.7	43.5	
Level of Service	E	F		E	E	D	E	C		E	D	
Approach Delay (s)		77.2			55.9			40.2			45.4	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	49.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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
Lane Util. Factor	*0.90	*0.85			0.81		0.94		1.00	0.97		0.88
Frpb, ped/bikes	1.00	1.00			1.00		1.00		1.00	1.00		1.00
Flpb, ped/bikes	1.00	1.00			1.00		1.00		1.00	1.00		1.00
Frt	1.00	1.00			0.97		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	2850	4750			7175		4713		1568	3400		2584
Flt Permitted	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	2850	4750			7175		4713		1568	3400		2584
Volume (vph)	675	1750	0	0	2185	600	1125	0	975	475	0	425
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	711	1842	0	0	2300	632	1184	0	1026	516	0	462
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	711	1842	0	0	2932	0	1184	0	1026	516	0	461
Confl. Peds. (#/hr)			2			2						
Heavy Vehicles (%)	14%	2%	0%	0%	3%	5%	8%	0%	3%	3%	0%	10%
Turn Type	Prot						Prot		Free	Prot		Over
Protected Phases	5	2			6		8			4		5
Permitted Phases									Free			
Actuated Green, G (s)	32.7	95.2			56.2		33.1		140.0	33.1		32.7
Effective Green, g (s)	35.0	97.0			58.0		35.0		140.0	35.0		35.0
Actuated g/C Ratio	0.25	0.69			0.41		0.25		1.00	0.25		0.25
Clearance Time (s)	6.3	5.8			5.8		5.9			5.9		6.3
Vehicle Extension (s)	2.0	4.5			4.5		3.3			2.0		2.0
Lane Grp Cap (vph)	713	3291			2973		1178		1568	850		646
v/s Ratio Prot	c0.25	0.39			c0.41		c0.25			0.15		0.18
v/s Ratio Perm									0.65			
v/c Ratio	1.00	0.56			0.99		1.01		0.65	0.61		0.71
Uniform Delay, d1	52.5	10.8			40.6		52.5		0.0	46.4		47.9
Progression Factor	1.34	0.94			0.61		1.00		1.00	0.45		0.95
Incremental Delay, d2	17.7	0.2			11.5		27.5		2.1	0.5		2.0
Delay (s)	88.0	10.4			36.4		80.0		2.1	21.6		47.6
Level of Service	F	B			D		E		A	C		D
Approach Delay (s)		32.0			36.4			43.8			33.8	
Approach LOS		C			D			D			C	

Intersection Summary

HCM Average Control Delay	36.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.1%	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												
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	0.86	1.00	0.97	0.86		0.91	0.91	0.88	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1752	6346	1568	3400	6282		3189	1614	2787	1805	1646	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1752	6346	1568	3400	6282		3189	1614	2787	1805	1646	
Volume (vph)	40	2680	480	673	2069	9	675	30	925	30	20	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.78	0.78	0.78
Adj. Flow (vph)	42	2821	505	708	2178	9	726	32	995	38	26	51
RTOR Reduction (vph)	0	0	36	0	0	0	0	0	35	0	49	0
Lane Group Flow (vph)	42	2821	469	708	2187	0	491	267	960	38	28	0
Heavy Vehicles (%)	3%	3%	3%	3%	4%	0%	3%	0%	2%	0%	0%	6%
Turn Type	Prot		pm+ov	Prot			Split		pm+ov	Split		
Protected Phases	5	2	8	1	6		8	8	1	7	7	
Permitted Phases			2						8			
Actuated Green, G (s)	7.4	61.7	84.0	29.0	85.8		22.3	22.3	51.3	6.0	6.0	
Effective Green, g (s)	7.1	63.6	87.8	30.2	86.7		24.2	24.2	54.4	6.0	6.0	
Actuated g/C Ratio	0.05	0.45	0.63	0.22	0.62		0.17	0.17	0.39	0.04	0.04	
Clearance Time (s)	3.7	5.9	5.9	5.2	4.9		5.9	5.9	5.2	4.0	4.0	
Vehicle Extension (s)	3.0	5.7	5.6	5.7	3.0		5.6	5.6	5.7	3.0	3.0	
Lane Grp Cap (vph)	89	2883	983	733	3890		551	279	1163	77	71	
v/s Ratio Prot	0.02	c0.44	0.08	c0.21	0.35		0.15	c0.17	0.18	c0.02	0.02	
v/s Ratio Perm			0.22						0.17			
v/c Ratio	0.47	0.98	0.48	0.97	0.56		0.89	0.96	0.83	0.49	0.40	
Uniform Delay, d1	64.6	37.5	13.9	54.4	15.6		56.6	57.4	38.5	65.5	65.2	
Progression Factor	0.94	0.85	0.81	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.2	10.8	1.3	25.4	0.6		19.2	43.9	5.7	4.9	3.6	
Delay (s)	63.7	42.8	12.6	79.8	16.2		75.8	101.3	44.2	70.4	68.9	
Level of Service	E	D	B	E	B		E	F	D	E	E	
Approach Delay (s)		38.5			31.7			61.7			69.4	
Approach LOS		D			C			E			E	

Intersection Summary

HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1788		1770	1863	1583	1770	3407		1770	3443	
Flt Permitted	0.63	1.00		0.40	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1168	1788		749	1863	1583	1770	3407		1770	3443	
Volume (vph)	137	130	47	127	89	110	25	1383	343	81	955	137
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	157	149	54	146	102	126	27	1487	369	87	1027	147
RTOR Reduction (vph)	0	0	0	0	0	91	0	0	0	0	0	0
Lane Group Flow (vph)	157	203	0	146	102	35	27	1856	0	87	1174	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	26.3	26.3		26.3	26.3	26.3	3.6	85.0		10.2	91.6	
Effective Green, g (s)	26.9	26.9		26.9	26.9	26.9	3.6	85.9		10.2	92.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.20	0.03	0.64		0.08	0.69	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	233	356		149	371	315	47	2168		134	2359	
v/s Ratio Prot		0.11			0.05		0.02	c0.54		c0.05	0.34	
v/s Ratio Perm	0.13			c0.19		0.02						
v/c Ratio	0.67	0.57		0.98	0.27	0.11	0.57	0.86		0.65	0.50	
Uniform Delay, d1	50.0	48.8		53.8	45.8	44.3	64.9	19.6		60.7	10.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.91	0.25		1.00	1.00	
Incremental Delay, d2	6.8	1.8		66.8	0.3	0.1	7.2	3.3		7.9	0.8	
Delay (s)	56.8	50.6		120.6	46.1	44.4	66.4	8.1		68.5	10.9	
Level of Service	E	D		F	D	D	E	A		E	B	
Approach Delay (s)		53.3			74.6			9.0			14.9	
Approach LOS		D			E			A			B	

Intersection Summary

HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.87		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1629		1770	1863	1583	1770	3483		1770	3499	
Flt Permitted	0.75	1.00		0.35	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1389	1629		657	1863	1583	1770	3483		1770	3499	
Volume (vph)	36	24	124	62	15	32	33	1683	79	29	1087	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	43	29	149	75	18	39	35	1810	85	31	1169	14
RTOR Reduction (vph)	0	0	0	0	0	33	0	0	0	0	0	0
Lane Group Flow (vph)	43	178	0	75	18	6	35	1895	0	31	1183	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	18.6	18.6		18.6	18.6	18.6	6.8	99.2		4.2	96.6	
Effective Green, g (s)	19.2	19.2		19.2	19.2	19.2	6.8	99.6		4.2	97.0	
Actuated g/C Ratio	0.14	0.14		0.14	0.14	0.14	0.05	0.74		0.03	0.72	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	198	232		93	265	225	89	2570		55	2514	
v/s Ratio Prot		0.11			0.01		c0.02	c0.54		0.02	0.34	
v/s Ratio Perm	0.03			c0.11		0.00						
v/c Ratio	0.22	0.77		0.81	0.07	0.02	0.39	0.74		0.56	0.47	
Uniform Delay, d1	51.2	55.7		56.1	50.1	49.8	62.1	10.2		64.5	8.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.88	0.16		0.89	0.60	
Incremental Delay, d2	0.4	13.5		37.3	0.1	0.0	0.7	1.2		6.5	0.5	
Delay (s)	51.7	69.3		93.4	50.2	49.9	55.6	2.9		64.1	5.4	
Level of Service	D	E		F	D	D	E	A		E	A	
Approach Delay (s)		65.8			74.6			3.8			6.9	
Approach LOS		E			E			A			A	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	135.0	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	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.91		0.99		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	3220		3481		1770	3505
Flt Permitted	0.98		1.00		0.95	1.00
Satd. Flow (perm)	3220		3481		1770	3505
Volume (vph)	168	264	1531	77	73	1200
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	193	303	1646	83	78	1290
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	496	0	1729	0	78	1290
Heavy Vehicles (%)	2%	2%	3%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	24.0		87.9		9.6	101.5
Effective Green, g (s)	24.6		88.8		9.6	102.4
Actuated g/C Ratio	0.18		0.66		0.07	0.76
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	587		2290		126	2659
v/s Ratio Prot	c0.15		c0.50		c0.04	0.37
v/s Ratio Perm						
v/c Ratio	1.03dr		0.76		0.62	0.49
Uniform Delay, d1	53.4		15.7		60.9	6.2
Progression Factor	1.00		0.13		1.03	0.83
Incremental Delay, d2	10.4		1.4		5.5	0.6
Delay (s)	63.7		3.3		68.0	5.8
Level of Service	E		A		E	A
Approach Delay (s)	63.7		3.3			9.3
Approach LOS	E		A			A

Intersection Summary

HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	0.91	1.00	0.97	0.91	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	5036	1583	3433	5036	1583	3400	3505	1568	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	5036	1583	3433	5036	1583	3400	3505	1568	3433	3539	1583
Volume (vph)	803	1292	458	565	1176	98	385	707	361	78	651	639
Peak-hour factor, PHF	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	845	1360	482	608	1265	105	414	760	388	84	700	687
RTOR Reduction (vph)	0	0	179	0	0	70	0	0	264	0	0	3
Lane Group Flow (vph)	845	1360	303	608	1265	35	414	760	124	84	700	684
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	35.0	48.7	48.7	24.0	37.7	37.7	16.0	38.1	38.1	6.0	28.1	63.1
Effective Green, g (s)	35.0	50.0	50.0	24.0	39.0	39.0	16.0	39.0	39.0	6.0	29.0	64.0
Actuated g/C Ratio	0.26	0.37	0.37	0.18	0.29	0.29	0.12	0.29	0.29	0.04	0.21	0.47
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	890	1865	586	610	1455	457	403	1013	453	153	760	750
v/s Ratio Prot	c0.25	0.27		c0.18	c0.25		c0.12	0.22		0.02	c0.20	0.24
v/s Ratio Perm			0.19			0.02			0.08			0.20
v/c Ratio	0.95	0.73	0.52	1.00	0.87	0.08	1.03	0.75	0.27	0.55	0.92	0.91
Uniform Delay, d1	49.1	36.7	33.1	55.5	45.6	34.9	59.5	43.6	37.1	63.2	51.9	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.81	0.62
Incremental Delay, d2	18.6	1.4	0.6	35.3	5.8	0.1	52.0	5.1	1.5	1.8	16.2	13.4
Delay (s)	67.8	38.0	33.7	90.8	51.3	35.0	111.5	48.7	38.6	53.8	58.4	33.8
Level of Service	E	D	C	F	D	C	F	D	D	D	E	C
Approach Delay (s)		46.6			62.6			62.8			46.7	
Approach LOS		D			E			E			D	

Intersection Summary

HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3635	2740	17	0	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3826	2884	18	0	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.55	
vC, conflicting volume	2902				4169	730
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2902				5118	730
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	96
cM capacity (veh/h)	124				0	365

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	1275	1275	1275	824	824	824	430	14
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	18	14
cSH	1700	1700	1700	1700	1700	1700	1700	365
Volume to Capacity	0.75	0.75	0.75	0.48	0.48	0.48	0.25	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.3
Lane LOS								C
Approach Delay (s)	0.0			0.0				15.3
Approach LOS								C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3635	2708	14	0	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3826	2851	15	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.55	
vC, conflicting volume	2865				4133	958
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2865				5056	958
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	76
cM capacity (veh/h)	128				0	258

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	1275	1275	1275	1140	1140	585	63
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	15	63
cSH	1700	1700	1700	1700	1700	1700	258
Volume to Capacity	0.75	0.75	0.75	0.67	0.67	0.34	0.24
Queue Length 95th (ft)	0	0	0	0	0	0	23
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	23.4
Lane LOS							C
Approach Delay (s)	0.0			0.0			23.4
Approach LOS							C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	69	3543	23	24	2655	6	0	0	13	0	0	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	73	3729	24	25	2795	6	0	0	17	0	0	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1071										
pX, platoon unblocked				0.55			0.55	0.55	0.55	0.55	0.55	
vC, conflicting volume	2801			3754			4955	6738	1255	4254	6747	935
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2801			4366			6542	9774	0	5271	9790	935
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	47			0			0	0	97	0	0	68
cM capacity (veh/h)	136			17			0	0	598	0	0	267

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	73	1492	1492	770	25	1118	1118	565	17	86
Volume Left	73	0	0	0	25	0	0	0	0	0
Volume Right	0	0	0	24	0	0	0	6	17	86
cSH	136	1700	1700	1700	17	1700	1700	1700	598	267
Volume to Capacity	0.53	0.88	0.88	0.45	1.48	0.66	0.66	0.33	0.03	0.32
Queue Length 95th (ft)	65	0	0	0	91	0	0	0	2	34
Control Delay (s)	58.4	0.0	0.0	0.0	714.4	0.0	0.0	0.0	11.2	24.8
Lane LOS	F				F				B	C
Approach Delay (s)	1.1				6.4				11.2	24.8
Approach LOS									B	C

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3543	13	0	2662	8	0	0	8	0	0	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3729	14	0	2802	8	0	0	10	0	0	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2811			3743			4700	6547	1250	4060	6549	938
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2811			3743			4700	6547	1250	4060	6549	938
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	94	100	100	89
cM capacity (veh/h)	135			56			0	0	164	1	0	266

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1492	1492	760	1121	1121	569	10	29
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	14	0	0	8	10	29
cSH	1700	1700	1700	1700	1700	1700	164	266
Volume to Capacity	0.88	0.88	0.45	0.66	0.66	0.33	0.06	0.11
Queue Length 95th (ft)	0	0	0	0	0	0	5	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	28.4	20.2
Lane LOS							D	C
Approach Delay (s)	0.0			0.0			28.4	20.2
Approach LOS							D	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	28	3521	2	27	2661	18	0	0	3	0	0	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	29	3706	2	28	2801	19	0	0	4	0	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2820			3708			4768	6643	1236	4166	6635	943
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2820			3708			4768	6643	1236	4166	6635	943
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	78			51			100	100	98	100	100	96
cM capacity (veh/h)	134			58			0	0	168	0	0	264

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	29	1483	1483	743	28	1120	1120	579	4	12
Volume Left	29	0	0	0	28	0	0	0	0	0
Volume Right	0	0	0	2	0	0	0	19	4	12
cSH	134	1700	1700	1700	58	1700	1700	1700	168	264
Volume to Capacity	0.22	0.87	0.87	0.44	0.49	0.66	0.66	0.34	0.02	0.04
Queue Length 95th (ft)	20	0	0	0	48	0	0	0	2	3
Control Delay (s)	39.4	0.0	0.0	0.0	116.1	0.0	0.0	0.0	27.0	19.3
Lane LOS	E				F				D	C
Approach Delay (s)	0.3				1.2				27.0	19.3
Approach LOS									D	C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3518	6	0	2678	10	0	0	34	0	0	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3703	6	0	2819	11	0	0	44	0	0	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2829			3709			4682	6536	1238	4102	6534	945
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2829			3709			4682	6536	1238	4102	6534	945
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	74	100	100	86
cM capacity (veh/h)	132			58			0	0	167	1	0	263

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1481	1481	747	1128	1128	574	44	36
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	6	0	0	11	44	36
cSH	1700	1700	1700	1700	1700	1700	167	263
Volume to Capacity	0.87	0.87	0.44	0.66	0.66	0.34	0.26	0.14
Queue Length 95th (ft)	0	0	0	0	0	0	25	12
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	33.9	20.9
Lane LOS							D	C
Approach Delay (s)	0.0			0.0			33.9	20.9
Approach LOS							D	C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	83	3464	5	37	2666	18	0	0	3	0	0	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	87	3646	5	39	2806	19	0	0	4	0	0	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2825			3652			4865	6727	1218	4288	6720	945
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2825			3652			4865	6727	1218	4288	6720	945
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	34			36			100	100	98	100	100	89
cM capacity (veh/h)	133			61			0	0	172	0	0	263

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	87	1459	1459	735	39	1123	1123	580	4	28
Volume Left	87	0	0	0	39	0	0	0	0	0
Volume Right	0	0	0	5	0	0	0	19	4	28
cSH	133	1700	1700	1700	61	1700	1700	1700	172	263
Volume to Capacity	0.66	0.86	0.86	0.43	0.64	0.66	0.66	0.34	0.02	0.11
Queue Length 95th (ft)	89	0	0	0	67	0	0	0	2	9
Control Delay (s)	73.1	0.0	0.0	0.0	135.3	0.0	0.0	0.0	26.3	20.3
Lane LOS	F				F				D	C
Approach Delay (s)	1.7				1.8				26.3	20.3
Approach LOS									D	C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3462	5	0	2710	2	0	0	8	0	0	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3644	5	0	2853	2	0	0	10	0	0	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2855			3649			4612	6502	1217	4079	6503	952
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2855			3649			4612	6502	1217	4079	6503	952
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	94	100	100	95
cM capacity (veh/h)	129			61			0	0	173	1	0	260

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1458	1458	734	1141	1141	573	10	14
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	5	0	0	2	10	14
cSH	1700	1700	1700	1700	1700	1700	173	260
Volume to Capacity	0.86	0.86	0.43	0.67	0.67	0.34	0.06	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	5	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	27.2	19.6
Lane LOS							D	C
Approach Delay (s)	0.0			0.0			27.2	19.6
Approach LOS							D	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	0	2691	13	0	21
Peak Hour Factor	0.92	0.92	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	0	2833	14	0	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2846				2839	951
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2846				2839	951
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	90
cM capacity (veh/h)	130				14	260

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	1133	1133	580	27
Volume Left	0	0	0	0
Volume Right	0	0	14	27
cSH	1700	1700	1700	260
Volume to Capacity	0.67	0.67	0.34	0.10
Queue Length 95th (ft)	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	20.4
Lane LOS				C
Approach Delay (s)	0.0			20.4
Approach LOS				C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	28	2696	7	2	3	0	0	1	6
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	29	2838	7	3	4	0	0	1	8
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)					1079							
pX, platoon unblocked	0.64						0.64	0.64		0.64	0.64	0.64
vC, conflicting volume	2845			0			769	2904	0	2902	2901	713
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2198			0			0	2290	0	2287	2284	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	84	100	100	95	99
cM capacity (veh/h)	152			1622			614	24	1084	12	25	695

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	502	946	946	480	6	9
Volume Left	29	0	0	0	3	0
Volume Right	0	0	0	7	0	8
cSH	1622	1700	1700	1700	40	172
Volume to Capacity	0.02	0.56	0.56	0.28	0.16	0.05
Queue Length 95th (ft)	1	0	0	0	13	4
Control Delay (s)	0.6	0.0	0.0	0.0	112.8	31.5
Lane LOS	A				F	D
Approach Delay (s)	0.1				112.8	31.5
Approach LOS					F	D

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	20	2694	19	34	6	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	21	2836	20	44	8	0	0	10	4
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)					724							
pX, platoon unblocked	0.61						0.61	0.61		0.61	0.61	0.61
vC, conflicting volume	2856			0			756	2898	0	2892	2888	719
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2133			0			0	2201	0	2191	2185	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			90	71	100	100	62	99
cM capacity (veh/h)	154			1622			437	27	1084	12	27	664

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	494	945	945	493	51	14
Volume Left	21	0	0	0	44	0
Volume Right	0	0	0	20	0	4
cSH	1622	1700	1700	1700	132	38
Volume to Capacity	0.01	0.56	0.56	0.29	0.39	0.38
Queue Length 95th (ft)	1	0	0	0	41	32
Control Delay (s)	0.4	0.0	0.0	0.0	48.5	149.0
Lane LOS	A				E	F
Approach Delay (s)	0.1				48.5	149.0
Approach LOS					E	F

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	13	2698	9	14	3	0	0	5	21
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	14	2840	9	18	4	0	0	6	27
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)					361							
pX, platoon unblocked	0.59						0.59	0.59		0.59	0.59	0.59
vC, conflicting volume	2849			0			741	2877	0	2874	2872	715
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2054			0			0	2100	0	2095	2092	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			96	87	100	100	79	96
cM capacity (veh/h)	159			1622			482	30	1084	16	30	641

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	487	947	947	483	22	33
Volume Left	14	0	0	0	18	0
Volume Right	0	0	0	9	0	27
cSH	1622	1700	1700	1700	132	158
Volume to Capacity	0.01	0.56	0.56	0.28	0.17	0.21
Queue Length 95th (ft)	1	0	0	0	14	19
Control Delay (s)	0.3	0.0	0.0	0.0	37.7	38.2
Lane LOS	A				E	E
Approach Delay (s)	0.0				37.7	38.2
Approach LOS					E	E

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6043		1736	3505			3352	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6043		1736	3505			3352	
Volume (vph)	0	0	0	228	2370	35	88	768	0	0	693	262
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	240	2495	37	96	835	0	0	753	285
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	2770	0	96	835	0	0	1027	0
Heavy Vehicles (%)	0%	0%	0%	3%	4%	3%	4%	3%	0%	0%	3%	4%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					43.7		6.0	37.1			27.4	
Effective Green, g (s)					44.3		5.7	37.7			28.0	
Actuated g/C Ratio					0.49		0.06	0.42			0.31	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2974		110	1468			1043	
v/s Ratio Prot							c0.06	0.24			c0.31	
v/s Ratio Perm					0.46							
v/c Ratio					0.93		0.87	0.57			0.98	
Uniform Delay, d1					21.4		41.8	19.9			30.8	
Progression Factor					0.67		0.81	0.55			1.00	
Incremental Delay, d2					4.5		6.9	0.0			24.4	
Delay (s)					19.0		40.7	11.0			55.2	
Level of Service					B		D	B			E	
Approach Delay (s)		0.0			19.0			14.1			55.2	
Approach LOS		A			B			B			E	

Intersection Summary

HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.4%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	24	2552	55	12	25	0	0	26	69
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	25	2686	58	15	32	0	0	33	88
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)		346			345							
pX, platoon unblocked	0.65						0.65	0.65		0.65	0.65	0.65
vC, conflicting volume	2744			0			739	2795	0	2782	2766	701
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2066			0			0	2143	0	2123	2099	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	0	100	0	0	87
cM capacity (veh/h)	173			1622			0	31	1084	0	33	704

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	473	895	895	506	47	122
Volume Left	25	0	0	0	15	0
Volume Right	0	0	0	58	0	88
cSH	1622	1700	1700	1700	0	113
Volume to Capacity	0.02	0.53	0.53	0.30	Err	1.08
Queue Length 95th (ft)	1	0	0	0	Err	183
Control Delay (s)	0.5	0.0	0.0	0.0	Err	179.3
Lane LOS	A				F	F
Approach Delay (s)	0.1				Err	179.3
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6034		1770	1863			3411	
Flt Permitted					0.99		0.46	1.00			1.00	
Satd. Flow (perm)					6034		858	1863			3411	
Volume (vph)	0	0	0	357	2414	65	140	214	0	0	244	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	376	2541	68	161	246	0	0	280	89
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	0	2982	0	161	246	0	0	367	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					53.4		25.4	25.4			25.4	
Effective Green, g (s)					55.0		27.0	27.0			27.0	
Actuated g/C Ratio					0.61		0.30	0.30			0.30	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					3687		257	559			1023	
v/s Ratio Prot								0.13			0.11	
v/s Ratio Perm					0.49		c0.19					
v/c Ratio					0.81		0.63	0.44			0.36	
Uniform Delay, d1					13.5		27.2	25.4			24.7	
Progression Factor					0.18		0.37	0.39			1.00	
Incremental Delay, d2					0.8		7.2	1.6			1.0	
Delay (s)					3.3		17.3	11.5			25.7	
Level of Service					A		B	B			C	
Approach Delay (s)		0.0			3.3			13.8			25.7	
Approach LOS		A			A			B			C	

Intersection Summary

HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	59	2729	32	13	11	0	0	13	94
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	0	62	2873	34	17	14	0	0	16	113
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)		373			371							
pX, platoon unblocked	0.56						0.56	0.56		0.56	0.56	0.56
vC, conflicting volume	2906			0			850	3031	0	3021	3014	735
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2056			0			0	2276	0	2259	2246	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			92	34	100	100	30	81
cM capacity (veh/h)	151			1622			197	21	1084	6	22	610

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	541	958	958	512	31	129
Volume Left	62	0	0	0	17	0
Volume Right	0	0	0	34	0	113
cSH	1622	1700	1700	1700	41	184
Volume to Capacity	0.04	0.56	0.56	0.30	0.74	0.70
Queue Length 95th (ft)	3	0	0	0	70	108
Control Delay (s)	1.2	0.0	0.0	0.0	214.7	51.4
Lane LOS	A				F	F
Approach Delay (s)	0.2				214.7	51.4
Approach LOS					F	F

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6033		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6033		1770	3539			3539	1583
Volume (vph)	0	0	0	265	2381	85	255	573	0	0	705	184
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	279	2506	89	277	623	0	0	766	200
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	0	0	0	2869	0	277	623	0	0	766	179
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					43.5		14.2	37.3			18.9	18.9
Effective Green, g (s)					44.1		14.4	37.9			19.5	19.5
Actuated g/C Ratio					0.49		0.16	0.42			0.22	0.22
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2956		283	1490			767	343
v/s Ratio Prot							c0.16	0.18			c0.22	
v/s Ratio Perm					0.48							0.11
v/c Ratio					0.97		0.98	0.42			1.00	0.52
Uniform Delay, d1					22.3		37.6	18.3			35.2	31.1
Progression Factor					0.77		0.85	0.63			1.00	1.00
Incremental Delay, d2					9.1		43.0	0.7			32.2	5.6
Delay (s)					26.4		74.9	12.2			67.4	36.7
Level of Service					C		E	B			E	D
Approach Delay (s)		0.0			26.4			31.5			61.1	
Approach LOS		A			C			C			E	

Intersection Summary

HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.6%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	45	2677	30	54	52	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	47	2818	32	65	63	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		381			357							
pX, platoon unblocked	0.76						0.76	0.76		0.76	0.76	0.76
vC, conflicting volume	2849			0			799	2944	0	2960	2928	720
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2496			0			0	2620	0	2640	2599	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			91	0	100	0	100	100
cM capacity (veh/h)	138			1622			765	18	1084	0	18	829

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	517	939	939	501	65	63
Volume Left	47	0	0	0	65	0
Volume Right	0	0	0	32	0	0
cSH	1622	1700	1700	1700	765	18
Volume to Capacity	0.03	0.55	0.55	0.29	0.09	3.55
Queue Length 95th (ft)	2	0	0	0	7	Err
Control Delay (s)	0.9	0.0	0.0	0.0	10.1	Err
Lane LOS	A				B	F
Approach Delay (s)	0.2				4910.3	
Approach LOS					F	

Intersection Summary			
Average Delay	207.5		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6056	1583	1770	1863			1863	1583
Flt Permitted					0.99	1.00	0.66	1.00			1.00	1.00
Satd. Flow (perm)					6056	1583	1225	1863			1863	1583
Volume (vph)	0	0	0	295	2628	27	70	84	0	0	86	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	311	2766	28	84	101	0	0	104	65
RTOR Reduction (vph)	0	0	0	0	0	7	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	0	3077	21	84	101	0	0	104	63
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6		6	8					4
Actuated Green, G (s)					66.3	66.3	12.6	12.6			12.6	12.6
Effective Green, g (s)					67.9	67.9	14.1	14.1			14.1	14.1
Actuated g/C Ratio					0.75	0.75	0.16	0.16			0.16	0.16
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4569	1194	192	292			292	248
v/s Ratio Prot								0.05			0.06	
v/s Ratio Perm					0.51	0.01	c0.07					0.04
v/c Ratio					0.67	0.02	0.44	0.35			0.36	0.26
Uniform Delay, d1					5.5	2.8	34.4	33.8			33.9	33.3
Progression Factor					0.19	0.01	0.66	0.67			1.00	1.00
Incremental Delay, d2					0.5	0.0	0.4	0.2			0.3	0.2
Delay (s)					1.5	0.0	23.2	23.0			34.2	33.5
Level of Service					A	A	C	C			C	C
Approach Delay (s)		0.0			1.5			23.1			33.9	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	4.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6075	1583	1770	1863			1863	1583
Flt Permitted					1.00	1.00	0.52	1.00			1.00	1.00
Satd. Flow (perm)					6075	1583	969	1863			1863	1583
Volume (vph)	0	0	0	0	2756	47	93	154	0	0	190	101
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	2901	49	107	177	0	0	218	116
RTOR Reduction (vph)	0	0	0	0	0	20	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2901	29	107	177	0	0	218	115
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type						Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)					52.5	52.5	26.4	26.4			26.4	26.4
Effective Green, g (s)					54.1	54.1	27.9	27.9			27.9	27.9
Actuated g/C Ratio					0.60	0.60	0.31	0.31			0.31	0.31
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3652	952	300	578			578	491
v/s Ratio Prot					c0.48			0.10			c0.12	
v/s Ratio Perm						0.02	0.11					0.07
v/c Ratio					0.79	0.03	0.36	0.31			0.38	0.23
Uniform Delay, d1					13.7	7.3	24.1	23.7			24.3	23.1
Progression Factor					1.00	1.00	0.92	0.91			1.00	1.00
Incremental Delay, d2					1.9	0.1	2.7	1.1			1.9	1.1
Delay (s)					15.6	7.4	24.9	22.6			26.1	24.2
Level of Service					B	A	C	C			C	C
Approach Delay (s)		0.0			15.4			23.5			25.5	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	3493	9	0	0	0	6
Peak Hour Factor	0.95	0.95	0.92	0.92	0.78	0.78
Hourly flow rate (vph)	3677	9	0	0	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				728		
pX, platoon unblocked						
vC, conflicting volume			3686		3682	924
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3686		3682	924
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	97
cM capacity (veh/h)			59		3	271

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1
Volume Total	1051	1051	1051	535	8
Volume Left	0	0	0	0	0
Volume Right	0	0	0	9	8
cSH	1700	1700	1700	1700	271
Volume to Capacity	0.62	0.62	0.62	0.31	0.03
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	18.7
Lane LOS					C
Approach Delay (s)	0.0				18.7
Approach LOS					C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	29	3461	9	0	0	0	0	5	7	5	3	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	31	3643	9	0	0	0	0	6	9	6	4	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			3653			3711	3709	916	975	3714	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3653			3711	3709	916	975	3714	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	0	97	0	12	100
cM capacity (veh/h)	1622			61			0	4	275	0	4	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	638	1214	1214	617	15	10
Volume Left	31	0	0	0	0	6
Volume Right	0	0	0	9	9	0
cSH	1622	1700	1700	1700	10	0
Volume to Capacity	0.02	0.71	0.71	0.36	1.48	Err
Queue Length 95th (ft)	1	0	0	0	68	Err
Control Delay (s)	0.6	0.0	0.0	0.0	950.6	Err
Lane LOS	A				F	F
Approach Delay (s)	0.1				950.6	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		1.00						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6100						3402		1752	3505	
Flt Permitted		1.00						1.00		0.17	1.00	
Satd. Flow (perm)		6100						3402		307	3505	
Volume (vph)	183	3223	67	0	0	0	0	720	175	186	737	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	193	3393	71	0	0	0	0	774	188	200	792	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	3654	0	0	0	0	0	961	0	200	792	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	3%	3%	3%	3%	0%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		56.4						22.4		22.4	22.4	
Effective Green, g (s)		58.0						24.0		24.0	24.0	
Actuated g/C Ratio		0.64						0.27		0.27	0.27	
Clearance Time (s)		5.6						5.6		5.6	5.6	
Vehicle Extension (s)		5.6						4.4		5.9	5.9	
Lane Grp Cap (vph)		3931						907		82	935	
v/s Ratio Prot								0.28			0.23	
v/s Ratio Perm		0.60								c0.65		
v/c Ratio		0.93						1.06		2.44	0.85	
Uniform Delay, d1		14.2						33.0		33.0	31.3	
Progression Factor		1.00						1.00		1.50	1.52	
Incremental Delay, d2		5.2						47.0		657.8	2.9	
Delay (s)		19.4						80.0		707.5	50.4	
Level of Service		B						F		F	D	
Approach Delay (s)		19.4			0.0			80.0			182.9	
Approach LOS		B			A			F			F	

Intersection Summary

HCM Average Control Delay	58.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.4%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	3542	32	0	0	0	0	13	46	50	19	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	11	3728	34	0	0	0	0	17	59	64	24	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)		346			345							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			3762			3778	3766	949	961	3783	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3488			3524	3497	0	0	3534	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	88	0	0	100
cM capacity (veh/h)	1622			33			0	3	504	0	3	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	632	1243	1243	655	76	88
Volume Left	11	0	0	0	0	64
Volume Right	0	0	0	34	59	0
cSH	1622	1700	1700	1700	13	0
Volume to Capacity	0.01	0.73	0.73	0.39	5.91	Err
Queue Length 95th (ft)	0	0	0	0	Err	Err
Control Delay (s)	0.2	0.0	0.0	0.0	Err	Err
Lane LOS	A				F	F
Approach Delay (s)	0.0				Err	Err
Approach LOS					F	F

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6109						3283		1770	1863	
Flt Permitted		1.00						1.00		0.26	1.00	
Satd. Flow (perm)		6109						3283		477	1863	
Volume (vph)	102	3459	77	0	0	0	0	280	261	51	501	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	3641	81	0	0	0	0	304	284	55	545	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3826	0	0	0	0	0	588	0	55	545	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		56.5						22.8		22.8	22.8	
Effective Green, g (s)		58.0						24.0		24.0	24.0	
Actuated g/C Ratio		0.64						0.27		0.27	0.27	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		3937						875		127	497	
v/s Ratio Prot								0.18			c0.29	
v/s Ratio Perm		0.63								0.12		
v/c Ratio		0.97						0.67		0.43	1.10	
Uniform Delay, d1		15.2						29.5		27.4	33.0	
Progression Factor		0.46						1.00		0.67	0.70	
Incremental Delay, d2		3.2						4.1		8.3	65.1	
Delay (s)		10.2						33.6		26.6	88.3	
Level of Service		B						C		C	F	
Approach Delay (s)		10.2			0.0			33.6			82.6	
Approach LOS		B			A			C			F	

Intersection Summary

HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	121.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	3721	37	0	0	0	0	15	57	21	38	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	14	3917	39	0	0	0	0	19	73	27	49	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)		373			371							
pX, platoon unblocked				0.39			0.39	0.39	0.39	0.39	0.39	
vC, conflicting volume	0			3956			3988	3964	999	1016	3983	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3887			3970	3907	0	0	3957	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	83	0	0	100
cM capacity (veh/h)	1622			19			0	1	426	0	1	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	666	1306	1306	692	92	76
Volume Left	14	0	0	0	0	27
Volume Right	0	0	0	39	73	0
cSH	1622	1700	1700	1700	6	0
Volume to Capacity	0.01	0.77	0.77	0.41	15.28	Err
Queue Length 95th (ft)	1	0	0	0	Err	Err
Control Delay (s)	0.2	0.0	0.0	0.0	Err	Err
Lane LOS	A				F	F
Approach Delay (s)	0.0				Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6090						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.37	1.00	
Satd. Flow (perm)		6090						3539	1583	689	3539	
Volume (vph)	255	3423	121	0	0	0	0	413	385	131	767	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	268	3603	127	0	0	0	0	449	418	142	834	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3993	0	0	0	0	0	449	418	142	834	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		56.4						22.4	22.4	22.4	22.4	
Effective Green, g (s)		58.0						24.0	24.0	24.0	24.0	
Actuated g/C Ratio		0.64						0.27	0.27	0.27	0.27	
Clearance Time (s)		5.6						5.6	5.6	5.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	3.9	3.9	
Lane Grp Cap (vph)		3925						944	422	184	944	
v/s Ratio Prot								0.13			0.24	
v/s Ratio Perm		0.66							c0.26	0.21		
v/c Ratio		1.02						0.48	0.99	0.77	0.88	
Uniform Delay, d1		16.0						27.7	32.9	30.5	31.7	
Progression Factor		1.06						1.00	1.00	0.67	0.63	
Incremental Delay, d2		13.7						1.7	41.5	7.4	3.3	
Delay (s)		30.7						29.4	74.4	27.9	23.2	
Level of Service		C						C	E	C	C	
Approach Delay (s)		30.7			0.0			51.1			23.9	
Approach LOS		C			A			D			C	

Intersection Summary

HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.6%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	90	3819	30	0	0	0	0	12	18	72	44	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.83	0.83	0.83
Hourly flow rate (vph)	95	4020	32	0	0	0	0	15	23	87	53	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)		377			348							
pX, platoon unblocked				0.39			0.39	0.39	0.39	0.39	0.39	
vC, conflicting volume	0			4052			4252	4225	1021	1202	4241	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			4134			4653	4584	0	0	4625	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			0	0	94	0	0	100
cM capacity (veh/h)	1622			15			0	0	418	0	0	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	765	1340	1340	702	38	140
Volume Left	95	0	0	0	0	87
Volume Right	0	0	0	32	23	0
cSH	1622	1700	1700	1700	1	0
Volume to Capacity	0.06	0.79	0.79	0.41	38.04	Err
Queue Length 95th (ft)	5	0	0	0	Err	Err
Control Delay (s)	1.5	0.0	0.0	0.0	Err	Err
Lane LOS	A				F	F
Approach Delay (s)	0.3				Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6107						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.49	1.00	
Satd. Flow (perm)		6107						1863	1583	915	3539	
Volume (vph)	120	3701	88	0	0	0	0	166	221	117	164	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	126	3896	93	0	0	0	0	191	254	134	189	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4112	0	0	0	0	0	191	254	134	189	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		61.2						18.0	18.0	18.0	18.0	
Effective Green, g (s)		62.8						19.2	19.2	19.2	19.2	
Actuated g/C Ratio		0.70						0.21	0.21	0.21	0.21	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4261						397	338	195	755	
v/s Ratio Prot								0.10			0.05	
v/s Ratio Perm		0.67							c0.16	0.15		
v/c Ratio		0.96						0.48	0.75	0.69	0.25	
Uniform Delay, d1		12.6						31.0	33.2	32.6	29.4	
Progression Factor		0.39						1.00	1.00	0.82	0.82	
Incremental Delay, d2		2.6						0.3	8.1	6.3	0.1	
Delay (s)		7.6						31.4	41.3	32.9	24.1	
Level of Service		A						C	D	C	C	
Approach Delay (s)		7.6			0.0			37.0			27.7	
Approach LOS		A			A			D			C	

Intersection Summary

HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.9%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6112						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.57	1.00	
Satd. Flow (perm)		6112						1863	1583	1067	1863	
Volume (vph)	104	3862	73	0	0	0	0	126	174	102	149	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	109	4065	77	0	0	0	0	145	200	117	171	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4248	0	0	0	0	0	145	200	117	171	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		63.2						17.0	17.0	16.0	16.0	
Effective Green, g (s)		64.8						17.2	17.2	17.2	17.2	
Actuated g/C Ratio		0.72						0.19	0.19	0.19	0.19	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4401						356	303	204	356	
v/s Ratio Prot								0.08			0.09	
v/s Ratio Perm		0.70							c0.13	0.11		
v/c Ratio		0.97						0.41	0.66	0.57	0.48	
Uniform Delay, d1		11.6						31.9	33.7	33.1	32.4	
Progression Factor		0.29						1.00	1.00	0.45	0.43	
Incremental Delay, d2		3.2						3.4	10.8	10.9	4.5	
Delay (s)		6.5						35.4	44.5	25.8	18.5	
Level of Service		A						D	D	C	B	
Approach Delay (s)		6.5			0.0			40.6			21.5	
Approach LOS		A			A			D			C	

Intersection Summary			
HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Forecast Year 2015 No Build Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.97	*0.84	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1719	4926		3367	4560	1538	1626	1518		1603	1637	1495
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	1719	4926		3367	4560	1538	1626	1518		1603	1637	1495
Volume (vph)	85	2530	45	225	2065	130	20	5	205	85	10	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	89	2663	47	237	2174	137	23	6	236	102	12	48
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	45
Lane Group Flow (vph)	89	2710	0	237	2174	100	23	242	0	54	60	3
Heavy Vehicles (%)	5%	5%	6%	4%	5%	5%	11%	2%	7%	7%	2%	8%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	10.0	84.5		12.9	87.4	87.4	14.0	14.0		9.7	9.7	9.7
Effective Green, g (s)	10.2	86.8		13.1	89.7	89.7	14.2	14.2		9.9	9.9	9.9
Actuated g/C Ratio	0.07	0.62		0.09	0.64	0.64	0.10	0.10		0.07	0.07	0.07
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	125	3054		315	2922	985	165	154		113	116	106
v/s Ratio Prot	0.05	c0.55		0.07	c0.48		0.01	c0.16		0.03	c0.04	
v/s Ratio Perm						0.06						0.00
v/c Ratio	0.71	0.89		0.75	0.74	0.10	0.14	1.57		0.48	0.52	0.03
Uniform Delay, d1	63.5	22.5		61.9	17.3	9.7	57.3	62.9		62.6	62.7	60.6
Progression Factor	0.72	0.32		1.10	0.47	0.37	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	9.1	2.6		5.3	1.0	0.1	0.1	286.0		1.2	1.6	0.0
Delay (s)	54.9	9.8		73.5	9.1	3.7	57.5	348.9		63.7	64.4	60.6
Level of Service	D	A		E	A	A	E	F		E	E	E
Approach Delay (s)		11.2			14.8			323.6			63.0	
Approach LOS		B			B			F			E	

Intersection Summary

HCM Average Control Delay	28.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	1.00	1.00	1.00			
Frt		0.97	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4562	1286		4940	1468	1656	1509			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4562	1286		4940	1468	1656	1509			
Volume (vph)	0	1745	1075	0	2020	845	315	0	400	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1837	1132	0	2126	889	342	0	435	0	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2197	752	0	2126	889	342	435	0	0	0
Heavy Vehicles (%)	0%	4%	8%	0%	5%	10%	9%	0%	7%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		111.5	140.0		111.5	140.0	20.0	20.0			
Effective Green, g (s)		111.9	140.0		111.9	140.0	20.1	20.1			
Actuated g/C Ratio		0.80	1.00		0.80	1.00	0.14	0.14			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		3646	1286		3948	1468	238	217			
v/s Ratio Prot		0.48			0.43		0.21	c0.29			
v/s Ratio Perm			0.58			c0.61					
v/c Ratio		0.60	0.58		0.54	0.61	1.44	2.00			
Uniform Delay, d1		5.4	0.0		5.0	0.0	60.0	60.0			
Progression Factor		0.09	1.00		0.51	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.8		0.0	0.5	219.0	468.1			
Delay (s)		0.8	0.8		2.6	0.5	278.9	528.0			
Level of Service		A	A		A	A	F	F			
Approach Delay (s)		0.8			2.0			418.4		0.0	
Approach LOS		A			A			F		A	

Intersection Summary

HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	73.1%	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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1761		1559	1518	1252	3045	3202		1583	3027	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	1761		1559	1518	1252	3045	3202		1583	3027	
Volume (vph)	340	240	70	150	40	20	390	375	310	125	290	275
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	370	261	76	172	46	23	419	403	333	136	315	299
RTOR Reduction (vph)	0	9	0	0	0	20	0	113	0	0	130	0
Lane Group Flow (vph)	370	328	0	112	106	3	419	623	0	136	484	0
Heavy Vehicles (%)	8%	4%	5%	10%	23%	29%	15%	6%	4%	14%	12%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	27.3	27.3		13.2	13.2	13.2	8.9	32.3		7.3	29.2	
Effective Green, g (s)	27.5	27.5		12.9	12.9	12.9	10.1	32.9		7.0	29.8	
Actuated g/C Ratio	0.29	0.29		0.13	0.13	0.13	0.10	0.34		0.07	0.31	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	477	503		209	203	168	319	1094		115	937	
v/s Ratio Prot	c0.22	0.19		c0.07	0.07		c0.14	c0.19		0.09	0.16	
v/s Ratio Perm						0.00						
v/c Ratio	0.78	0.65		0.54	0.52	0.02	1.31	0.57		1.18	0.52	
Uniform Delay, d1	31.6	30.2		38.9	38.8	36.2	43.1	25.9		44.6	27.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.3	3.4		3.5	3.3	0.1	161.7	2.2		141.2	2.0	
Delay (s)	39.8	33.6		42.4	42.1	36.3	204.8	28.1		185.8	29.4	
Level of Service	D	C		D	D	D	F	C		F	C	
Approach Delay (s)		36.9			41.7			92.2			57.7	
Approach LOS		D			D			F			E	

Intersection Summary

HCM Average Control Delay	65.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	16.0
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												
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	*0.90	*0.85			0.91	1.00	0.97		1.00	0.97		1.00
Frpb, ped/bikes	1.00	1.00			1.00	0.99	1.00		1.00	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	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2954	4704			4988	1514	3242		1583	3303		1417
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2954	4704			4988	1514	3242		1583	3303		1417
Volume (vph)	510	1550	0	0	1490	575	1050	0	1000	195	0	325
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	537	1632	0	0	1568	605	1105	0	1053	212	0	353
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	0	0	2
Lane Group Flow (vph)	537	1632	0	0	1568	604	1105	0	1053	212	0	351
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	10%	3%	2%	2%	4%	6%	8%	2%	2%	6%	2%	14%
Turn Type	Prot					pm+ov	Prot		Free	Prot		custom
Protected Phases	5	2			6	4	8			4		5 7
Permitted Phases						6			Free			
Actuated Green, G (s)	19.0	68.0			43.8	106.7	39.0		140.0	62.9		36.0
Effective Green, g (s)	20.2	68.9			44.7	107.8	40.9		140.0	63.1		38.4
Actuated g/C Ratio	0.14	0.49			0.32	0.77	0.29		1.00	0.45		0.27
Clearance Time (s)	5.2	4.9			4.9	4.2	5.9			4.2		
Vehicle Extension (s)	2.0	4.5			4.5	4.5	3.3			4.5		
Lane Grp Cap (vph)	426	2315			1593	1209	947		1583	1489		389
v/s Ratio Prot	c0.18	0.35			c0.31	0.23	c0.34			0.06		c0.25
v/s Ratio Perm						0.17			0.67			
v/c Ratio	1.26	0.70			0.98	0.50	1.17		0.67	0.14		0.90
Uniform Delay, d1	59.9	27.6			47.3	6.0	49.5		0.0	22.6		49.0
Progression Factor	1.11	1.18			1.16	1.91	1.00		1.00	1.00		1.00
Incremental Delay, d2	129.5	1.2			14.7	0.4	86.6		2.2	0.1		22.9
Delay (s)	195.9	33.8			69.4	11.8	136.2		2.2	22.6		71.9
Level of Service	F	C			E	B	F		A	C		E
Approach Delay (s)		73.9			53.4			70.8			53.4	
Approach LOS		E			D			E			D	

Intersection Summary

HCM Average Control Delay	65.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	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												
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	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1736	3505	1538	3467	3500		1588	1604	1599		1752	1346
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1736	3505	1538	3467	3500		1588	1604	1599		1752	1346
Volume (vph)	20	2270	455	650	1755	15	290	10	655	20	15	20
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78
Adj. Flow (vph)	21	2389	479	684	1847	16	315	11	712	26	19	26
RTOR Reduction (vph)	0	0	109	0	0	0	0	0	30	0	0	25
Lane Group Flow (vph)	21	2389	370	684	1863	0	158	168	682	0	45	1
Heavy Vehicles (%)	4%	3%	5%	1%	3%	5%	8%	0%	1%	5%	6%	20%
Turn Type	Prot		Perm	Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2						8			7
Actuated Green, G (s)	3.6	76.2	76.2	23.5	98.1		14.1	14.1	37.6		4.8	4.8
Effective Green, g (s)	3.8	78.1	78.1	24.7	99.0		16.0	16.0	40.7		5.2	5.2
Actuated g/C Ratio	0.03	0.56	0.56	0.18	0.71		0.11	0.11	0.29		0.04	0.04
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	4.4
Vehicle Extension (s)	2.0	5.7	5.7	2.0	5.7		5.6	5.6	2.0		1.0	1.0
Lane Grp Cap (vph)	47	1955	858	612	2475		181	183	465		65	50
v/s Ratio Prot	0.01	c0.68		0.20	0.53		0.10	0.10	c0.26		c0.03	
v/s Ratio Perm			0.24						0.17			0.00
v/c Ratio	0.45	1.22	0.43	1.12	0.75		0.87	0.92	1.47		0.69	0.02
Uniform Delay, d1	67.1	31.0	18.0	57.6	12.8		61.0	61.4	49.7		66.6	64.9
Progression Factor	1.16	0.50	0.26	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.9	103.6	1.2	73.2	2.2		40.1	47.9	221.1		22.6	0.1
Delay (s)	79.7	119.0	6.0	130.8	15.0		101.1	109.3	270.7		89.2	65.0
Level of Service	E	F	A	F	B		F	F	F		F	E
Approach Delay (s)		100.0			46.1			218.8			80.3	
Approach LOS		F			D			F			F	

Intersection Summary

HCM Average Control Delay	97.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	118.3%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1835		1770	1863	1583	1770	3338		1770	3438	
Flt Permitted	0.66	1.00		0.58	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1235	1835		1082	1863	1583	1770	3338		1770	3438	
Volume (vph)	75	83	9	92	76	49	16	831	342	84	895	141
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	90	100	11	106	87	56	17	894	368	90	962	152
RTOR Reduction (vph)	0	0	0	0	0	49	0	0	0	0	0	0
Lane Group Flow (vph)	90	111	0	106	87	7	17	1262	0	90	1114	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	13.6	13.6		13.6	13.6	13.6	4.4	72.3		8.6	76.5	
Effective Green, g (s)	14.2	14.2		14.2	14.2	14.2	4.4	73.2		8.6	77.4	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.13	0.04	0.68		0.08	0.72	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	162	241		142	245	208	72	2262		141	2464	
v/s Ratio Prot		0.06			0.05		0.01	c0.38		c0.05	0.32	
v/s Ratio Perm	0.07			c0.10		0.00						
v/c Ratio	0.56	0.46		0.75	0.36	0.04	0.24	0.56		0.64	0.45	
Uniform Delay, d1	43.9	43.4		45.2	42.7	40.9	50.2	9.0		48.2	6.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.74	0.38		1.00	1.00	
Incremental Delay, d2	3.3	1.0		18.2	0.6	0.1	0.6	0.9		6.8	0.6	
Delay (s)	47.2	44.4		63.3	43.4	41.0	37.9	4.3		55.0	7.0	
Level of Service	D	D		E	D	D	D	A		D	A	
Approach Delay (s)		45.7			51.3			4.8			10.6	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1639		1770	1863	1583	1770	3451		1770	3477	
Flt Permitted	0.74	1.00		0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1639		1374	1863	1583	1770	3451		1770	3477	
Volume (vph)	12	5	19	22	22	22	47	1155	54	22	920	54
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	15	6	24	28	28	28	51	1242	58	24	1000	59
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	0
Lane Group Flow (vph)	15	30	0	28	28	2	51	1300	0	24	1059	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	6.1	6.1		6.1	6.1	6.1	13.5	86.0		2.9	75.4	
Effective Green, g (s)	6.7	6.7		6.7	6.7	6.7	13.5	86.4		2.9	75.8	
Actuated g/C Ratio	0.06	0.06		0.06	0.06	0.06	0.12	0.80		0.03	0.70	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	85	102		85	116	98	221	2761		48	2440	
v/s Ratio Prot		0.02			0.02		0.03	c0.38		0.01	c0.30	
v/s Ratio Perm	0.01			c0.02		0.00						
v/c Ratio	0.18	0.29		0.33	0.24	0.02	0.23	0.47		0.50	0.43	
Uniform Delay, d1	48.0	48.4		48.5	48.2	47.6	42.6	3.5		51.8	6.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.98	0.47		1.20	0.60	
Incremental Delay, d2	0.7	1.2		1.7	0.8	0.1	0.2	0.5		2.7	0.5	
Delay (s)	48.8	49.6		50.2	49.0	47.6	41.8	2.1		64.6	4.7	
Level of Service	D	D		D	D	D	D	A		E	A	
Approach Delay (s)		49.3			48.9			3.6			6.0	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.96		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3358		3437		1770	3505
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3358		3437		1770	3505
Volume (vph)	145	45	1211	98	46	915
Peak-hour factor, PHF	0.83	0.83	0.93	0.93	0.92	0.92
Adj. Flow (vph)	175	54	1302	105	50	995
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	229	0	1407	0	50	995
Heavy Vehicles (%)	2%	2%	4%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	11.1		76.8		6.6	87.4
Effective Green, g (s)	11.7		77.7		6.6	88.3
Actuated g/C Ratio	0.11		0.72		0.06	0.82
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	364		2473		108	2866
v/s Ratio Prot	c0.07		c0.41		c0.03	0.28
v/s Ratio Perm						
v/c Ratio	0.63		0.57		0.46	0.35
Uniform Delay, d1	46.1		7.2		49.0	2.5
Progression Factor	1.00		1.30		1.19	0.51
Incremental Delay, d2	2.4		0.7		1.1	0.3
Delay (s)	48.5		10.0		59.6	1.6
Level of Service	D		B		E	A
Approach Delay (s)	48.5		10.0			4.4
Approach LOS	D		B			A

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	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												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	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)	2891	3438	1568	2891	3505	1583	3400	3471	1568	3400	3438	1320
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)	2891	3438	1568	2891	3505	1583	3400	3471	1568	3400	3438	1320
Volume (vph)	661	1224	167	130	361	84	458	564	434	92	387	581
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	696	1288	176	141	392	91	492	606	467	99	416	625
RTOR Reduction (vph)	0	0	32	0	0	5	0	0	33	0	0	30
Lane Group Flow (vph)	696	1288	144	141	392	86	492	606	434	99	416	595
Heavy Vehicles (%)	2%	5%	3%	2%	3%	2%	3%	4%	3%	3%	5%	3%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	29.7	37.0	37.0	9.2	16.5	16.5	18.9	36.5	36.5	7.1	24.7	54.4
Effective Green, g (s)	29.7	38.3	38.3	9.2	17.8	17.8	18.9	37.4	37.4	7.1	25.6	55.3
Actuated g/C Ratio	0.27	0.35	0.35	0.09	0.16	0.16	0.18	0.35	0.35	0.07	0.24	0.51
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	795	1219	556	246	578	261	595	1202	543	224	815	676
v/s Ratio Prot	0.24	c0.37		0.05	c0.11		0.14	0.17		0.03	0.12	c0.24
v/s Ratio Perm			0.09			0.05			c0.28			0.21
v/c Ratio	0.88	1.06	0.26	0.57	0.68	0.33	0.83	0.50	0.80	0.44	0.51	0.88
Uniform Delay, d1	37.4	34.8	24.8	47.5	42.4	39.8	43.0	28.0	31.9	48.5	35.8	23.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	1.05
Incremental Delay, d2	10.3	42.1	0.2	2.0	2.9	0.5	8.8	1.5	11.7	0.5	2.1	11.8
Delay (s)	47.7	77.0	24.9	49.5	45.3	40.4	51.8	29.5	43.6	47.3	36.5	36.4
Level of Service	D	E	C	D	D	D	D	C	D	D	D	D
Approach Delay (s)		63.3			45.5			40.7			37.4	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM Average Control Delay	49.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2945	2418	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3100	2545	2	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.45	
vC, conflicting volume	2547				4096	1274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2547				6680	1274
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	98
cM capacity (veh/h)	172				0	158

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1550	1550	1697	851	3
Volume Left	0	0	0	0	0
Volume Right	0	0	0	2	3
cSH	1700	1700	1700	1700	158
Volume to Capacity	0.91	0.91	1.00	0.50	0.02
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	28.1
Lane LOS					D
Approach Delay (s)	0.0		0.0		28.1
Approach LOS					D

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	24	2921	2417	3	1	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	25	3075	2544	3	1	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.45	
vC, conflicting volume	2547				4134	1274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2547				6725	1274
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				0	98
cM capacity (veh/h)	172				0	158

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	25	1537	1537	1696	851	5
Volume Left	25	0	0	0	0	1
Volume Right	0	0	0	0	3	4
cSH	172	1700	1700	1700	1700	0
Volume to Capacity	0.15	0.90	0.90	1.00	0.50	175.02
Queue Length 95th (ft)	13	0	0	0	0	Err
Control Delay (s)	29.5	0.0	0.0	0.0	0.0	Err
Lane LOS	D					F
Approach Delay (s)	0.2			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	36	2883	3	14	2354	8	5	2	10	1	3	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	38	3035	3	15	2478	8	6	3	13	1	4	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.46			0.46	0.46	0.46	0.46	0.46	
vC, conflicting volume	2486			3038			4382	5628	1519	4106	5625	1243
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2486			4279			7231	9965	944	6624	9960	1243
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			4			0	0	89	0	0	53
cM capacity (veh/h)	182			15			0	0	120	0	0	166

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	38	2023	1015	15	1652	834	22	83
Volume Left	38	0	0	15	0	0	6	1
Volume Right	0	0	3	0	0	8	13	78
cSH	182	1700	1700	15	1700	1700	0	0
Volume to Capacity	0.21	1.19	0.60	0.96	0.97	0.49	Err	Err
Queue Length 95th (ft)	19	0	0	58	0	0	Err	Err
Control Delay (s)	30.0	0.0	0.0	551.0	0.0	0.0	Err	Err
Lane LOS	D			F			F	F
Approach Delay (s)	0.4			3.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	186.6		
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2880	8	10	2369	5	2	1	3	1	2	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	6	3032	8	11	2494	5	3	1	4	1	3	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2499			3040			4318	5568	1520	4046	5570	1249
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2499			3040			4318	5568	1520	4046	5570	1249
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			90			0	0	96	0	0	96
cM capacity (veh/h)	180			109			0	0	108	0	0	164

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	2021	1019	11	1662	836	8	10
Volume Left	6	0	0	11	0	0	3	1
Volume Right	0	0	8	0	0	5	4	6
cSH	180	1700	1700	109	1700	1700	0	0
Volume to Capacity	0.04	1.19	0.60	0.10	0.98	0.49	352.14	176.53
Queue Length 95th (ft)	3	0	0	8	0	0	Err	Err
Control Delay (s)	25.8	0.0	0.0	41.6	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.1			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	32.3		
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	2868	1	6	2372	12	2	1	3	1	0	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	16	3019	1	6	2497	13	3	1	4	1	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2509			3020			4312	5573	1510	4057	5567	1255
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2509			3020			4312	5573	1510	4057	5567	1255
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			94			0	0	96	0	100	92
cM capacity (veh/h)	178			111			0	0	109	0	0	163

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	16	2013	1007	6	1665	845	8	14
Volume Left	16	0	0	6	0	0	3	1
Volume Right	0	0	1	0	0	13	4	13
cSH	178	1700	1700	111	1700	1700	1	0
Volume to Capacity	0.09	1.18	0.59	0.06	0.98	0.50	12.34	Err
Queue Length 95th (ft)	7	0	0	4	0	0	Err	Err
Control Delay (s)	27.2	0.0	0.0	39.4	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.1			0.1			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	2857	2	11	2382	5	1	3	1	3	2	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	14	3007	2	12	2507	5	1	4	1	4	3	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2513			3009			4314	5572	1505	4066	5570	1256
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2513			3009			4314	5572	1505	4066	5570	1256
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			90			0	0	99	0	0	94
cM capacity (veh/h)	177			112			0	0	110	0	0	163

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	14	2005	1005	12	1672	841	6	15
Volume Left	14	0	0	12	0	0	1	4
Volume Right	0	0	2	0	0	5	1	9
cSH	177	1700	1700	112	1700	1700	0	0
Volume to Capacity	0.08	1.18	0.59	0.10	0.98	0.49	276.17	817.76
Queue Length 95th (ft)	6	0	0	8	0	0	Err	Err
Control Delay (s)	27.0	0.0	0.0	40.8	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.1			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	39.3		
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	2860	0	10	2389	6	1	3	2	5	1	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	1	3011	0	11	2515	6	1	4	3	6	1	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2521			3011			4292	5555	1505	4048	5552	1261
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2521			3011			4292	5555	1505	4048	5552	1261
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			91			0	0	98	0	0	94
cM capacity (veh/h)	176			112			0	0	110	0	0	161

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1	2007	1004	11	1676	845	8	18
Volume Left	1	0	0	11	0	0	1	6
Volume Right	0	0	0	0	0	6	3	10
cSH	176	1700	1700	112	1700	1700	0	0
Volume to Capacity	0.01	1.18	0.59	0.09	0.99	0.50	246.86	2431.25
Queue Length 95th (ft)	0	0	0	8	0	0	Err	Err
Control Delay (s)	25.6	0.0	0.0	40.5	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.0			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	46.1		
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	2	2863	2	3	2396	5	2	3	4	4	1	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	2	3014	2	3	2522	5	3	4	5	5	1	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2527			3016			4287	5553	1508	4044	5551	1264
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2527			3016			4287	5553	1508	4044	5551	1264
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			97			0	0	95	0	0	94
cM capacity (veh/h)	175			111			0	0	110	0	0	161

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	2	2009	1007	3	1681	846	12	15
Volume Left	2	0	0	3	0	0	3	5
Volume Right	0	0	2	0	0	5	5	9
cSH	175	1700	1700	111	1700	1700	0	0
Volume to Capacity	0.01	1.18	0.59	0.03	0.99	0.50	456.74	1366.68
Queue Length 95th (ft)	1	0	0	2	0	0	Err	Err
Control Delay (s)	25.8	0.0	0.0	38.3	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.0			0.0			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	48.3		
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	37	2824	10	2	2394	6	0	2	3	4	1	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	39	2973	11	2	2520	6	0	3	4	5	1	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2526			2983			4321	5586	1492	4093	5588	1263
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2526			2983			4321	5586	1492	4093	5588	1263
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	78			98			0	0	97	0	0	92
cM capacity (veh/h)	175			115			0	0	113	0	0	161

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	39	1982	1001	2	1680	846	6	19
Volume Left	39	0	0	2	0	0	0	5
Volume Right	0	0	11	0	0	6	4	13
cSH	175	1700	1700	115	1700	1700	0	0
Volume to Capacity	0.22	1.17	0.59	0.02	0.99	0.50	15.36	1827.15
Queue Length 95th (ft)	20	0	0	1	0	0	Err	Err
Control Delay (s)	31.3	0.0	0.0	36.9	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.4			0.0			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	46.2		
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	2396	5	1	0	0	0	0	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	0	2522	5	1	0	0	0	0	6
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)					1079							
pX, platoon unblocked	0.45						0.45	0.45		0.45	0.45	0.45
vC, conflicting volume	2527			0			1261	2527	0	2525	2525	1264
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3182			0			344	3182	0	3176	3176	350
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	100	100	100	98
cM capacity (veh/h)	43			1622			256	5	1084	2	5	288

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	1261	1266	1	6
Volume Left	0	0	1	0
Volume Right	0	5	0	6
cSH	1622	1700	256	144
Volume to Capacity	0.00	0.74	0.01	0.04
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	19.1	31.1
Lane LOS			C	D
Approach Delay (s)	0.0		19.1	31.1
Approach LOS			C	D

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	4	2392	8	4	1	0	0	4	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	4	2518	8	5	1	0	0	5	6
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)					728							
pX, platoon unblocked	0.51						0.51	0.51		0.51	0.51	0.51
vC, conflicting volume	2526			0			853	2535	0	2531	2531	844
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2063			0			0	2080	0	2073	2071	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	95	100	100	81	99
cM capacity (veh/h)	135			1622			435	27	1084	15	27	548

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	634	1259	638	6	12
Volume Left	4	0	0	5	0
Volume Right	0	0	8	0	6
cSH	1622	1700	1700	107	61
Volume to Capacity	0.00	0.74	0.38	0.06	0.19
Queue Length 95th (ft)	0	0	0	5	16
Control Delay (s)	0.1	0.0	0.0	40.8	81.1
Lane LOS	A			E	F
Approach Delay (s)	0.0			40.8	81.1
Approach LOS				E	F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	4	2398	9	4	3	0	0	2	2
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	4	2524	9	5	4	0	0	3	3
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)					372							
pX, platoon unblocked	0.48						0.48	0.48		0.48	0.48	0.48
vC, conflicting volume	2534			0			851	2542	0	2539	2537	846
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2036			0			0	2054	0	2048	2044	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	85	100	100	90	100
cM capacity (veh/h)	132			1622			456	26	1084	14	27	525

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	635	1262	641	9	5
Volume Left	4	0	0	5	0
Volume Right	0	0	9	0	3
cSH	1622	1700	1700	57	54
Volume to Capacity	0.00	0.74	0.38	0.16	0.10
Queue Length 95th (ft)	0	0	0	13	8
Control Delay (s)	0.1	0.0	0.0	79.3	82.5
Lane LOS	A			F	F
Approach Delay (s)	0.0			79.3	82.5
Approach LOS				F	F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.97	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					4998		1752	3505			3399	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					4998		1752	3505			3399	
Volume (vph)	0	0	0	243	2270	49	47	251	0	0	373	94
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.82	0.88	0.87	0.87
Adj. Flow (vph)	0	0	0	256	2389	52	54	289	0	0	429	108
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	24	0
Lane Group Flow (vph)	0	0	0	0	2695	0	54	289	0	0	513	0
Heavy Vehicles (%)	0%	0%	0%	3%	3%	3%	3%	3%	0%	0%	3%	3%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					47.6		4.9	31.2			22.6	
Effective Green, g (s)					48.2		4.6	31.8			23.2	
Actuated g/C Ratio					0.55		0.05	0.36			0.26	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2738		92	1267			896	
v/s Ratio Prot							c0.03	0.08			c0.15	
v/s Ratio Perm					0.54							
v/c Ratio					0.98		0.59	0.23			0.57	
Uniform Delay, d1					19.5		40.8	19.6			28.1	
Progression Factor					0.17		0.91	1.16			1.00	
Incremental Delay, d2					6.9		4.3	0.3			2.7	
Delay (s)					10.1		41.5	23.0			30.8	
Level of Service					B		D	C			C	
Approach Delay (s)		0.0			10.1			25.9			30.8	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	26	2544	13	10	14	0	0	10	8
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.63	0.66	0.78	0.78
Hourly flow rate (vph)	0	0	0	27	2678	14	13	18	0	0	13	10
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)		346			345							
pX, platoon unblocked	0.45						0.45	0.45		0.45	0.45	0.45
vC, conflicting volume	2692			0			954	2746	0	2748	2739	899
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2316			0			0	2438	0	2442	2423	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			87	0	100	0	9	98
cM capacity (veh/h)	96			1622			95	14	1084	0	14	489

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	697	1339	683	31	23
Volume Left	27	0	0	13	0
Volume Right	0	0	14	0	10
cSH	1622	1700	1700	21	25
Volume to Capacity	0.02	0.79	0.40	1.43	0.91
Queue Length 95th (ft)	1	0	0	101	70
Control Delay (s)	0.5	0.0	0.0	614.1	371.5
Lane LOS	A			F	F
Approach Delay (s)	0.1			614.1	371.5
Approach LOS				F	F

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					5007		1770	1863			3382	
Flt Permitted					1.00		0.66	1.00			1.00	
Satd. Flow (perm)					5007		1221	1863			3382	
Volume (vph)	0	0	0	150	2483	67	63	197	0	0	89	37
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.85	0.83	0.83
Adj. Flow (vph)	0	0	0	158	2614	71	72	226	0	0	107	45
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	0	2840	0	72	226	0	0	151	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					48.8		28.0	28.0			28.0	
Effective Green, g (s)					50.4		29.6	29.6			29.6	
Actuated g/C Ratio					0.57		0.34	0.34			0.34	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					2868		411	627			1138	
v/s Ratio Prot								c0.12			0.04	
v/s Ratio Perm					0.57		0.06					
v/c Ratio					0.99		0.18	0.36			0.13	
Uniform Delay, d1					18.6		20.6	22.1			20.3	
Progression Factor					0.08		0.93	0.97			1.00	
Incremental Delay, d2					3.3		0.8	1.3			0.2	
Delay (s)					4.7		19.9	22.6			20.5	
Level of Service					A		B	C			C	
Approach Delay (s)		0.0			4.7			22.0			20.5	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	27	2690	15	1	5	0	0	1	9
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.25	0.78	0.78
Hourly flow rate (vph)	0	0	0	28	2832	16	1	6	0	0	1	12
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)		373			371							
pX, platoon unblocked	0.46						0.46	0.46		0.46	0.46	0.46
vC, conflicting volume	2847			0			1001	2904	0	2900	2896	952
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2671			0			0	2794	0	2784	2777	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	23	100	100	85	98
cM capacity (veh/h)	71			1622			405	8	1084	1	9	504

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	736	1416	724	8	13
Volume Left	28	0	0	1	0
Volume Right	0	0	16	0	12
cSH	1622	1700	1700	10	86
Volume to Capacity	0.02	0.83	0.43	0.77	0.15
Queue Length 95th (ft)	1	0	0	39	13
Control Delay (s)	0.5	0.0	0.0	673.4	60.1
Lane LOS	A			F	F
Approach Delay (s)	0.1			673.4	60.1
Approach LOS				F	F

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5006		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					5006		1770	3539			3539	1583
Volume (vph)	0	0	0	177	2617	70	56	388	0	0	410	59
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	186	2755	74	64	446	0	0	471	68
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	43
Lane Group Flow (vph)	0	0	0	0	3012	0	64	446	0	0	471	25
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					47.7		6.0	31.1			20.9	20.9
Effective Green, g (s)					48.3		6.2	31.7			21.5	21.5
Actuated g/C Ratio					0.55		0.07	0.36			0.24	0.24
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2748		125	1275			865	387
v/s Ratio Prot							c0.04	0.13			c0.13	
v/s Ratio Perm					0.60							0.02
v/c Ratio					1.10		0.51	0.35			0.54	0.06
Uniform Delay, d1					19.8		39.4	20.6			29.0	25.5
Progression Factor					0.72		1.36	0.55			1.00	1.00
Incremental Delay, d2					46.5		1.0	0.5			2.5	0.3
Delay (s)					60.8		54.6	11.9			31.4	25.8
Level of Service					E		D	B			C	C
Approach Delay (s)		0.0			60.8			17.2			30.7	
Approach LOS		A			E			B			C	

Intersection Summary

HCM Average Control Delay	51.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	37	2828	68	14	5	0	0	2	22
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.83	0.78	0.78
Hourly flow rate (vph)	0	0	0	39	2977	72	18	6	0	0	3	28
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)		381			357							
pX, platoon unblocked	0.24						0.24	0.24		0.24	0.24	0.24
vC, conflicting volume	3048			0			1071	3126	0	3094	3091	1028
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3203			0			0	3529	0	3393	3379	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			0	0	100	0	0	89
cM capacity (veh/h)	22			1622			0	1	1084	0	2	259

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	783	1488	816	18	6	31
Volume Left	39	0	0	18	0	0
Volume Right	0	0	72	0	0	28
cSH	1622	1700	1700	0	1	20
Volume to Capacity	0.02	0.88	0.48	Err	4.66	1.51
Queue Length 95th (ft)	2	0	0	Err	Err	103
Control Delay (s)	0.7	0.0	0.0	Err	Err	661.7
Lane LOS	A			F	F	F
Approach Delay (s)	0.2			Err		661.7
Approach LOS				F		F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5006		1770	1863			1863	1583
Flt Permitted					0.99		0.72	1.00			1.00	1.00
Satd. Flow (perm)					5006		1348	1863			1863	1583
Volume (vph)	0	0	0	445	2899	13	24	23	0	0	40	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	468	3052	14	31	29	0	0	51	13
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	3534	0	31	29	0	0	51	12
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					68.7		8.2	8.2			8.2	8.2
Effective Green, g (s)					70.3		9.7	9.7			9.7	9.7
Actuated g/C Ratio					0.80		0.11	0.11			0.11	0.11
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3999		149	205			205	174
v/s Ratio Prot								0.02			c0.03	
v/s Ratio Perm					0.71		0.02					0.01
v/c Ratio					0.88		0.21	0.14			0.25	0.07
Uniform Delay, d1					6.1		35.7	35.4			35.8	35.1
Progression Factor					1.80		1.06	1.06			1.00	1.00
Incremental Delay, d2					0.3		0.2	0.1			0.2	0.1
Delay (s)					11.2		38.0	37.7			36.0	35.2
Level of Service					B		D	D			D	D
Approach Delay (s)		0.0			11.2			37.9			35.9	
Approach LOS		A			B			D			D	

Intersection Summary

HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.3%	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												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					5021		1770	1863			1863	1583
Flt Permitted					1.00		0.62	1.00			1.00	1.00
Satd. Flow (perm)					5021		1164	1863			1863	1583
Volume (vph)	0	0	0	0	3271	68	32	128	0	0	129	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.62	0.83	0.83
Adj. Flow (vph)	0	0	0	0	3443	72	39	154	0	0	155	65
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3512	0	39	154	0	0	155	65
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					48.9		28.0	28.0			28.0	28.0
Effective Green, g (s)					50.5		29.5	29.5			29.5	29.5
Actuated g/C Ratio					0.57		0.34	0.34			0.34	0.34
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					2881		390	625			625	531
v/s Ratio Prot					c0.70			0.08			c0.08	
v/s Ratio Perm							0.03					0.04
v/c Ratio					1.22		0.10	0.25			0.25	0.12
Uniform Delay, d1					18.8		20.1	21.2			21.2	20.3
Progression Factor					1.00		1.09	1.07			1.00	1.00
Incremental Delay, d2					102.0		0.4	0.8			0.9	0.5
Delay (s)					120.7		22.4	23.4			22.2	20.7
Level of Service					F		C	C			C	C
Approach Delay (s)		0.0			120.7			23.2			21.7	
Approach LOS		A			F			C			C	

Intersection Summary

HCM Average Control Delay	110.4	HCM Level of Service	F
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2822	2	0	0	0	0	2	4	6	1	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.50	0.78	0.78	0.78	0.78	0.55
Hourly flow rate (vph)	7	2971	2	0	0	0	0	3	5	8	1	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)					728							
pX, platoon unblocked												
vC, conflicting volume	0			2973			2987	2986	991	1006	2987	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2973			2987	2986	991	1006	2987	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	81	98	95	91	100
cM capacity (veh/h)	1622			116			6	14	245	163	14	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	750	1485	745	8	9
Volume Left	7	0	0	0	8
Volume Right	0	0	2	5	0
cSH	1622	1700	1700	41	63
Volume to Capacity	0.00	0.87	0.44	0.19	0.14
Queue Length 95th (ft)	0	0	0	15	12
Control Delay (s)	0.1	0.0	0.0	121.3	71.1
Lane LOS	A			F	F
Approach Delay (s)	0.0			121.3	71.1
Approach LOS				F	F

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	2819	5	0	0	0	0	4	1	2	6	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.75	0.78	0.78	0.78	0.78	0.42
Hourly flow rate (vph)	8	2967	5	0	0	0	0	5	1	3	8	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			2973			2991	2987	992	1009	2989	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2973			2991	2987	992	1009	2989	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	62	99	98	43	100
cM capacity (veh/h)	1622			116			3	14	245	136	14	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	750	1484	747	6	10
Volume Left	8	0	0	0	3
Volume Right	0	0	5	1	0
cSH	1622	1700	1700	17	17
Volume to Capacity	0.01	0.87	0.44	0.38	0.59
Queue Length 95th (ft)	0	0	0	26	39
Control Delay (s)	0.1	0.0	0.0	312.1	370.5
Lane LOS	A			F	F
Approach Delay (s)	0.0			312.1	370.5
Approach LOS				F	F

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5015						3391		1752	3505	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		5015						3391		1752	3505	
Volume (vph)	161	2635	26	0	0	0	0	262	72	106	454	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.80	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	169	2774	27	0	0	0	0	301	83	115	493	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	28	0	0	0	0
Lane Group Flow (vph)	0	2969	0	0	0	0	0	356	0	115	493	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	0%	3%	3%	3%	3%	0%
Turn Type	Perm									Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2											
Actuated Green, G (s)		47.9						17.0		7.7	28.9	
Effective Green, g (s)		49.5						18.6		7.9	30.5	
Actuated g/C Ratio		0.56						0.21		0.09	0.35	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		5.6						4.4		2.0	5.9	
Lane Grp Cap (vph)		2821						717		157	1215	
v/s Ratio Prot								c0.10		c0.07	0.14	
v/s Ratio Perm		0.59										
v/c Ratio		1.05						0.50		0.73	0.41	
Uniform Delay, d1		19.2						30.6		39.0	21.9	
Progression Factor		1.00						1.00		0.66	0.81	
Incremental Delay, d2		32.8						2.4		9.8	0.4	
Delay (s)		52.1						33.0		35.6	18.2	
Level of Service		D						C		D	B	
Approach Delay (s)		52.1			0.0			33.0			21.5	
Approach LOS		D			A			C			C	

Intersection Summary

HCM Average Control Delay	45.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	2769	22	0	0	0	0	7	7	27	15	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.63	0.78	0.78	0.78	0.78	0.79
Hourly flow rate (vph)	23	2915	23	0	0	0	0	9	9	35	19	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)		346			345							
pX, platoon unblocked				0.45			0.45	0.45	0.45	0.45	0.45	
vC, conflicting volume	0			2938			2982	2973	983	1022	2984	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2862			2961	2939	0	0	2965	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	98	0	0	100
cM capacity (veh/h)	1622			58			0	7	489	0	6	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	752	1457	752	18	54
Volume Left	23	0	0	0	35
Volume Right	0	0	23	9	0
cSH	1622	1700	1700	13	0
Volume to Capacity	0.01	0.86	0.44	1.39	Err
Queue Length 95th (ft)	1	0	0	73	Err
Control Delay (s)	0.4	0.0	0.0	795.4	Err
Lane LOS	A			F	F
Approach Delay (s)	0.1			795.4	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		5023						3307		1770	1863	
Flt Permitted		1.00						1.00		0.45	1.00	
Satd. Flow (perm)		5023						3307		847	1863	
Volume (vph)	96	2682	25	0	0	0	0	190	148	12	222	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.79	0.87	0.87	0.87	0.87	0.83
Adj. Flow (vph)	101	2823	26	0	0	0	0	218	170	14	255	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2949	0	0	0	0	0	387	0	14	255	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.3						27.0		27.0	27.0	
Effective Green, g (s)		51.8						28.2		28.2	28.2	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		2957						1060		271	597	
v/s Ratio Prot								0.12			c0.14	
v/s Ratio Perm		0.59								0.02		
v/c Ratio		1.00						0.37		0.05	0.43	
Uniform Delay, d1		18.0						23.0		20.7	23.5	
Progression Factor		0.39						1.00		1.12	1.10	
Incremental Delay, d2		7.6						1.0		0.3	1.7	
Delay (s)		14.6						24.0		23.3	27.7	
Level of Service		B						C		C	C	
Approach Delay (s)		14.6			0.0			24.0			27.5	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	16.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	2803	28	0	0	0	0	0	9	2	24	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.69	0.69	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	12	2951	29	0	0	0	0	0	12	3	31	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)		373			371							
pX, platoon unblocked				0.43			0.43	0.43	0.43	0.43	0.43	
vC, conflicting volume	0			2980			3004	2988	998	1007	3003	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2953			3009	2973	0	0	3007	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	100	98	99	0	100
cM capacity (veh/h)	1622			51			0	6	466	426	6	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	749	1475	767	12	33
Volume Left	12	0	0	0	3
Volume Right	0	0	29	12	0
cSH	1622	1700	1700	233	6
Volume to Capacity	0.01	0.87	0.45	0.05	5.46
Queue Length 95th (ft)	1	0	0	4	Err
Control Delay (s)	0.2	0.0	0.0	21.3	Err
Lane LOS	A			C	F
Approach Delay (s)	0.1			21.3	Err
Approach LOS				C	F

Intersection Summary			
Average Delay	109.9		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5007						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		5007						3539	1583	1770	3539	
Volume (vph)	207	2551	56	0	0	0	0	351	209	145	478	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.90	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	2685	59	0	0	0	0	382	227	158	520	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	21	0	0	0
Lane Group Flow (vph)	0	2960	0	0	0	0	0	382	206	158	520	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2								8			
Actuated Green, G (s)		46.2						17.1	17.1	8.9	30.6	
Effective Green, g (s)		47.8						18.7	18.7	9.5	32.2	
Actuated g/C Ratio		0.54						0.21	0.21	0.11	0.37	
Clearance Time (s)		5.6						5.6	5.6	4.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2720						752	336	191	1295	
v/s Ratio Prot								0.11		c0.09	0.15	
v/s Ratio Perm		0.59							c0.13			
v/c Ratio		1.09						0.51	0.61	0.83	0.40	
Uniform Delay, d1		20.1						30.6	31.4	38.4	20.7	
Progression Factor		0.34						1.00	1.00	1.29	0.95	
Incremental Delay, d2		42.1						2.4	8.1	18.1	0.7	
Delay (s)		49.0						33.0	39.5	67.7	20.3	
Level of Service		D						C	D	E	C	
Approach Delay (s)		49.0			0.0			35.4			31.3	
Approach LOS		D			A			D			C	

Intersection Summary

HCM Average Control Delay	44.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	54	2800	51	0	0	0	0	5	8	26	8	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.54	0.78	0.78	0.78	0.78	0.77
Hourly flow rate (vph)	57	2947	54	0	0	0	0	6	10	33	10	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)		377			348							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			3001			3093	3088	1009	1099	3115	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3002			3197	3186	0	0	3243	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			0	0	98	0	0	100
cM capacity (veh/h)	1622			53			0	5	511	0	4	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	794	1474	791	17	44
Volume Left	57	0	0	0	33
Volume Right	0	0	54	10	0
cSH	1622	1700	1700	12	0
Volume to Capacity	0.04	0.87	0.47	1.41	Err
Queue Length 95th (ft)	3	0	0	71	Err
Control Delay (s)	0.9	0.0	0.0	853.3	Err
Lane LOS	A			F	F
Approach Delay (s)	0.2			853.3	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						1.00	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4991						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.72	1.00	
Satd. Flow (perm)		4991						1863	1583	1338	3539	
Volume (vph)	108	2578	148	0	0	0	0	49	81	68	457	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	114	2714	156	0	0	0	0	59	98	74	497	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	2978	0	0	0	0	0	59	96	74	497	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		58.7						20.5	20.5	18.5	18.5	
Effective Green, g (s)		60.3						19.7	19.7	19.7	19.7	
Actuated g/C Ratio		0.69						0.22	0.22	0.22	0.22	
Clearance Time (s)		5.6						3.2	3.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3420						417	354	300	792	
v/s Ratio Prot								0.03			c0.14	
v/s Ratio Perm		0.60							0.06	0.06		
v/c Ratio		0.87						0.14	0.27	0.25	0.63	
Uniform Delay, d1		10.8						27.4	28.2	28.1	30.8	
Progression Factor		0.33						1.00	1.00	1.19	1.21	
Incremental Delay, d2		0.3						0.1	0.2	0.1	0.7	
Delay (s)		3.8						27.4	28.4	33.4	38.2	
Level of Service		A						C	C	C	D	
Approach Delay (s)		3.8			0.0			28.0			37.5	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.3%	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												
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		0.91						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		5013						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.72	1.00	
Satd. Flow (perm)		5013						1863	1583	1335	1863	
Volume (vph)	103	2564	60	0	0	0	0	48	42	28	116	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.66	0.78	0.78	0.83	0.83	0.73
Adj. Flow (vph)	108	2699	63	0	0	0	0	62	54	34	140	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	2868	0	0	0	0	0	62	52	34	140	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3236						491	417	352	491	
v/s Ratio Prot								0.03			c0.08	
v/s Ratio Perm		0.57							0.03	0.03		
v/c Ratio		0.89						0.13	0.12	0.10	0.29	
Uniform Delay, d1		12.9						24.7	24.7	24.5	25.8	
Progression Factor		0.58						1.00	1.00	1.38	1.39	
Incremental Delay, d2		2.2						0.5	0.6	0.5	1.4	
Delay (s)		9.7						25.2	25.3	34.2	37.4	
Level of Service		A						C	C	C	D	
Approach Delay (s)		9.7			0.0			25.2			36.8	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.2%	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												
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		0.97	*0.87	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1626	4836		3400	4678	1568	1626	1578		1665	1672	1429
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1626	4836		3400	4678	1568	1626	1578		1665	1672	1429
Volume (vph)	90	2590	40	340	2235	450	25	10	260	355	5	125
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	95	2726	42	358	2353	474	29	11	299	408	6	144
RTOR Reduction (vph)	0	0	0	0	0	158	0	0	0	0	0	53
Lane Group Flow (vph)	95	2768	0	358	2353	316	29	310	0	204	210	91
Heavy Vehicles (%)	11%	7%	8%	3%	6%	3%	11%	2%	3%	3%	2%	13%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	10.0	73.9		14.0	77.9	77.9	14.0	14.0		19.2	19.2	19.2
Effective Green, g (s)	10.2	76.2		14.2	80.2	80.2	14.2	14.2		19.4	19.4	19.4
Actuated g/C Ratio	0.07	0.54		0.10	0.57	0.57	0.10	0.10		0.14	0.14	0.14
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	118	2632		345	2680	898	165	160		231	232	198
v/s Ratio Prot	0.06	c0.57		c0.11	0.50		0.02	c0.20		0.12	c0.13	
v/s Ratio Perm						0.20						0.06
v/c Ratio	0.81	1.05		1.04	0.88	0.35	0.18	1.94		0.88	0.91	0.46
Uniform Delay, d1	63.9	31.9		62.9	25.7	16.0	57.5	62.9		59.2	59.4	55.5
Progression Factor	1.23	1.45		1.20	0.47	0.18	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	26.9	32.0		35.8	1.3	0.3	0.2	444.0		29.6	33.9	0.6
Delay (s)	105.4	78.3		111.2	13.3	3.1	57.7	506.9		88.7	93.3	56.1
Level of Service	F	E		F	B	A	E	F		F	F	E
Approach Delay (s)		79.2			22.8			468.4			82.0	
Approach LOS		E			C			F			F	

Intersection Summary

HCM Average Control Delay	72.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	1.00	1.00	1.00			
Frpb, ped/bikes		1.00	0.99		1.00	0.98	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			
Frt		0.96	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4450	1282		4940	1492	1570	1524			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4450	1282		4940	1492	1570	1524			
Volume (vph)	0	1680	1525	0	2495	1425	350	0	530	0	0
Peak-hour factor, PHF	0.93	0.95	0.95	0.90	0.95	0.95	0.92	0.90	0.92	0.92	0.92
Adj. Flow (vph)	0	1768	1605	0	2626	1500	380	0	576	0	0
RTOR Reduction (vph)	0	54	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2455	864	0	2626	1500	380	576	0	0	0
Confl. Peds. (#/hr)			2			2					
Heavy Vehicles (%)	2%	4%	7%	2%	5%	6%	15%	2%	6%	2%	2%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		108.5	140.0		108.5	140.0	23.0	23.0			
Effective Green, g (s)		108.9	140.0		108.9	140.0	23.1	23.1			
Actuated g/C Ratio		0.78	1.00		0.78	1.00	0.17	0.17			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		3461	1282		3843	1492	259	251			
v/s Ratio Prot		0.55			0.53		0.24	c0.38			
v/s Ratio Perm			0.67			c1.01					
v/c Ratio		0.71	0.67		0.68	1.01	1.47	2.29			
Uniform Delay, d1		7.7	0.0		7.4	70.0	58.5	58.5			
Progression Factor		0.48	1.00		2.66	1.00	1.00	1.00			
Incremental Delay, d2		0.1	0.3		0.1	8.3	230.2	595.1			
Delay (s)		3.8	0.3		19.7	78.3	288.6	653.6			
Level of Service		A	A		B	E	F	F			
Approach Delay (s)		2.9			41.0			508.5		0.0	
Approach LOS		A			D			F		A	

Intersection Summary

HCM Average Control Delay	78.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1625		1633	1648	1553	3213	3089		1399	3254	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	1625		1633	1648	1553	3213	3089		1399	3254	
Volume (vph)	150	110	60	350	70	105	365	425	235	100	550	185
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	172	126	69	402	80	121	392	457	253	109	598	201
RTOR Reduction (vph)	0	0	0	0	0	98	0	0	0	0	0	0
Lane Group Flow (vph)	172	195	0	238	244	23	392	710	0	109	799	0
Heavy Vehicles (%)	14%	10%	12%	5%	8%	4%	9%	6%	19%	29%	6%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	18.7	18.7		23.3	23.3	23.3	21.9	48.6		13.2	38.4	
Effective Green, g (s)	18.9	18.9		23.0	23.0	23.0	23.1	49.2		12.9	39.0	
Actuated g/C Ratio	0.16	0.16		0.19	0.19	0.19	0.19	0.41		0.11	0.32	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	249	256		313	316	298	619	1266		150	1058	
v/s Ratio Prot	0.11	c0.12		0.15	c0.15		c0.12	0.23		0.08	c0.25	
v/s Ratio Perm						0.01						
v/c Ratio	0.69	0.76		0.76	0.77	0.08	0.63	0.56		0.73	0.76	
Uniform Delay, d1	47.8	48.4		45.9	46.0	39.8	44.6	27.1		51.8	36.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.7	13.4		11.1	11.9	0.2	1.6	1.8		13.8	5.0	
Delay (s)	56.5	61.8		57.0	57.9	40.0	46.1	28.9		65.6	41.2	
Level of Service	E	E		E	E	D	D	C		E	D	
Approach Delay (s)		59.3			53.9			35.0			44.2	
Approach LOS		E			D			D			D	

Intersection Summary

HCM Average Control Delay	44.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.8%	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												
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	*0.90	*0.85			0.91	1.00	0.97		1.00	0.97		1.00
Frt	1.00	1.00			1.00	0.85	1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (prot)	2927	4704			5036	1538	3213		1568	3400		1509
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00	0.95		1.00
Satd. Flow (perm)	2927	4704			5036	1538	3213		1568	3400		1509
Volume (vph)	525	1505	0	0	2055	555	1415	0	850	505	0	450
Peak-hour factor, PHF	0.95	0.95	0.84	0.86	0.95	0.95	0.95	0.86	0.95	0.92	0.84	0.92
Adj. Flow (vph)	553	1584	0	0	2163	584	1489	0	895	549	0	489
RTOR Reduction (vph)	0	0	0	0	0	2	0	0	0	0	0	0
Lane Group Flow (vph)	553	1584	0	0	2163	582	1489	0	895	549	0	489
Heavy Vehicles (%)	11%	3%	2%	2%	3%	5%	9%	2%	3%	3%	2%	7%
Turn Type	Prot					pm+ov	Prot		Free	Prot		custom
Protected Phases	5	2			6	4	8			4		5 7
Permitted Phases						6			Free			
Actuated Green, G (s)	20.0	74.0			48.8	104.7	35.0		140.0	55.9		35.0
Effective Green, g (s)	21.2	74.9			49.7	106.8	36.9		140.0	57.1		37.4
Actuated g/C Ratio	0.15	0.54			0.36	0.76	0.26		1.00	0.41		0.27
Clearance Time (s)	5.2	4.9			4.9	5.2	5.9			5.2		
Vehicle Extension (s)	2.0	4.5			4.5	2.0	3.3			2.0		
Lane Grp Cap (vph)	443	2517			1788	1217	847		1568	1387		403
v/s Ratio Prot	c0.19	0.34			c0.43	0.20	c0.46			0.16		c0.32
v/s Ratio Perm						0.18			0.57			
v/c Ratio	1.25	0.63			1.21	0.48	1.76		0.57	0.40		1.21
Uniform Delay, d1	59.4	22.8			45.1	6.2	51.5		0.0	29.3		51.3
Progression Factor	0.96	0.97			1.03	1.14	1.00		1.00	1.00		1.00
Incremental Delay, d2	121.2	0.6			94.9	0.0	345.9		1.5	0.1		116.9
Delay (s)	178.3	22.8			141.3	7.1	397.5		1.5	29.3		168.2
Level of Service	F	C			F	A	F		A	C		F
Approach Delay (s)		63.0			112.8			248.8			94.8	
Approach LOS		E			F			F			F	

Intersection Summary

HCM Average Control Delay	136.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.9%	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												
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	0.95	1.00	0.97	0.95		0.95	0.95	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (prot)	1752	3471	1568	3433	3469		1665	1679	1583		1847	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00		0.97	1.00
Satd. Flow (perm)	1752	3471	1568	3433	3469		1665	1679	1583		1847	1524
Volume (vph)	35	2380	445	580	1985	10	585	25	690	20	15	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.78	0.78	0.78
Adj. Flow (vph)	37	2505	468	611	2089	11	629	27	742	26	19	51
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	30	0	0	49
Lane Group Flow (vph)	37	2505	368	611	2100	0	315	341	712	0	45	2
Heavy Vehicles (%)	3%	4%	3%	2%	4%	0%	3%	0%	2%	0%	0%	6%
Turn Type	Prot		Perm	Prot			Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		8	8	1	7	7	
Permitted Phases			2						8			7
Actuated Green, G (s)	4.8	79.2	79.2	20.5	97.4		14.1	14.1	34.6		4.8	4.8
Effective Green, g (s)	4.5	81.1	81.1	21.7	98.3		16.0	16.0	37.7		5.2	5.2
Actuated g/C Ratio	0.03	0.58	0.58	0.15	0.70		0.11	0.11	0.27		0.04	0.04
Clearance Time (s)	3.7	5.9	5.9	5.2	4.9		5.9	5.9	5.2		4.4	4.4
Vehicle Extension (s)	3.0	5.7	5.7	5.7	3.0		5.6	5.6	5.7		3.0	3.0
Lane Grp Cap (vph)	56	2011	908	532	2436		190	192	472		69	57
v/s Ratio Prot	0.02	c0.72		0.18	0.61		0.19	c0.20	c0.23		c0.02	
v/s Ratio Perm			0.23						0.22			0.00
v/c Ratio	0.66	1.25	0.41	1.15	0.86		1.66	1.78	1.51		0.65	0.03
Uniform Delay, d1	67.0	29.5	16.2	59.1	15.7		62.0	62.0	51.1		66.5	65.0
Progression Factor	0.90	1.02	0.87	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	21.6	114.2	1.1	86.9	4.3		318.3	369.5	239.7		20.0	0.2
Delay (s)	81.8	144.3	15.1	146.1	20.1		380.3	431.5	290.8		86.5	65.2
Level of Service	F	F	B	F	C		F	F	F		F	E
Approach Delay (s)		123.5			48.5			345.3			75.2	
Approach LOS		F			D			F			E	

Intersection Summary

HCM Average Control Delay	137.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.35		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	123.5%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1781		1770	1863	1583	1770	3413		1770	3443	
Flt Permitted	0.65	1.00		0.45	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1204	1781		833	1863	1583	1770	3413		1770	3443	
Volume (vph)	121	113	47	127	89	66	25	1113	256	54	862	124
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	139	130	54	146	102	76	27	1197	275	58	927	133
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	0	0
Lane Group Flow (vph)	139	184	0	146	102	14	27	1472	0	58	1060	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	19.3	19.3		19.3	19.3	19.3	4.3	68.2		7.0	70.9	
Effective Green, g (s)	19.9	19.9		19.9	19.9	19.9	4.3	69.1		7.0	71.8	
Actuated g/C Ratio	0.18	0.18		0.18	0.18	0.18	0.04	0.64		0.06	0.66	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	222	328		153	343	292	70	2184		115	2289	
v/s Ratio Prot		0.10			0.05		0.02	c0.43		c0.03	c0.31	
v/s Ratio Perm	0.12			c0.18		0.01						
v/c Ratio	0.63	0.56		0.95	0.30	0.05	0.39	0.67		0.50	0.46	
Uniform Delay, d1	40.6	40.1		43.6	38.0	36.3	50.6	12.3		48.8	8.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.12	0.38		1.00	1.00	
Incremental Delay, d2	4.7	1.8		58.7	0.4	0.0	1.0	1.4		1.3	0.7	
Delay (s)	45.3	41.9		102.3	38.4	36.3	57.8	6.0		50.1	9.4	
Level of Service	D	D		F	D	D	E	A		D	A	
Approach Delay (s)		43.3			66.7			7.0			11.6	
Approach LOS		D			E			A			B	

Intersection Summary

HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	70.7%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1636		1770	1863	1583	1770	3480		1770	3498	
Flt Permitted	0.75	1.00		0.40	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1389	1636		744	1863	1583	1770	3480		1770	3498	
Volume (vph)	30	29	124	62	15	28	31	1336	71	29	994	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	36	35	149	75	18	34	33	1437	76	31	1069	14
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	0
Lane Group Flow (vph)	36	184	0	75	18	5	33	1513	0	31	1083	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	16.3	16.3		16.3	16.3	16.3	7.2	74.2		4.5	71.5	
Effective Green, g (s)	16.9	16.9		16.9	16.9	16.9	7.2	74.6		4.5	71.9	
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.16	0.07	0.69		0.04	0.67	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	217	256		116	292	248	118	2404		74	2329	
v/s Ratio Prot		c0.11			0.01		0.02	c0.43		0.02	c0.31	
v/s Ratio Perm	0.03			0.10		0.00						
v/c Ratio	0.17	0.72		0.65	0.06	0.02	0.28	0.63		0.42	0.47	
Uniform Delay, d1	39.4	43.3		42.7	38.8	38.6	47.9	9.1		50.5	8.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.61	0.07		1.10	0.71	
Incremental Delay, d2	0.3	8.7		10.4	0.1	0.0	0.4	1.0		1.2	0.6	
Delay (s)	39.7	52.0		53.2	38.9	38.6	29.7	1.6		56.7	6.8	
Level of Service	D	D		D	D	D	C	A		E	A	
Approach Delay (s)		50.0			47.2			2.2			8.1	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	9.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.93		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3280		3477		1770	3505
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	3280		3477		1770	3505
Volume (vph)	167	136	1302	77	43	1137
Peak-hour factor, PHF	0.83	0.83	0.93	0.93	0.93	0.93
Adj. Flow (vph)	201	164	1400	83	46	1223
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	365	0	1483	0	46	1223
Heavy Vehicles (%)	2%	2%	3%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	15.6		71.7		7.2	82.9
Effective Green, g (s)	16.2		72.6		7.2	83.8
Actuated g/C Ratio	0.15		0.67		0.07	0.78
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	492		2337		118	2720
v/s Ratio Prot	c0.11		c0.43		0.03	c0.35
v/s Ratio Perm						
v/c Ratio	0.74		0.63		0.39	0.45
Uniform Delay, d1	43.9		10.1		48.3	4.2
Progression Factor	1.00		0.29		1.17	1.20
Incremental Delay, d2	5.2		0.4		0.7	0.5
Delay (s)	49.1		3.3		57.2	5.5
Level of Service	D		A		E	A
Approach Delay (s)	49.1		3.3			7.3
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	8.0
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												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	*0.83	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	*0.75	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)	2474	3505	1583	2891	3505	1583	3400	3505	1568	3433	2794	1333
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)	2474	3505	1583	2891	3505	1583	3400	3505	1568	3433	2794	1333
Volume (vph)	565	908	337	483	926	73	385	741	361	63	627	614
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	608	976	362	519	996	78	414	797	388	68	674	660
RTOR Reduction (vph)	0	0	62	0	0	10	0	0	31	0	0	7
Lane Group Flow (vph)	608	976	300	519	996	68	414	797	357	68	674	653
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	18.5	30.8	30.8	20.0	32.3	32.3	11.0	33.3	33.3	5.7	28.0	46.5
Effective Green, g (s)	18.5	32.1	32.1	20.0	33.6	33.6	11.0	34.2	34.2	5.7	28.9	47.4
Actuated g/C Ratio	0.17	0.30	0.30	0.19	0.31	0.31	0.10	0.32	0.32	0.05	0.27	0.44
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	424	1042	471	535	1090	492	346	1110	497	181	748	585
v/s Ratio Prot	c0.25	0.28		0.18	c0.28		c0.12	0.23		0.02	0.24	c0.19
v/s Ratio Perm			0.19			0.04			0.23			0.30
v/c Ratio	1.43	0.94	0.64	0.97	0.91	0.14	1.20	0.72	0.72	0.38	0.90	1.12
Uniform Delay, d1	44.8	37.0	32.9	43.7	35.8	26.8	48.5	32.6	32.6	49.4	38.2	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.74	0.71	0.75
Incremental Delay, d2	208.4	14.9	2.5	31.1	11.5	0.1	113.2	4.0	8.6	0.4	14.6	71.6
Delay (s)	253.2	51.9	35.4	74.9	47.3	26.9	161.7	36.6	41.2	36.9	41.8	94.3
Level of Service	F	D	D	E	D	C	F	D	D	D	D	F
Approach Delay (s)		111.7			55.3			70.1			66.3	
Approach LOS		F			E			E			E	

Intersection Summary

HCM Average Control Delay	78.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3090	2564	17	0	11
Peak Hour Factor	0.93	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3253	2699	18	0	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.43	
vC, conflicting volume	2717				4334	1358
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2717				7467	1358
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	90
cM capacity (veh/h)	147				0	139

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1626	1626	1799	918	14
Volume Left	0	0	0	0	0
Volume Right	0	0	0	18	14
cSH	1700	1700	1700	1700	139
Volume to Capacity	0.96	0.96	1.06	0.54	0.10
Queue Length 95th (ft)	0	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	0.0	33.9
Lane LOS					D
Approach Delay (s)	0.0		0.0		33.9
Approach LOS					D

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	29	3061	2535	14	3	46
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	31	3222	2668	15	4	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.43	
vC, conflicting volume	2683				4348	1342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2683				7449	1342
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	80				0	59
cM capacity (veh/h)	152				0	142

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	31	1611	1611	1779	904	63
Volume Left	31	0	0	0	0	4
Volume Right	0	0	0	0	15	59
cSH	152	1700	1700	1700	1700	0
Volume to Capacity	0.20	0.95	0.95	1.05	0.53	2100.30
Queue Length 95th (ft)	18	0	0	0	0	Err
Control Delay (s)	34.6	0.0	0.0	0.0	0.0	Err
Lane LOS	D					F
Approach Delay (s)	0.3			0.0		Err
Approach LOS						F

Intersection Summary			
Average Delay	104.9		
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	34	3007	23	10	2482	6	0	7	6	4	5	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	36	3165	24	11	2613	6	0	9	8	5	6	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1071										
pX, platoon unblocked				0.44			0.44	0.44	0.44	0.44	0.44	
vC, conflicting volume	2619			3189			4580	5889	1595	4296	5898	1309
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2619			4733			7928	10937	1069	7275	10957	1309
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	78			0			0	0	92	0	0	43
cM capacity (veh/h)	161			9			0	0	95	0	0	150

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	36	2110	1079	11	1742	877	17	97
Volume Left	36	0	0	11	0	0	0	5
Volume Right	0	0	24	0	0	6	8	86
cSH	161	1700	1700	9	1700	1700	0	0
Volume to Capacity	0.22	1.24	0.63	1.12	1.02	0.52	Err	Err
Queue Length 95th (ft)	20	0	0	51	0	0	Err	Err
Control Delay (s)	33.7	0.0	0.0	853.1	0.0	0.0	Err	Err
Lane LOS	D			F			F	F
Approach Delay (s)	0.4			3.4			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2998	13	9	2486	8	3	2	6	0	5	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	6	3156	14	9	2617	8	4	3	8	0	6	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2625			3169			4506	5819	1585	4232	5822	1313
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2625			3169			4506	5819	1585	4232	5822	1313
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			90			0	0	92	0	0	92
cM capacity (veh/h)	160			96			0	0	97	0	0	149

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	6	2104	1066	9	1745	881	14	18
Volume Left	6	0	0	9	0	0	4	0
Volume Right	0	0	14	0	0	8	8	12
cSH	160	1700	1700	96	1700	1700	0	0
Volume to Capacity	0.04	1.24	0.63	0.10	1.03	0.52	1177.00	49.84
Queue Length 95th (ft)	3	0	0	8	0	0	Err	Err
Control Delay (s)	28.4	0.0	0.0	46.3	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.1			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	55.0		
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	2999	2	9	2492	18	2	1	2	8	1	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	3	3157	2	9	2623	19	3	1	3	10	1	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2642			3159			4495	5825	1579	4237	5817	1321
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2642			3159			4495	5825	1579	4237	5817	1321
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			90			0	0	97	0	0	92
cM capacity (veh/h)	157			97			0	0	98	0	0	147

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	3	2105	1054	9	1749	893	6	23
Volume Left	3	0	0	9	0	0	3	10
Volume Right	0	0	2	0	0	19	3	12
cSH	157	1700	1700	97	1700	1700	0	0
Volume to Capacity	0.02	1.24	0.62	0.10	1.03	0.53	529.07	Err
Queue Length 95th (ft)	2	0	0	8	0	0	Err	Err
Control Delay (s)	28.3	0.0	0.0	45.9	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.0			0.2			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	50.5		
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	16	2987	6	6	2498	10	2	3	6	0	0	19
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	17	3144	6	6	2629	11	3	4	8	0	0	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2640			3151			4508	5834	1575	4255	5832	1320
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2640			3151			4508	5834	1575	4255	5832	1320
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			94			0	0	92	0	100	83
cM capacity (veh/h)	158			98			0	0	99	0	0	147

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	17	2096	1054	6	1753	887	14	24
Volume Left	17	0	0	6	0	0	3	0
Volume Right	0	0	6	0	0	11	8	24
cSH	158	1700	1700	98	1700	1700	0	74
Volume to Capacity	0.11	1.23	0.62	0.06	1.03	0.52	40.69	0.33
Queue Length 95th (ft)	9	0	0	5	0	0	Err	31
Control Delay (s)	30.5	0.0	0.0	44.2	0.0	0.0	Err	76.4
Lane LOS	D			E			F	F
Approach Delay (s)	0.2			0.1			Err	76.4
Approach LOS							F	F

Intersection Summary			
Average Delay	24.5		
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	18	2970	5	15	2483	18	9	18	3	2	9	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	19	3126	5	16	2614	19	12	23	4	3	12	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2633			3132			4511	5831	1566	4267	5824	1316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2633			3132			4511	5831	1566	4267	5824	1316
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			84			0	0	96	0	0	81
cM capacity (veh/h)	159			100			0	0	100	0	0	148

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	19	2084	1047	16	1742	890	38	42
Volume Left	19	0	0	16	0	0	12	3
Volume Right	0	0	5	0	0	19	4	28
cSH	159	1700	1700	100	1700	1700	0	0
Volume to Capacity	0.12	1.23	0.62	0.16	1.02	0.52	Err	3137.28
Queue Length 95th (ft)	10	0	0	13	0	0	Err	Err
Control Delay (s)	30.7	0.0	0.0	47.7	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.2			0.3			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	137.6		
Intersection Capacity Utilization	98.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	2963	5	1	2497	2	8	7	8	8	2	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	7	3119	5	1	2628	2	10	9	10	10	3	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2631			3124			4454	5769	1562	4210	5771	1315
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2631			3124			4454	5769	1562	4210	5771	1315
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			0	0	90	0	0	90
cM capacity (veh/h)	159			101			0	0	101	0	0	148

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	7	2079	1045	1	1752	878	29	27
Volume Left	7	0	0	1	0	0	10	10
Volume Right	0	0	5	0	0	2	10	14
cSH	159	1700	1700	101	1700	1700	0	0
Volume to Capacity	0.05	1.22	0.61	0.01	1.03	0.52	7265.00	7763.50
Queue Length 95th (ft)	4	0	0	1	0	0	Err	Err
Control Delay (s)	28.7	0.0	0.0	41.2	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.1			0.0			Err	9999.0
Approach LOS							F	F

Intersection Summary			
Average Delay	97.0		
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	29	2943	7	15	2473	13	6	5	3	9	2	21
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.70	0.78	0.78
Hourly flow rate (vph)	31	3098	7	16	2603	14	8	6	4	13	3	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									2			2
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2617			3105			4497	5811	1553	4255	5808	1308
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2617			3105			4497	5811	1553	4255	5808	1308
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			85			0	0	96	0	0	82
cM capacity (veh/h)	161			102			0	0	102	0	0	150

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	31	2065	1040	16	1735	881	18	42
Volume Left	31	0	0	16	0	0	8	13
Volume Right	0	0	7	0	0	14	4	27
cSH	161	1700	1700	102	1700	1700	0	0
Volume to Capacity	0.19	1.21	0.61	0.15	1.02	0.52	5976.87	Err
Queue Length 95th (ft)	17	0	0	13	0	0	Err	Err
Control Delay (s)	32.5	0.0	0.0	46.4	0.0	0.0	Err	Err
Lane LOS	D			E			F	F
Approach Delay (s)	0.3			0.3			Err	Err
Approach LOS							F	F

Intersection Summary			
Average Delay	103.7		
Intersection Capacity Utilization	98.2%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	1	2493	7	2	3	0	0	1	6
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.44	0.78	0.78
Hourly flow rate (vph)	0	0	0	1	2624	7	3	4	0	0	1	8
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)					1079							
pX, platoon unblocked	0.45						0.45	0.45		0.45	0.45	0.45
vC, conflicting volume	2632			0			1315	2634	0	2632	2630	1316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	3393			0			489	3397	0	3394	3389	491
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	0	100	0	61	97
cM capacity (veh/h)	35			1622			142	3	1084	0	3	237

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	1313	1319	6	9
Volume Left	1	0	3	0
Volume Right	0	7	0	8
cSH	1622	1700	5	23
Volume to Capacity	0.00	0.78	1.19	0.39
Queue Length 95th (ft)	0	0	40	29
Control Delay (s)	0.0	0.0	1313.4	218.1
Lane LOS	A		F	F
Approach Delay (s)	0.0		1313.4	218.1
Approach LOS			F	F

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	11	2491	14	7	6	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.43	0.78	0.78
Hourly flow rate (vph)	0	0	0	12	2622	15	9	8	0	0	10	4
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)					724							
pX, platoon unblocked	0.51						0.51	0.51		0.51	0.51	0.51
vC, conflicting volume	2637			0			904	2660	0	2656	2653	881
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2287			0			0	2332	0	2325	2318	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	58	100	100	45	99
cM capacity (veh/h)	111			1622			292	18	1084	7	19	552

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	667	1311	670	17	14
Volume Left	12	0	0	9	0
Volume Right	0	0	15	0	4
cSH	1622	1700	1700	37	26
Volume to Capacity	0.01	0.77	0.39	0.45	0.55
Queue Length 95th (ft)	1	0	0	38	42
Control Delay (s)	0.2	0.0	0.0	164.9	246.1
Lane LOS	A			F	F
Approach Delay (s)	0.1			164.9	246.1
Approach LOS				F	F

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	12	2491	8	4	3	0	0	5	21
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.92	0.78	0.78
Hourly flow rate (vph)	0	0	0	13	2622	8	5	4	0	0	6	27
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)					361							
pX, platoon unblocked	0.51						0.51	0.51		0.51	0.51	0.51
vC, conflicting volume	2631			0			903	2656	0	2654	2652	878
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2271			0			0	2321	0	2317	2313	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	79	100	100	66	95
cM capacity (veh/h)	112			1622			361	19	1084	9	19	550

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	668	1311	664	9	33
Volume Left	13	0	0	5	0
Volume Right	0	0	8	0	27
cSH	1622	1700	1700	41	98
Volume to Capacity	0.01	0.77	0.39	0.22	0.34
Queue Length 95th (ft)	1	0	0	18	33
Control Delay (s)	0.2	0.0	0.0	117.1	62.3
Lane LOS	A			F	F
Approach Delay (s)	0.1			117.1	62.3
Approach LOS				F	F

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.95	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					4960		1736	3471			3309	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					4960		1736	3471			3309	
Volume (vph)	0	0	0	205	2247	24	88	428	0	0	390	176
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.76	0.92	0.92
Adj. Flow (vph)	0	0	0	216	2365	25	96	465	0	0	424	191
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	36	0
Lane Group Flow (vph)	0	0	0	0	2605	0	96	465	0	0	579	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	4%	4%	0%	0%	4%	4%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					48.4		7.2	30.4			19.5	
Effective Green, g (s)					49.0		6.9	31.0			20.1	
Actuated g/C Ratio					0.56		0.08	0.35			0.23	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					2762		136	1223			756	
v/s Ratio Prot							c0.06	0.13			c0.17	
v/s Ratio Perm					0.53							
v/c Ratio					0.94		0.71	0.38			0.77	
Uniform Delay, d1					18.2		39.6	21.3			31.7	
Progression Factor					0.30		1.12	1.19			1.00	
Incremental Delay, d2					3.8		5.6	0.4			7.3	
Delay (s)					9.2		50.0	25.7			39.0	
Level of Service					A		D	C			D	
Approach Delay (s)		0.0			9.2			29.8			39.0	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	17.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	21	2416	46	9	18	0	0	19	51
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.80	0.78	0.78
Hourly flow rate (vph)	0	0	0	22	2543	48	12	23	0	0	24	65
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)		346			345							
pX, platoon unblocked	0.46						0.46	0.46		0.46	0.46	0.46
vC, conflicting volume	2592			0			904	2636	0	2623	2612	872
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2119			0			0	2214	0	2187	2162	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			0	0	100	0	0	87
cM capacity (veh/h)	118			1622			0	20	1084	0	21	503

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	658	1272	684	35	90
Volume Left	22	0	0	12	0
Volume Right	0	0	48	0	65
cSH	1622	1700	1700	0	75
Volume to Capacity	0.01	0.75	0.40	Err	1.20
Queue Length 95th (ft)	1	0	0	Err	170
Control Delay (s)	0.4	0.0	0.0	Err	266.1
Lane LOS	A			F	F
Approach Delay (s)	0.1			Err	266.1
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.91		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					4955		1770	1863			3411	
Flt Permitted					0.99		0.48	1.00			1.00	
Satd. Flow (perm)					4955		889	1863			3411	
Volume (vph)	0	0	0	322	2269	55	137	203	0	0	244	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.74	0.87	0.87
Adj. Flow (vph)	0	0	0	339	2388	58	157	233	0	0	280	89
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	0	2782	0	157	233	0	0	367	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					48.8		28.0	28.0			28.0	
Effective Green, g (s)					50.4		29.6	29.6			29.6	
Actuated g/C Ratio					0.57		0.34	0.34			0.34	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					2838		299	627			1147	
v/s Ratio Prot								0.13			0.11	
v/s Ratio Perm					0.56		c0.18					
v/c Ratio					0.98		0.53	0.37			0.32	
Uniform Delay, d1					18.3		23.5	22.1			21.7	
Progression Factor					0.43		0.90	0.87			1.00	
Incremental Delay, d2					6.2		5.0	1.3			0.7	
Delay (s)					14.0		26.3	20.6			22.5	
Level of Service					B		C	C			C	
Approach Delay (s)		0.0			14.0			22.9			22.5	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	137.4%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	53	2546	27	11	10	0	0	12	89
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.72	0.83	0.83
Hourly flow rate (vph)	0	0	0	56	2680	28	14	13	0	0	14	107
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)		373			371							
pX, platoon unblocked	0.50						0.50	0.50		0.50	0.50	0.50
vC, conflicting volume	2708			0			1012	2820	0	2812	2806	908
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2414			0			0	2638	0	2623	2610	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			0	0	100	0	0	80
cM capacity (veh/h)	97			1622			0	11	1084	0	12	540

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	726	1340	698	27	122
Volume Left	56	0	0	14	0
Volume Right	0	0	28	0	107
cSH	1622	1700	1700	0	91
Volume to Capacity	0.03	0.79	0.41	Err	1.34
Queue Length 95th (ft)	3	0	0	Err	224
Control Delay (s)	0.9	0.0	0.0	Err	294.0
Lane LOS	A			F	F
Approach Delay (s)	0.2			Err	294.0
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4954		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					4954		1770	3539			3539	1583
Volume (vph)	0	0	0	239	2204	72	238	534	0	0	672	184
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.91	0.91	0.92	0.92
Adj. Flow (vph)	0	0	0	252	2320	76	259	580	0	0	730	200
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	0	0	0	2644	0	259	580	0	0	730	195
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					48.6		8.0	30.2			18.0	18.0
Effective Green, g (s)					49.2		8.2	30.8			18.6	18.6
Actuated g/C Ratio					0.56		0.09	0.35			0.21	0.21
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2770		165	1239			748	335
v/s Ratio Prot							c0.15	0.16			c0.21	
v/s Ratio Perm					0.53							0.12
v/c Ratio					0.95		1.57	0.47			0.98	0.58
Uniform Delay, d1					18.3		39.9	22.2			34.5	31.2
Progression Factor					0.45		1.29	0.62			1.00	1.00
Incremental Delay, d2					7.2		278.5	1.0			27.5	7.2
Delay (s)					15.5		330.0	14.9			62.0	38.4
Level of Service					B		F	B			E	D
Approach Delay (s)		0.0			15.5			112.2			56.9	
Approach LOS		A			B			F			E	

Intersection Summary

HCM Average Control Delay	42.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	42	2436	26	48	46	0	0	31	31
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.75	0.80	0.78	0.78
Hourly flow rate (vph)	0	0	0	44	2564	27	62	59	0	0	40	40
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)		381			357							
pX, platoon unblocked	0.69						0.69	0.69		0.69	0.69	0.69
vC, conflicting volume	2592			0			963	2680	0	2696	2666	868
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2411			0			62	2538	0	2561	2519	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			0	0	100	0	0	95
cM capacity (veh/h)	135			1622			0	18	1084	0	19	752

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	685	1282	668	62	59	79
Volume Left	44	0	0	62	0	0
Volume Right	0	0	27	0	0	40
cSH	1622	1700	1700	0	18	36
Volume to Capacity	0.03	0.75	0.39	Err	3.26	2.18
Queue Length 95th (ft)	2	0	0	Err	Err	219
Control Delay (s)	0.8	0.0	0.0	Err	Err	777.9
Lane LOS	A			F	F	F
Approach Delay (s)	0.2			Err		777.9
Approach LOS				F		F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4967		1770	1863			1863	1583
Flt Permitted					1.00		0.72	1.00			1.00	1.00
Satd. Flow (perm)					4967		1340	1863			1863	1583
Volume (vph)	0	0	0	266	2425	23	62	74	0	0	45	17
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.73	0.78	0.78
Adj. Flow (vph)	0	0	0	280	2553	24	75	89	0	0	58	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	0	0	0	0	2857	0	75	89	0	0	58	20
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					67.0		9.9	9.9			9.9	9.9
Effective Green, g (s)					68.6		11.4	11.4			11.4	11.4
Actuated g/C Ratio					0.78		0.13	0.13			0.13	0.13
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3872		174	241			241	205
v/s Ratio Prot								0.05			0.03	
v/s Ratio Perm					0.58		c0.06					0.01
v/c Ratio					0.74		0.43	0.37			0.24	0.10
Uniform Delay, d1					5.0		35.3	35.0			34.4	33.8
Progression Factor					1.46		1.43	1.44			1.00	1.00
Incremental Delay, d2					0.5		0.5	0.3			0.2	0.1
Delay (s)					7.9		51.1	50.6			34.6	33.8
Level of Service					A		D	D			C	C
Approach Delay (s)		0.0			7.9			50.8			34.4	
Approach LOS		A			A			D			C	

Intersection Summary

HCM Average Control Delay	10.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.7%	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												
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					0.91		1.00	1.00			1.00	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					4977		1770	1863			1863	1583
Flt Permitted					1.00		0.57	1.00			1.00	1.00
Satd. Flow (perm)					4977		1066	1863			1863	1583
Volume (vph)	0	0	0	0	2543	40	82	136	0	0	167	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	2677	42	94	156	0	0	192	102
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2717	0	94	156	0	0	192	101
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6			8					4
Actuated Green, G (s)					48.9		28.0	28.0			28.0	28.0
Effective Green, g (s)					50.5		29.5	29.5			29.5	29.5
Actuated g/C Ratio					0.57		0.34	0.34			0.34	0.34
Clearance Time (s)					5.6		5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0		2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					2856		357	625			625	531
v/s Ratio Prot					c0.55			0.08			c0.10	
v/s Ratio Perm							0.09					0.06
v/c Ratio					0.95		0.26	0.25			0.31	0.19
Uniform Delay, d1					17.6		21.3	21.2			21.7	20.8
Progression Factor					1.00		1.12	1.12			1.00	1.00
Incremental Delay, d2					8.8		1.5	0.8			1.3	0.8
Delay (s)					26.4		25.3	24.5			22.9	21.6
Level of Service					C		C	C			C	C
Approach Delay (s)		0.0			26.4			24.8			22.5	
Approach LOS		A			C			C			C	

Intersection Summary

HCM Average Control Delay	25.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	2946	3	0	0	0	0	2	4	23	4	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.42	0.78	0.78	0.78	0.78	0.71
Hourly flow rate (vph)	6	3101	3	0	0	0	0	3	5	29	5	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)					728							
pX, platoon unblocked												
vC, conflicting volume	0			3104			3118	3115	1035	1048	3117	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3104			3118	3115	1035	1048	3117	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	77	98	80	54	100
cM capacity (veh/h)	1622			103			3	11	229	146	11	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	782	1551	778	8	35
Volume Left	6	0	0	0	29
Volume Right	0	0	3	5	0
cSH	1622	1700	1700	33	52
Volume to Capacity	0.00	0.91	0.46	0.23	0.66
Queue Length 95th (ft)	0	0	0	18	67
Control Delay (s)	0.1	0.0	0.0	149.4	160.2
Lane LOS	A			F	F
Approach Delay (s)	0.0			149.4	160.2
Approach LOS				F	F

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	14	2952	7	0	0	0	0	5	7	5	3	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.50	0.78	0.78	0.78	0.78	0.44
Hourly flow rate (vph)	15	3107	7	0	0	0	0	6	9	6	4	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			3115			3142	3141	1039	1068	3144	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3115			3142	3141	1039	1068	3144	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	40	96	93	64	100
cM capacity (veh/h)	1622			102			3	11	227	88	11	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	792	1554	784	15	10
Volume Left	15	0	0	0	6
Volume Right	0	0	7	9	0
cSH	1622	1700	1700	26	24
Volume to Capacity	0.01	0.91	0.46	0.60	0.44
Queue Length 95th (ft)	1	0	0	46	32
Control Delay (s)	0.3	0.0	0.0	248.8	245.5
Lane LOS	A			F	F
Approach Delay (s)	0.1			248.8	245.5
Approach LOS				F	F

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4962						3336		1736	3471	
Flt Permitted		1.00						1.00		0.95	1.00	
Satd. Flow (perm)		4962						3336		1736	3471	
Volume (vph)	144	2768	52	0	0	0	0	413	145	137	394	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.80	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	2914	55	0	0	0	0	449	158	149	428	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	3119	0	0	0	0	0	578	0	149	428	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	0%	4%	4%	4%	4%	0%
Turn Type	Perm									Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2											
Actuated Green, G (s)		45.6						17.5		9.5	31.2	
Effective Green, g (s)		47.2						19.1		9.7	32.8	
Actuated g/C Ratio		0.54						0.22		0.11	0.37	
Clearance Time (s)		5.6						5.6		4.2	5.6	
Vehicle Extension (s)		5.6						4.4		2.0	5.9	
Lane Grp Cap (vph)		2661						724		191	1294	
v/s Ratio Prot								c0.17		c0.09	0.12	
v/s Ratio Perm		0.63										
v/c Ratio		1.17						0.80		0.78	0.33	
Uniform Delay, d1		20.4						32.6		38.1	19.7	
Progression Factor		1.00						1.00		0.78	1.03	
Incremental Delay, d2		81.8						9.0		9.7	0.4	
Delay (s)		102.2						41.6		39.6	20.7	
Level of Service		F						D		D	C	
Approach Delay (s)		102.2			0.0			41.6			25.6	
Approach LOS		F			A			D			C	

Intersection Summary

HCM Average Control Delay	83.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	3017	25	0	0	0	0	9	33	35	13	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.59	0.78	0.78	0.78	0.78	0.83
Hourly flow rate (vph)	8	3176	26	0	0	0	0	12	42	45	17	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)		346			345							
pX, platoon unblocked				0.48			0.48	0.48	0.48	0.48	0.48	
vC, conflicting volume	0			3202			3214	3206	1072	1081	3219	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3424			3449	3432	0	0	3459	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	92	0	0	100
cM capacity (veh/h)	1622			36			0	3	517	0	3	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	802	1588	820	54	62
Volume Left	8	0	0	0	45
Volume Right	0	0	26	42	0
cSH	1622	1700	1700	15	0
Volume to Capacity	0.01	0.93	0.48	3.60	Err
Queue Length 95th (ft)	0	0	0	Err	Err
Control Delay (s)	0.1	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.0			9999.0	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.91						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		4971						3283		1770	1863	
Flt Permitted		1.00						1.00		0.32	1.00	
Satd. Flow (perm)		4971						3283		600	1863	
Volume (vph)	81	2944	60	0	0	0	0	266	248	51	501	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.92	0.92	0.92	0.92	0.93
Adj. Flow (vph)	85	3099	63	0	0	0	0	289	270	55	545	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	3245	0	0	0	0	0	558	0	55	545	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.3						27.0		27.0	27.0	
Effective Green, g (s)		51.8						28.2		28.2	28.2	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		2926						1052		192	597	
v/s Ratio Prot								0.17			c0.29	
v/s Ratio Perm		0.65								0.09		
v/c Ratio		1.11						0.53		0.29	0.91	
Uniform Delay, d1		18.1						24.5		22.4	28.7	
Progression Factor		0.37						1.00		1.16	1.14	
Incremental Delay, d2		49.5						1.9		2.7	16.1	
Delay (s)		56.2						26.4		28.7	48.9	
Level of Service		E						C		C	D	
Approach Delay (s)		56.2			0.0			26.4			47.1	
Approach LOS		E			A			C			D	

Intersection Summary			
HCM Average Control Delay	51.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	137.4%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	3205	28	0	0	0	0	13	50	18	33	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.69	0.78	0.78	0.78	0.78	0.77
Hourly flow rate (vph)	11	3374	29	0	0	0	0	17	64	23	42	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)		373			371							
pX, platoon unblocked				0.43			0.43	0.43	0.43	0.43	0.43	
vC, conflicting volume	0			3403			3431	3409	1139	1154	3424	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3948			4013	3963	0	0	3998	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	86	0	0	100
cM capacity (veh/h)	1622			20			0	1	461	0	1	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	854	1687	873	81	65
Volume Left	11	0	0	0	23
Volume Right	0	0	29	64	0
cSH	1622	1700	1700	6	0
Volume to Capacity	0.01	0.99	0.51	13.30	Err
Queue Length 95th (ft)	0	0	0	Err	Err
Control Delay (s)	0.2	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.0			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4958						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (perm)		4958						3539	1583	1770	3539	
Volume (vph)	205	2969	99	0	0	0	0	385	359	131	731	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.92	0.92	0.92	0.92	0.90
Adj. Flow (vph)	216	3125	104	0	0	0	0	418	390	142	795	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	26	0	0	0
Lane Group Flow (vph)	0	3441	0	0	0	0	0	418	364	142	795	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Prot		
Protected Phases		2						8		7	4	
Permitted Phases	2								8			
Actuated Green, G (s)		46.2						17.4	17.4	8.6	30.6	
Effective Green, g (s)		47.8						19.0	19.0	9.2	32.2	
Actuated g/C Ratio		0.54						0.22	0.22	0.10	0.37	
Clearance Time (s)		5.6						5.6	5.6	4.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	2.0	3.9	
Lane Grp Cap (vph)		2693						764	342	185	1295	
v/s Ratio Prot								0.12		c0.08	0.22	
v/s Ratio Perm		0.69							c0.23			
v/c Ratio		1.28						0.55	1.06	0.77	0.61	
Uniform Delay, d1		20.1						30.7	34.5	38.4	22.8	
Progression Factor		0.46						1.00	1.00	1.26	1.30	
Incremental Delay, d2		125.3						2.8	66.8	4.9	0.6	
Delay (s)		134.6						33.5	101.3	53.4	30.2	
Level of Service		F						C	F	D	C	
Approach Delay (s)		134.6			0.0			66.2			33.7	
Approach LOS		F			A			E			C	

Intersection Summary

HCM Average Control Delay	105.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	103.2%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	74	3359	26	0	0	0	0	11	16	63	39	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.75	0.78	0.78	0.83	0.83	0.83
Hourly flow rate (vph)	78	3536	27	0	0	0	0	14	21	76	47	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)		377			348							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			3563			3729	3705	1192	1341	3719	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			4196			4548	4498	0	0	4527	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			0	0	96	0	0	100
cM capacity (veh/h)	1622			17			0	1	511	0	1	1084

Direction, Lane #	EB 1	EB 2	EB 3	NB 1	SB 1
Volume Total	962	1768	911	35	123
Volume Left	78	0	0	0	76
Volume Right	0	0	27	21	0
cSH	1622	1700	1700	1	0
Volume to Capacity	0.05	1.04	0.54	24.61	Err
Queue Length 95th (ft)	4	0	0	Err	Err
Control Delay (s)	1.3	0.0	0.0	Err	Err
Lane LOS	A			F	F
Approach Delay (s)	0.3			Err	Err
Approach LOS				F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.91						1.00	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4971						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.55	1.00	
Satd. Flow (perm)		4971						1863	1583	1032	3539	
Volume (vph)	97	3275	66	0	0	0	0	146	194	103	144	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.79	0.87	0.87	0.87	0.87	0.93
Adj. Flow (vph)	102	3447	69	0	0	0	0	168	223	118	166	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3616	0	0	0	0	0	168	222	118	166	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		58.3						18.9	18.9	18.9	18.9	
Effective Green, g (s)		59.9						20.1	20.1	20.1	20.1	
Actuated g/C Ratio		0.68						0.23	0.23	0.23	0.23	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3384						426	362	236	808	
v/s Ratio Prot								0.09			0.05	
v/s Ratio Perm		0.73							c0.14	0.11		
v/c Ratio		1.07						0.39	0.61	0.50	0.21	
Uniform Delay, d1		14.1						28.8	30.5	29.6	27.5	
Progression Factor		0.54						1.00	1.00	1.27	1.28	
Incremental Delay, d2		31.6						0.2	2.2	0.5	0.0	
Delay (s)		39.2						29.0	32.6	38.1	35.3	
Level of Service		D						C	C	D	D	
Approach Delay (s)		39.2			0.0			31.1			36.5	
Approach LOS		D			A			C			D	

Intersection Summary			
HCM Average Control Delay	38.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	106.7%	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												
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		0.91						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		4974						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.62	1.00	
Satd. Flow (perm)		4974						1863	1583	1149	1863	
Volume (vph)	83	3435	54	0	0	0	0	126	153	90	131	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.73	0.87	0.87	0.87	0.87	0.68
Adj. Flow (vph)	87	3616	57	0	0	0	0	145	176	103	151	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3758	0	0	0	0	0	145	176	103	151	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3210						491	417	303	491	
v/s Ratio Prot								0.08			0.08	
v/s Ratio Perm		0.76							c0.11	0.09		
v/c Ratio		1.17						0.30	0.42	0.34	0.31	
Uniform Delay, d1		15.6						25.9	26.8	26.2	26.0	
Progression Factor		0.61						1.00	1.00	1.32	1.32	
Incremental Delay, d2		77.2						1.5	3.1	3.0	1.6	
Delay (s)		86.8						27.4	30.0	37.5	35.9	
Level of Service		F						C	C	D	D	
Approach Delay (s)		86.8			0.0			28.8			36.5	
Approach LOS		F			A			C			D	

Intersection Summary			
HCM Average Control Delay	79.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Forecast Year 2015 With Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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		0.97	*0.84	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (prot)	1719	4926		3367	4560	1538	1626	1518		1603	1637	1495
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00
Satd. Flow (perm)	1719	4926		3367	4560	1538	1626	1518		1603	1637	1495
Volume (vph)	85	2530	45	225	2065	130	20	5	205	85	10	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.83	0.83	0.83
Adj. Flow (vph)	89	2663	47	237	2174	137	23	6	236	102	12	48
RTOR Reduction (vph)	0	0	0	0	0	33	0	68	0	0	0	43
Lane Group Flow (vph)	89	2710	0	237	2174	104	23	175	0	54	60	5
Heavy Vehicles (%)	5%	5%	6%	4%	5%	5%	11%	2%	7%	7%	2%	8%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	9.5	67.3		15.5	73.3	73.3	10.6	10.6		12.1	12.1	12.1
Effective Green, g (s)	10.9	69.6		16.9	75.6	75.6	13.0	13.0		14.5	14.5	14.5
Actuated g/C Ratio	0.08	0.54		0.13	0.58	0.58	0.10	0.10		0.11	0.11	0.11
Clearance Time (s)	5.4	6.3		5.4	6.3	6.3	6.4	6.4		6.4	6.4	6.4
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	144	2637		438	2652	894	163	152		179	183	167
v/s Ratio Prot	0.05	c0.55		c0.07	c0.48		0.01	c0.11		0.03	c0.04	
v/s Ratio Perm						0.07						0.00
v/c Ratio	0.62	1.03		0.54	0.82	0.12	0.14	1.15		0.30	0.33	0.03
Uniform Delay, d1	57.5	30.2		52.9	21.8	12.2	53.4	58.5		53.1	53.3	51.5
Progression Factor	1.09	0.63		0.83	0.41	0.14	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.4	21.6		0.4	1.7	0.2	1.8	118.3		0.3	0.4	0.0
Delay (s)	65.9	40.5		44.6	10.6	1.8	55.2	176.8		53.4	53.6	51.5
Level of Service	E	D		D	B	A	E	F		D	D	D
Approach Delay (s)		41.3			13.3			166.3			52.9	
Approach LOS		D			B			F			D	

Intersection Summary

HCM Average Control Delay	35.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	0.88	1.00	1.00			
Frt		0.99	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4660	1286		4940	2584	1656	1509			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4660	1286		4940	2584	1656	1509			
Volume (vph)	0	1745	1075	0	2020	845	315	0	400	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1837	1132	0	2126	889	342	0	435	0	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1950	1014	0	2126	889	342	435	0	0	0
Heavy Vehicles (%)	0%	4%	8%	0%	5%	10%	9%	0%	7%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		67.9	130.0		67.9	130.0	53.6	53.6			
Effective Green, g (s)		68.3	130.0		68.3	130.0	53.7	53.7			
Actuated g/C Ratio		0.53	1.00		0.53	1.00	0.41	0.41			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		2448	1286		2595	2584	684	623			
v/s Ratio Prot		0.42			0.43		0.21	0.29			
v/s Ratio Perm			c0.79			0.34					
v/c Ratio		0.80	0.79		0.82	0.34	0.50	0.70			
Uniform Delay, d1		25.2	0.0		25.7	0.0	28.2	31.5			
Progression Factor		0.49	1.00		0.60	1.00	1.00	1.00			
Incremental Delay, d2		0.7	1.2		1.8	0.2	2.6	6.4			
Delay (s)		13.0	1.2		17.2	0.2	30.8	37.9			
Level of Service		B	A		B	A	C	D			
Approach Delay (s)		9.0			12.2			34.8		0.0	
Approach LOS		A			B			C		A	

Intersection Summary

HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	0.0
Intersection Capacity Utilization	73.1%	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												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.93		1.00	0.93	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1761		1559	1518	1252	3045	3202		1583	3027	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1671	1761		1559	1518	1252	3045	3202		1583	3027	
Volume (vph)	340	240	70	150	40	20	390	375	310	125	290	275
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.87	0.87	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	370	261	76	172	46	23	419	403	333	136	315	299
RTOR Reduction (vph)	0	8	0	0	0	20	0	97	0	0	112	0
Lane Group Flow (vph)	370	329	0	112	106	3	419	639	0	136	502	0
Heavy Vehicles (%)	8%	4%	5%	10%	23%	29%	15%	6%	4%	14%	12%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	32.2	32.2		15.2	15.2	15.2	20.8	50.3		16.1	44.1	
Effective Green, g (s)	32.4	32.4		14.9	14.9	14.9	22.0	50.9		15.8	44.7	
Actuated g/C Ratio	0.25	0.25		0.11	0.11	0.11	0.17	0.39		0.12	0.34	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	416	439		179	174	143	515	1254		192	1041	
v/s Ratio Prot	c0.22	0.19		c0.07	0.07		c0.14	c0.20		c0.09	0.17	
v/s Ratio Perm						0.00						
v/c Ratio	0.89	0.75		0.63	0.61	0.02	0.81	0.51		0.71	0.48	
Uniform Delay, d1	47.1	45.0		54.9	54.8	51.1	52.0	30.1		54.9	33.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.55	0.35		1.00	1.00	
Incremental Delay, d2	20.6	7.4		7.7	7.0	0.1	5.8	0.9		9.4	1.6	
Delay (s)	67.7	52.4		62.6	61.8	51.1	34.1	11.4		64.2	35.2	
Level of Service	E	D		E	E	D	C	B		E	D	
Approach Delay (s)		60.4			61.1			19.6			40.4	
Approach LOS		E			E			B			D	

Intersection Summary

HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.0
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												
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
Lane Util. Factor	*0.90	*0.85			0.81		0.94		1.00	0.97		0.88
Frt	1.00	1.00			0.96		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	2954	4704			7052		4713		1583	3303		2493
Flt Permitted	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	2954	4704			7052		4713		1583	3303		2493
Volume (vph)	510	1550	0	0	1490	575	1050	0	1000	195	0	325
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	537	1632	0	0	1568	605	1105	0	1053	212	0	353
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	537	1632	0	0	2173	0	1105	0	1053	212	0	348
Heavy Vehicles (%)	10%	3%	2%	2%	4%	6%	8%	2%	2%	6%	2%	14%
Turn Type	Prot						Prot		Free	Prot		Over
Protected Phases	5	2			6		8			4		5
Permitted Phases									Free			
Actuated Green, G (s)	30.8	84.4			48.4		34.8		130.0	36.5		30.8
Effective Green, g (s)	32.0	85.3			49.3		36.7		130.0	36.7		32.0
Actuated g/C Ratio	0.25	0.66			0.38		0.28		1.00	0.28		0.25
Clearance Time (s)	5.2	4.9			4.9		5.9			4.2		5.2
Vehicle Extension (s)	2.0	4.5			4.5		3.3			4.5		2.0
Lane Grp Cap (vph)	727	3087			2674		1331		1583	932		614
v/s Ratio Prot	0.18	0.35			c0.31		c0.23			0.06		0.14
v/s Ratio Perm									c0.67			
v/c Ratio	0.74	0.53			1.03dr		0.83		0.67	0.23		0.57
Uniform Delay, d1	45.1	11.8			36.2		43.7		0.0	35.8		42.9
Progression Factor	0.80	0.27			0.71		1.00		1.00	0.97		0.60
Incremental Delay, d2	2.2	0.4			2.6		4.6		2.2	0.2		0.6
Delay (s)	38.3	3.6			28.3		48.3		2.2	34.8		26.3
Level of Service	D	A			C		D		A	C		C
Approach Delay (s)		12.2			28.3			25.8			29.5	
Approach LOS		B			C			C			C	

Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	0.86	1.00	0.97	0.86		0.91	0.91	0.88	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1736	6346	1538	3467	6336		3042	1542	2814	1719	1521	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1736	6346	1538	3467	6336		3042	1542	2814	1719	1521	
Volume (vph)	20	2270	455	641	1755	15	290	10	675	20	15	20
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78
Adj. Flow (vph)	21	2389	479	675	1847	16	315	11	734	26	19	26
RTOR Reduction (vph)	0	0	53	0	0	0	0	0	59	0	25	0
Lane Group Flow (vph)	21	2389	426	675	1863	0	210	116	675	26	20	0
Heavy Vehicles (%)	4%	3%	5%	1%	3%	5%	8%	0%	1%	5%	6%	20%
Turn Type	Prot		pm+ov	Prot			Split		pm+ov	Split		
Protected Phases	5	2	8	1	6		8	8	1	7	7	
Permitted Phases			2						8			
Actuated Green, G (s)	3.6	55.3	72.4	31.8	85.5		17.1	17.1	48.9	4.8	4.8	
Effective Green, g (s)	3.8	57.2	76.2	33.0	86.4		19.0	19.0	52.0	4.8	4.8	
Actuated g/C Ratio	0.03	0.44	0.59	0.25	0.66		0.15	0.15	0.40	0.04	0.04	
Clearance Time (s)	4.2	5.9	5.9	5.2	4.9		5.9	5.9	5.2	4.0	4.0	
Vehicle Extension (s)	3.0	5.7	5.6	5.7	3.0		5.6	5.6	5.7	3.0	3.0	
Lane Grp Cap (vph)	51	2792	902	880	4211		445	225	1212	63	56	
v/s Ratio Prot	0.01	c0.38	0.07	c0.19	0.29		0.07	0.08	c0.14	c0.02	0.01	
v/s Ratio Perm			0.21						0.10			
v/c Ratio	0.41	0.86	0.47	0.77	0.44		0.47	0.52	0.56	0.41	0.36	
Uniform Delay, d1	62.0	32.7	15.4	44.9	10.4		50.9	51.3	30.1	61.2	61.1	
Progression Factor	0.86	0.76	0.55	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.5	3.1	1.5	5.1	0.3		3.6	8.2	1.1	4.3	3.9	
Delay (s)	57.8	27.8	9.9	50.0	10.7		54.5	59.5	31.2	65.6	65.0	
Level of Service	E	C	A	D	B		D	E	C	E	E	
Approach Delay (s)		25.1			21.2			38.9			65.2	
Approach LOS		C			C			D			E	

Intersection Summary

HCM Average Control Delay	26.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.4%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1835		1770	1863	1583	1770	3338		1770	3437	
Flt Permitted	0.65	1.00		0.57	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1213	1835		1062	1863	1583	1770	3338		1770	3437	
Volume (vph)	75	83	9	92	76	69	16	831	342	84	886	141
Peak-hour factor, PHF	0.83	0.83	0.83	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	90	100	11	106	87	79	17	894	368	90	953	152
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	0	0	0
Lane Group Flow (vph)	90	111	0	106	87	10	17	1262	0	90	1105	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	14.6	14.6		14.6	14.6	14.6	3.6	78.0		8.9	83.3	
Effective Green, g (s)	15.2	15.2		15.2	15.2	15.2	3.6	78.9		8.9	84.2	
Actuated g/C Ratio	0.13	0.13		0.13	0.13	0.13	0.03	0.69		0.08	0.73	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	160	243		140	246	209	55	2290		137	2516	
v/s Ratio Prot		0.06			0.05		0.01	c0.38		c0.05	0.32	
v/s Ratio Perm	0.07			c0.10		0.01						
v/c Ratio	0.56	0.46		0.76	0.35	0.05	0.31	0.55		0.66	0.44	
Uniform Delay, d1	46.8	46.1		48.1	45.4	43.6	54.5	9.1		51.6	6.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.62	0.19		1.00	1.00	
Incremental Delay, d2	3.6	1.0		19.7	0.6	0.1	1.1	0.9		8.4	0.6	
Delay (s)	50.4	47.1		67.8	46.1	43.7	34.6	2.6		59.9	6.6	
Level of Service	D	D		E	D	D	C	A		E	A	
Approach Delay (s)		48.6			53.8			3.0			10.7	
Approach LOS		D			D			A			B	

Intersection Summary

HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1639		1770	1863	1583	1770	3451		1770	3477	
Flt Permitted	0.74	1.00		0.74	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1377	1639		1374	1863	1583	1770	3451		1770	3477	
Volume (vph)	12	5	19	22	22	22	47	1155	54	22	911	54
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	15	6	24	28	28	28	51	1242	58	24	990	59
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0	0	0
Lane Group Flow (vph)	15	30	0	28	28	2	51	1300	0	24	1049	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	4%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	6.2	6.2		6.2	6.2	6.2	8.0	91.6		4.2	87.8	
Effective Green, g (s)	6.8	6.8		6.8	6.8	6.8	8.0	92.0		4.2	88.2	
Actuated g/C Ratio	0.06	0.06		0.06	0.06	0.06	0.07	0.80		0.04	0.77	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	81	97		81	110	94	123	2761		65	2667	
v/s Ratio Prot		0.02			0.02		c0.03	c0.38		0.01	0.30	
v/s Ratio Perm	0.01			c0.02		0.00						
v/c Ratio	0.19	0.31		0.35	0.25	0.02	0.41	0.47		0.37	0.39	
Uniform Delay, d1	51.5	51.8		52.0	51.7	51.0	51.3	3.7		54.1	4.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.03		1.14	0.37	
Incremental Delay, d2	0.8	1.3		1.9	0.9	0.1	0.7	0.5		1.2	0.4	
Delay (s)	52.3	53.2		53.8	52.6	51.0	52.1	0.6		62.7	2.1	
Level of Service	D	D		D	D	D	D	A		E	A	
Approach Delay (s)		52.9			52.5			2.5			3.4	
Approach LOS		D			D			A			A	

Intersection Summary

HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.96		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	3358		3437		1770	3505
Flt Permitted	0.96		1.00		0.95	1.00
Satd. Flow (perm)	3358		3437		1770	3505
Volume (vph)	145	45	1211	98	46	906
Peak-hour factor, PHF	0.83	0.83	0.93	0.93	0.92	0.92
Adj. Flow (vph)	175	54	1302	105	50	985
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	229	0	1407	0	50	985
Heavy Vehicles (%)	2%	2%	4%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	11.8		79.3		10.4	93.7
Effective Green, g (s)	12.4		80.2		10.4	94.6
Actuated g/C Ratio	0.11		0.70		0.09	0.82
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	362		2397		160	2883
v/s Ratio Prot	c0.07		c0.41		0.03	c0.28
v/s Ratio Perm						
v/c Ratio	0.63		0.59		0.31	0.34
Uniform Delay, d1	49.1		8.9		49.0	2.5
Progression Factor	1.00		0.10		1.04	0.24
Incremental Delay, d2	2.6		0.8		0.4	0.3
Delay (s)	51.8		1.7		51.5	0.9
Level of Service	D		A		D	A
Approach Delay (s)	51.8		1.7			3.3
Approach LOS	D		A			A

Intersection Summary

HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.4%	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												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	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)	2891	3438	1568	2891	3505	1568	3433	3505	1583	3400	3438	1320
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)	2891	3438	1568	2891	3505	1568	3433	3505	1583	3400	3438	1320
Volume (vph)	661	1224	167	130	361	84	458	564	434	92	378	581
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	696	1288	176	141	392	91	492	606	467	99	406	625
RTOR Reduction (vph)	0	0	68	0	0	76	0	0	95	0	0	36
Lane Group Flow (vph)	696	1288	108	141	392	15	492	606	372	99	406	589
Heavy Vehicles (%)	2%	5%	3%	2%	3%	3%	2%	3%	2%	3%	5%	3%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	35.8	46.4	46.4	7.2	17.8	17.8	18.0	37.2	37.2	6.0	25.2	61.0
Effective Green, g (s)	35.8	47.7	47.7	7.2	19.1	19.1	18.0	38.1	38.1	6.0	26.1	61.9
Actuated g/C Ratio	0.31	0.41	0.41	0.06	0.17	0.17	0.16	0.33	0.33	0.05	0.23	0.54
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	900	1426	650	181	582	260	537	1161	524	177	780	756
v/s Ratio Prot	0.24	c0.37		0.05	0.11		c0.14	0.17		0.03	0.12	c0.24
v/s Ratio Perm			0.07			0.01			0.23			0.20
v/c Ratio	0.77	0.90	0.17	0.78	0.67	0.06	0.92	0.52	0.71	0.56	0.52	0.78
Uniform Delay, d1	35.9	31.5	21.2	53.1	45.0	40.4	47.8	31.1	33.6	53.2	39.0	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.78	0.56
Incremental Delay, d2	3.8	8.3	0.1	17.3	2.8	0.1	20.1	1.7	7.9	2.0	2.3	4.4
Delay (s)	39.7	39.8	21.2	70.4	47.8	40.4	67.8	32.8	41.5	51.2	32.9	16.3
Level of Service	D	D	C	E	D	D	E	C	D	D	C	B
Approach Delay (s)		38.3			51.9			46.4			25.3	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	39.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2965	2409	2	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3121	2536	2	0	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.66	
vC, conflicting volume	2538				3317	635
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2538				2973	635
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	99
cM capacity (veh/h)	173				7	421

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	780	780	780	780	725	725	725	364	3
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	2	3
cSH	1700	1700	1700	1700	1700	1700	1700	1700	421
Volume to Capacity	0.46	0.46	0.46	0.46	0.43	0.43	0.43	0.21	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6
Lane LOS									B
Approach Delay (s)	0.0				0.0				13.6
Approach LOS									B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑↱			↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2965	2407	3	0	4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3121	2534	3	0	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.62	
vC, conflicting volume	2537				3576	846
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2537				3930	846
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	98
cM capacity (veh/h)	173				1	306

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	1040	1040	1040	1013	1013	510	5
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	3	5
cSH	1700	1700	1700	1700	1700	1700	306
Volume to Capacity	0.61	0.61	0.61	0.60	0.60	0.30	0.02
Queue Length 95th (ft)	0	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	17.0
Lane LOS							C
Approach Delay (s)	0.0			0.0			17.0
Approach LOS							C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	66	2896	3	21	2349	8	0	0	12	0	0	61
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	69	3048	3	22	2473	8	0	0	15	0	0	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1067										
pX, platoon unblocked				0.61			0.61	0.61	0.61	0.61	0.61	
vC, conflicting volume	2481			3052			4136	5714	1018	3692	5712	828
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2481			3085			4866	7461	0	4137	7457	828
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62			65			100	100	98	100	100	75
cM capacity (veh/h)	183			64			0	0	660	0	0	314

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	69	1219	1219	613	22	989	989	503	15	78
Volume Left	69	0	0	0	22	0	0	0	0	0
Volume Right	0	0	0	3	0	0	0	8	15	78
cSH	183	1700	1700	1700	64	1700	1700	1700	660	314
Volume to Capacity	0.38	0.72	0.72	0.36	0.35	0.58	0.58	0.30	0.02	0.25
Queue Length 95th (ft)	41	0	0	0	32	0	0	0	2	24
Control Delay (s)	36.3	0.0	0.0	0.0	89.3	0.0	0.0	0.0	10.6	20.2
Lane LOS	E				F				B	C
Approach Delay (s)	0.8				0.8				10.6	20.2
Approach LOS									B	C

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	2900	8	0	2366	5	0	0	4	0	0	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3053	8	0	2491	5	0	0	5	0	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2496			3061			3902	5553	1022	3516	5554	833
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2496			3061			3902	5553	1022	3516	5554	833
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	95
cM capacity (veh/h)	180			107			1	0	234	2	0	312

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1221	1221	619	996	996	503	5	15
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	8	0	0	5	5	15
cSH	1700	1700	1700	1700	1700	1700	234	312
Volume to Capacity	0.72	0.72	0.36	0.59	0.59	0.30	0.02	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	2	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	20.8	17.1
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			20.8	17.1
Approach LOS							C	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	31	2872	1	22	2358	12	0	0	4	0	0	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	33	3023	1	23	2482	13	0	0	5	0	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2495			3024			3979	5630	1008	3613	5624	834
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2495			3024			3979	5630	1008	3613	5624	834
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			79			100	100	98	100	100	95
cM capacity (veh/h)	180			110			1	0	238	1	0	312

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	33	1209	1209	606	23	993	993	509	5	17
Volume Left	33	0	0	0	23	0	0	0	0	0
Volume Right	0	0	0	1	0	0	0	13	5	17
cSH	180	1700	1700	1700	110	1700	1700	1700	238	312
Volume to Capacity	0.18	0.71	0.71	0.36	0.21	0.58	0.58	0.30	0.02	0.05
Queue Length 95th (ft)	16	0	0	0	19	0	0	0	2	4
Control Delay (s)	29.3	0.0	0.0	0.0	46.0	0.0	0.0	0.0	20.4	17.2
Lane LOS	D				E				C	C
Approach Delay (s)	0.3				0.4				20.4	17.2
Approach LOS									C	C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	2874	2	0	2379	5	0	0	10	0	0	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3025	2	0	2504	5	0	0	13	0	0	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2509			3027			3878	5536	1009	3528	5534	837
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2509			3027			3878	5536	1009	3528	5534	837
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	95
cM capacity (veh/h)	178			110			1	0	238	2	0	310

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1210	1210	607	1002	1002	506	13	17
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	2	0	0	5	13	17
cSH	1700	1700	1700	1700	1700	1700	238	310
Volume to Capacity	0.71	0.71	0.36	0.59	0.59	0.30	0.05	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	4	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	21.0	17.3
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			21.0	17.3
Approach LOS							C	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	49	2835	0	26	2376	6	0	0	2	0	0	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	52	2984	0	27	2501	6	0	0	3	0	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2507			2984			3986	5649	995	3659	5646	837
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2507			2984			3986	5649	995	3659	5646	837
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	71			76			100	100	99	100	100	97
cM capacity (veh/h)	178			115			1	0	243	1	0	310

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	52	1194	1194	597	27	1000	1000	507	3	10
Volume Left	52	0	0	0	27	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	6	3	10
cSH	178	1700	1700	1700	115	1700	1700	1700	243	310
Volume to Capacity	0.29	0.70	0.70	0.35	0.24	0.59	0.59	0.30	0.01	0.03
Queue Length 95th (ft)	28	0	0	0	22	0	0	0	1	3
Control Delay (s)	33.2	0.0	0.0	0.0	46.0	0.0	0.0	0.0	19.9	17.0
Lane LOS	D				E				C	C
Approach Delay (s)	0.6				0.5				19.9	17.0
Approach LOS									C	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	2835	2	0	2401	5	0	0	4	0	0	7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78
Hourly flow rate (vph)	0	2984	2	0	2527	5	0	0	4	0	0	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2533			2986			3837	5518	996	3529	5516	845
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2533			2986			3837	5518	996	3529	5516	845
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	98	100	100	97
cM capacity (veh/h)	174			114			1	0	243	2	0	306

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1194	1194	599	1011	1011	511	4	9
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	2	0	0	5	4	9
cSH	1700	1700	1700	1700	1700	1700	243	306
Volume to Capacity	0.70	0.70	0.35	0.59	0.59	0.30	0.02	0.03
Queue Length 95th (ft)	0	0	0	0	0	0	1	2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	20.1	17.1
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			20.1	17.1
Approach LOS							C	C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	0	2396	6	0	10
Peak Hour Factor	0.92	0.92	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	0	2522	6	0	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2528				2525	844
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2528				2525	844
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	96
cM capacity (veh/h)	175				23	307

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	1009	1009	511	13
Volume Left	0	0	0	0
Volume Right	0	0	6	13
cSH	1700	1700	1700	307
Volume to Capacity	0.59	0.59	0.30	0.04
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	17.2
Lane LOS				C
Approach Delay (s)	0.0			17.2
Approach LOS				C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	7	2396	5	1	0	0	0	0	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	7	2522	5	1	0	0	0	0	6
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)					1079							
pX, platoon unblocked	0.71						0.71	0.71		0.71	0.71	0.71
vC, conflicting volume	2527			0			645	2542	0	2539	2539	633
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1932			0			0	1953	0	1949	1949	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	99
cM capacity (veh/h)	214			1622			720	45	1084	27	45	772

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	428	841	841	426	1	6
Volume Left	7	0	0	0	1	0
Volume Right	0	0	0	5	0	6
cSH	1622	1700	1700	1700	720	386
Volume to Capacity	0.00	0.49	0.49	0.25	0.00	0.02
Queue Length 95th (ft)	0	0	0	0	0	1
Control Delay (s)	0.2	0.0	0.0	0.0	10.0	14.5
Lane LOS	A				B	B
Approach Delay (s)	0.0				10.0	14.5
Approach LOS					B	B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	11	2392	11	11	1	0	0	4	5
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	12	2518	12	14	1	0	0	5	6
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)					728							
pX, platoon unblocked	0.68						0.68	0.68		0.68	0.68	0.68
vC, conflicting volume	2529			0			655	2553	0	2547	2547	635
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1849			0			0	1883	0	1875	1874	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			98	97	100	100	89	99
cM capacity (veh/h)	222			1622			633	48	1084	29	48	741

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	431	839	839	431	15	12
Volume Left	12	0	0	0	14	0
Volume Right	0	0	0	12	0	6
cSH	1622	1700	1700	1700	313	108
Volume to Capacity	0.01	0.49	0.49	0.25	0.05	0.11
Queue Length 95th (ft)	1	0	0	0	4	9
Control Delay (s)	0.3	0.0	0.0	0.0	17.1	44.8
Lane LOS	A				C	E
Approach Delay (s)	0.0				17.1	44.8
Approach LOS					C	E

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	4	2399	10	13	3	0	0	2	2
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	4	2525	11	17	4	0	0	3	3
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)					372							
pX, platoon unblocked	0.66						0.66	0.66		0.66	0.66	0.66
vC, conflicting volume	2536			0			641	2544	0	2541	2539	637
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1783			0			0	1796	0	1791	1788	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	93	100	100	95	100
cM capacity (veh/h)	227			1622			647	52	1084	32	53	716

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	425	842	842	431	21	5
Volume Left	4	0	0	0	17	0
Volume Right	0	0	0	11	0	3
cSH	1622	1700	1700	1700	207	106
Volume to Capacity	0.00	0.50	0.50	0.25	0.10	0.05
Queue Length 95th (ft)	0	0	0	0	8	4
Control Delay (s)	0.1	0.0	0.0	0.0	24.3	43.2
Lane LOS	A				C	E
Approach Delay (s)	0.0				24.3	43.2
Approach LOS					C	E

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.97	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6083		1752	3505			3399	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6083		1752	3505			3399	
Volume (vph)	0	0	0	242	2272	62	47	251	0	0	373	94
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	255	2392	65	54	289	0	0	429	108
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	0	2708	0	54	289	0	0	514	0
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	2%	2%	3%	3%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					47.5		4.3	31.3			23.3	
Effective Green, g (s)					48.1		4.0	31.9			23.9	
Actuated g/C Ratio					0.55		0.05	0.36			0.27	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					3325		80	1271			923	
v/s Ratio Prot							c0.03	0.08			c0.15	
v/s Ratio Perm					0.45							
v/c Ratio					0.81		0.68	0.23			0.56	
Uniform Delay, d1					16.3		41.4	19.5			27.5	
Progression Factor					0.25		0.94	1.20			1.00	
Incremental Delay, d2					1.6		14.2	0.4			2.4	
Delay (s)					5.7		53.2	23.8			29.9	
Level of Service					A		D	C			C	
Approach Delay (s)		0.0			5.7			28.4			29.9	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	26	2558	15	10	14	0	0	10	8
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	27	2693	16	13	18	0	0	13	10
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)		346			345							
pX, platoon unblocked	0.69						0.69	0.69		0.69	0.69	0.69
vC, conflicting volume	2708			0			734	2763	0	2764	2755	681
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2140			0			0	2219	0	2221	2208	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			97	39	100	100	57	99
cM capacity (veh/h)	173			1622			460	29	1084	8	30	753

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	476	898	898	465	31	23
Volume Left	27	0	0	0	13	0
Volume Right	0	0	0	16	0	10
cSH	1622	1700	1700	1700	48	54
Volume to Capacity	0.02	0.53	0.53	0.27	0.64	0.43
Queue Length 95th (ft)	1	0	0	0	62	40
Control Delay (s)	0.6	0.0	0.0	0.0	166.3	113.7
Lane LOS	A				F	F
Approach Delay (s)	0.1				166.3	113.7
Approach LOS					F	F

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6097		1770	1863			3384	
Flt Permitted					1.00		0.65	1.00			1.00	
Satd. Flow (perm)					6097		1211	1863			3384	
Volume (vph)	0	0	0	150	2499	73	63	197	0	0	89	37
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	158	2631	77	81	253	0	0	114	47
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	0	2862	0	81	253	0	0	159	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					54.5		22.3	22.3			22.3	
Effective Green, g (s)					56.1		23.9	23.9			23.9	
Actuated g/C Ratio					0.64		0.27	0.27			0.27	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					3887		329	506			919	
v/s Ratio Prot								c0.14			0.05	
v/s Ratio Perm					0.47		0.07					
v/c Ratio					0.74		0.25	0.50			0.17	
Uniform Delay, d1					10.9		25.0	27.0			24.5	
Progression Factor					0.10		0.58	0.63			1.00	
Incremental Delay, d2					0.7		1.6	3.1			0.4	
Delay (s)					1.8		16.1	20.0			24.9	
Level of Service					A		B	C			C	
Approach Delay (s)		0.0			1.8			19.1			24.9	
Approach LOS		A			A			B			C	

Intersection Summary

HCM Average Control Delay	4.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	27	2712	17	1	5	0	0	1	9
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	28	2855	18	1	6	0	0	1	12
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)		373			371							
pX, platoon unblocked	0.60						0.60	0.60		0.60	0.60	0.60
vC, conflicting volume	2873			0			771	2929	0	2924	2921	723
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2110			0			0	2205	0	2195	2190	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	75	100	100	95	98
cM capacity (veh/h)	153			1622			569	26	1084	12	26	647

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	504	952	952	494	8	13
Volume Left	28	0	0	0	1	0
Volume Right	0	0	0	18	0	12
cSH	1622	1700	1700	1700	31	263
Volume to Capacity	0.02	0.56	0.56	0.29	0.25	0.05
Queue Length 95th (ft)	1	0	0	0	20	4
Control Delay (s)	0.6	0.0	0.0	0.0	158.4	24.5
Lane LOS	A				F	C
Approach Delay (s)	0.1				158.4	24.5
Approach LOS					F	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6093		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6093		1770	3539			3539	1583
Volume (vph)	0	0	0	177	2641	88	56	388	0	0	410	59
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.92	0.87	0.87
Adj. Flow (vph)	0	0	0	186	2780	93	64	446	0	0	471	68
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	0	0	0	3054	0	64	446	0	0	471	42
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					50.8		4.8	28.0			19.0	19.0
Effective Green, g (s)					51.4		5.0	28.6			19.6	19.6
Actuated g/C Ratio					0.58		0.06	0.32			0.22	0.22
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					3559		101	1150			788	353
v/s Ratio Prot							c0.04	0.13			c0.13	
v/s Ratio Perm					0.50							0.03
v/c Ratio					0.86		0.63	0.39			0.60	0.12
Uniform Delay, d1					15.3		40.6	22.9			30.7	27.3
Progression Factor					0.53		0.63	0.52			1.00	1.00
Incremental Delay, d2					2.0		8.0	0.9			3.3	0.7
Delay (s)					10.1		33.5	12.9			34.0	28.0
Level of Service					B		C	B			C	C
Approach Delay (s)		0.0			10.1			15.4			33.2	
Approach LOS		A			B			B			C	

Intersection Summary

HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	37	2892	89	14	5	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	39	3044	94	18	6	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		381			357							
pX, platoon unblocked	0.73						0.73	0.73		0.73	0.73	0.73
vC, conflicting volume	3138			0			839	3216	0	3172	3169	808
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2817			0			0	2924	0	2864	2860	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			98	40	100	100	100	100
cM capacity (veh/h)	98			1622			732	11	1084	3	12	790

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	546	1015	1015	601	18	6
Volume Left	39	0	0	0	18	0
Volume Right	0	0	0	94	0	0
cSH	1622	1700	1700	1700	732	11
Volume to Capacity	0.02	0.60	0.60	0.35	0.02	0.60
Queue Length 95th (ft)	2	0	0	0	2	33
Control Delay (s)	0.7	0.0	0.0	0.0	10.0	568.0
Lane LOS	A				B	F
Approach Delay (s)	0.1				156.9	
Approach LOS					F	

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6102	1583	1770	1863			1863	1583
Flt Permitted					0.99	1.00	0.72	1.00			1.00	1.00
Satd. Flow (perm)					6102	1583	1345	1863			1863	1583
Volume (vph)	0	0	0	443	2962	72	24	23	0	0	42	32
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	0	0	466	3118	76	31	29	0	0	54	41
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	3584	61	31	29	0	0	54	40
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6		6	8					4
Actuated Green, G (s)					68.6	68.6	8.3	8.3			8.3	8.3
Effective Green, g (s)					70.2	70.2	9.8	9.8			9.8	9.8
Actuated g/C Ratio					0.80	0.80	0.11	0.11			0.11	0.11
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4868	1263	150	207			207	176
v/s Ratio Prot								0.02			c0.03	
v/s Ratio Perm					0.59	0.04	0.02					0.03
v/c Ratio					0.74	0.05	0.21	0.14			0.26	0.23
Uniform Delay, d1					4.4	1.9	35.6	35.3			35.8	35.7
Progression Factor					0.03	0.00	0.97	0.97			1.00	1.00
Incremental Delay, d2					0.5	0.0	0.2	0.1			0.2	0.2
Delay (s)					0.6	0.0	34.7	34.2			36.0	35.9
Level of Service					A	A	C	C			D	D
Approach Delay (s)		0.0			0.6			34.4			36.0	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	2.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6134	1583	1770	1863			1863	1583
Flt Permitted					1.00	1.00	0.54	1.00			1.00	1.00
Satd. Flow (perm)					6134	1583	1014	1863			1863	1583
Volume (vph)	0	0	0	0	3391	88	32	128	0	0	156	54
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	3569	93	39	154	0	0	179	62
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	3569	62	39	154	0	0	179	61
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Turn Type						Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)					56.9	56.9	20.0	20.0			20.0	20.0
Effective Green, g (s)					58.5	58.5	21.5	21.5			21.5	21.5
Actuated g/C Ratio					0.66	0.66	0.24	0.24			0.24	0.24
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					8.0	8.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4078	1052	248	455			455	387
v/s Ratio Prot					c0.58			0.08			c0.10	
v/s Ratio Perm						0.04	0.04					0.04
v/c Ratio					0.88	0.06	0.16	0.34			0.39	0.16
Uniform Delay, d1					11.8	5.1	26.1	27.4			27.8	26.1
Progression Factor					1.00	1.00	0.99	0.96			1.00	1.00
Incremental Delay, d2					2.9	0.1	1.2	1.8			2.5	0.9
Delay (s)					14.8	5.3	27.0	28.2			30.3	27.0
Level of Service					B	A	C	C			C	C
Approach Delay (s)		0.0			14.5			27.9			29.5	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	16.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	2835	6	0	0	0	6
Peak Hour Factor	0.95	0.95	0.92	0.92	0.78	0.78
Hourly flow rate (vph)	2984	6	0	0	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				728		
pX, platoon unblocked						
vC, conflicting volume			2991		2987	749
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2991		2987	749
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	98
cM capacity (veh/h)			114		11	354

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1
Volume Total	853	853	853	433	8
Volume Left	0	0	0	0	0
Volume Right	0	0	0	6	8
cSH	1700	1700	1700	1700	354
Volume to Capacity	0.50	0.50	0.50	0.25	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	15.4
Lane LOS					C
Approach Delay (s)	0.0				15.4
Approach LOS					C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	2819	5	0	0	0	0	4	1	2	6	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	18	2967	5	0	0	0	0	5	1	3	8	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			2973			3010	3006	744	780	3008	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2973			3010	3006	744	780	3008	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	61	100	99	41	100
cM capacity (veh/h)	1622			116			3	13	357	196	13	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	512	989	989	500	6	10
Volume Left	18	0	0	0	0	3
Volume Right	0	0	0	5	1	0
cSH	1622	1700	1700	1700	16	17
Volume to Capacity	0.01	0.58	0.58	0.29	0.39	0.60
Queue Length 95th (ft)	1	0	0	0	26	40
Control Delay (s)	0.4	0.0	0.0	0.0	324.8	383.0
Lane LOS	A				F	F
Approach Delay (s)	0.1				324.8	383.0
Approach LOS					F	F

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		1.00						0.97		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6108						3391		1752	3505	
Flt Permitted		1.00						1.00		0.46	1.00	
Satd. Flow (perm)		6108						3391		843	3505	
Volume (vph)	161	2635	26	0	0	0	0	262	72	106	454	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	169	2774	27	0	0	0	0	301	83	115	493	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2969	0	0	0	0	0	383	0	115	493	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	3%	3%	3%	3%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.4						26.4		26.4	26.4	
Effective Green, g (s)		52.0						28.0		28.0	28.0	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.6						5.6		5.6	5.6	
Vehicle Extension (s)		5.6						4.4		5.9	5.9	
Lane Grp Cap (vph)		3609						1079		268	1115	
v/s Ratio Prot								0.11			c0.14	
v/s Ratio Perm		0.49								0.14		
v/c Ratio		0.82						0.36		0.43	0.44	
Uniform Delay, d1		14.3						23.1		23.7	23.8	
Progression Factor		1.00						1.00		0.89	0.90	
Incremental Delay, d2		2.2						0.9		3.8	1.0	
Delay (s)		16.6						24.0		24.9	22.5	
Level of Service		B						C		C	C	
Approach Delay (s)		16.6			0.0			24.0			22.9	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	2769	22	0	0	0	0	7	7	27	15	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	23	2915	23	0	0	0	0	9	9	35	19	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)		346			345							
pX, platoon unblocked				0.62			0.62	0.62	0.62	0.62	0.62	
vC, conflicting volume	0			2938			2982	2973	740	779	2984	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2298			2369	2354	0	0	2372	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	59	99	92	9	100
cM capacity (veh/h)	1622			135			2	22	677	422	21	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	509	972	972	509	18	54
Volume Left	23	0	0	0	0	35
Volume Right	0	0	0	23	9	0
cSH	1622	1700	1700	1700	43	54
Volume to Capacity	0.01	0.57	0.57	0.30	0.41	0.99
Queue Length 95th (ft)	1	0	0	0	36	112
Control Delay (s)	0.5	0.0	0.0	0.0	134.6	242.1
Lane LOS	A				F	F
Approach Delay (s)	0.1				134.6	242.1
Approach LOS					F	F

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6118						3307		1770	1863	
Flt Permitted		1.00						1.00		0.45	1.00	
Satd. Flow (perm)		6118						3307		845	1863	
Volume (vph)	96	2682	25	0	0	0	0	190	148	12	222	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	101	2823	26	0	0	0	0	218	170	14	255	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	2949	0	0	0	0	0	387	0	14	255	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.5						26.8		26.8	26.8	
Effective Green, g (s)		52.0						28.0		28.0	28.0	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		3615						1052		269	593	
v/s Ratio Prot								0.12			c0.14	
v/s Ratio Perm		0.48								0.02		
v/c Ratio		0.82						0.37		0.05	0.43	
Uniform Delay, d1		14.2						23.2		20.8	23.7	
Progression Factor		0.58						1.00		0.59	0.60	
Incremental Delay, d2		1.3						1.0		0.3	2.0	
Delay (s)		9.5						24.2		12.5	16.1	
Level of Service		A						C		B	B	
Approach Delay (s)		9.5			0.0			24.2			16.0	
Approach LOS		A			A			C			B	

Intersection Summary

HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	2803	28	0	0	0	0	0	9	2	24	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	12	2951	29	0	0	0	0	0	12	3	31	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)		373			371							
pX, platoon unblocked				0.63			0.63	0.63	0.63	0.63	0.63	
vC, conflicting volume	0			2980			3004	2988	752	761	3003	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2372			2410	2386	0	0	2409	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	100	98	100	0	100
cM capacity (veh/h)	1622			126			0	21	680	627	20	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	503	984	984	521	12	33
Volume Left	12	0	0	0	0	3
Volume Right	0	0	0	29	12	0
cSH	1622	1700	1700	1700	340	22
Volume to Capacity	0.01	0.58	0.58	0.31	0.03	1.53
Queue Length 95th (ft)	1	0	0	0	3	108
Control Delay (s)	0.2	0.0	0.0	0.0	16.0	645.4
Lane LOS	A				C	F
Approach Delay (s)	0.0				16.0	645.4
Approach LOS					C	F

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6099						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.46	1.00	
Satd. Flow (perm)		6099						3539	1583	855	3539	
Volume (vph)	207	2551	56	0	0	0	0	351	209	145	478	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	218	2685	59	0	0	0	0	382	227	158	520	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	2959	0	0	0	0	0	382	226	158	520	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		50.4						26.4	26.4	26.4	26.4	
Effective Green, g (s)		52.0						28.0	28.0	28.0	28.0	
Actuated g/C Ratio		0.59						0.32	0.32	0.32	0.32	
Clearance Time (s)		5.6						5.6	5.6	5.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	3.9	3.9	
Lane Grp Cap (vph)		3604						1126	504	272	1126	
v/s Ratio Prot								0.11			0.15	
v/s Ratio Perm		0.49							0.14	c0.18		
v/c Ratio		0.82						0.34	0.45	0.58	0.46	
Uniform Delay, d1		14.3						22.9	23.9	25.1	24.0	
Progression Factor		0.26						1.00	1.00	0.44	0.39	
Incremental Delay, d2		1.3						0.8	2.9	6.7	1.0	
Delay (s)		5.0						23.7	26.7	17.8	10.4	
Level of Service		A						C	C	B	B	
Approach Delay (s)		5.0			0.0			24.9			12.1	
Approach LOS		A			A			C			B	

Intersection Summary

HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.0%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	46	2808	51	0	0	0	0	5	8	26	8	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	48	2956	54	0	0	0	0	6	10	33	10	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)		377			348							
pX, platoon unblocked				0.63			0.63	0.63	0.63	0.63	0.63	
vC, conflicting volume	0			3009			3085	3079	766	839	3106	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2431			2550	2542	0	0	2584	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	61	99	92	33	100
cM capacity (veh/h)	1622			121			4	16	684	432	15	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	541	985	985	546	17	44
Volume Left	48	0	0	0	0	33
Volume Right	0	0	0	54	10	0
cSH	1622	1700	1700	1700	42	58
Volume to Capacity	0.03	0.58	0.58	0.32	0.39	0.75
Queue Length 95th (ft)	2	0	0	0	34	81
Control Delay (s)	0.9	0.0	0.0	0.0	132.8	164.4
Lane LOS	A				F	F
Approach Delay (s)	0.2				132.8	164.4
Approach LOS					F	F

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6080						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.72	1.00	
Satd. Flow (perm)		6080						1863	1583	1338	3539	
Volume (vph)	108	2586	148	0	0	0	0	49	81	68	457	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.83	0.83	0.83	0.92	0.92	0.92
Adj. Flow (vph)	114	2722	156	0	0	0	0	59	98	74	497	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	2984	0	0	0	0	0	59	96	74	497	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		57.8						19.4	19.4	19.4	19.4	
Effective Green, g (s)		59.4						20.6	20.6	20.6	20.6	
Actuated g/C Ratio		0.68						0.23	0.23	0.23	0.23	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4104						436	371	313	828	
v/s Ratio Prot								0.03			c0.14	
v/s Ratio Perm		0.49							0.06	0.06		
v/c Ratio		0.73						0.14	0.26	0.24	0.60	
Uniform Delay, d1		9.1						26.7	27.5	27.3	30.0	
Progression Factor		0.32						1.00	1.00	1.24	1.23	
Incremental Delay, d2		0.7						0.1	0.1	0.1	0.7	
Delay (s)		3.6						26.7	27.6	33.9	37.5	
Level of Service		A						C	C	C	D	
Approach Delay (s)		3.6			0.0			27.3			37.0	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.4%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6106						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.72	1.00	
Satd. Flow (perm)		6106						1863	1583	1335	1863	
Volume (vph)	108	2567	60	0	0	0	0	48	42	28	116	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.83	0.83	0.83
Adj. Flow (vph)	114	2702	63	0	0	0	0	62	54	34	140	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	2876	0	0	0	0	0	62	52	34	140	0
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		55.2						23.0	23.0	22.0	22.0	
Effective Green, g (s)		56.8						23.2	23.2	23.2	23.2	
Actuated g/C Ratio		0.65						0.26	0.26	0.26	0.26	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		3941						491	417	352	491	
v/s Ratio Prot								0.03			c0.08	
v/s Ratio Perm		0.47							0.03	0.03		
v/c Ratio		0.73						0.13	0.12	0.10	0.29	
Uniform Delay, d1		10.5						24.7	24.7	24.5	25.8	
Progression Factor		0.24						1.00	1.00	0.79	0.84	
Incremental Delay, d2		0.9						0.5	0.6	0.5	1.4	
Delay (s)		3.4						25.2	25.3	19.9	23.1	
Level of Service		A						C	C	B	C	
Approach Delay (s)		3.4			0.0			25.2			22.5	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.0%	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												
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		0.97	*0.87	1.00	1.00	1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.86		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (prot)	1612	4835		3400	4678	1568	1626	1578		1665	1673	1429
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.95	1.00
Satd. Flow (perm)	1612	4835		3400	4678	1568	1626	1578		1665	1673	1429
Volume (vph)	90	2590	40	340	2235	450	25	10	260	355	5	125
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	95	2726	42	358	2353	474	29	11	299	408	6	144
RTOR Reduction (vph)	0	0	0	0	0	135	0	86	0	0	0	56
Lane Group Flow (vph)	95	2768	0	358	2353	339	29	224	0	204	210	88
Heavy Vehicles (%)	12%	7%	9%	3%	6%	3%	11%	2%	3%	3%	0%	13%
Turn Type	Prot			Prot		Perm	Split			Split		Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						4
Actuated Green, G (s)	9.8	67.4		12.8	70.4	70.4	19.8	19.8		21.1	21.1	21.1
Effective Green, g (s)	10.0	69.7		13.0	72.7	72.7	20.0	20.0		21.3	21.3	21.3
Actuated g/C Ratio	0.07	0.50		0.09	0.52	0.52	0.14	0.14		0.15	0.15	0.15
Clearance Time (s)	4.2	6.3		4.2	6.3	6.3	4.2	4.2		4.2	4.2	4.2
Vehicle Extension (s)	2.0	6.4		2.0	5.5	5.5	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	115	2407		316	2429	814	232	225		253	255	217
v/s Ratio Prot	0.06	c0.57		c0.11	0.50		0.02	c0.14		0.12	c0.13	
v/s Ratio Perm						0.22						0.06
v/c Ratio	0.83	1.15		1.13	0.97	0.42	0.12	1.00		0.81	0.82	0.41
Uniform Delay, d1	64.1	35.2		63.5	32.5	20.6	52.4	60.0		57.4	57.5	53.6
Progression Factor	0.97	1.24		0.73	0.62	0.44	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	28.1	71.6		72.1	5.1	0.5	1.1	59.2		16.0	18.1	0.5
Delay (s)	90.5	115.0		118.4	25.3	9.5	53.5	119.2		73.4	75.7	54.1
Level of Service	F	F		F	C	A	D	F		E	E	D
Approach Delay (s)		114.2			33.4			113.5			69.3	
Approach LOS		F			C			F			E	

Intersection Summary

HCM Average Control Delay	73.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR
Lane Configurations											
Ideal Flow (vphpl)	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		0.86	0.86		0.91	0.88	1.00	1.00			
Frpb, ped/bikes		1.00	0.99		1.00	0.98	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00			
Frt		0.97	0.85		1.00	0.85	1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (prot)		4513	1282		4940	2625	1570	1524			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00			
Satd. Flow (perm)		4513	1282		4940	2625	1570	1524			
Volume (vph)	0	1680	1525	0	2495	1425	350	0	530	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1768	1605	0	2626	1500	380	0	576	0	0
RTOR Reduction (vph)	0	35	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	2241	1097	0	2626	1500	380	575	0	0	0
Confl. Peds. (#/hr)			2			2					
Heavy Vehicles (%)	0%	4%	7%	0%	5%	6%	15%	0%	6%	0%	0%
Turn Type			Free			Free	Split				
Protected Phases		2			6		4	4			
Permitted Phases			Free			Free					
Actuated Green, G (s)		77.6	140.0		77.6	140.0	53.9	53.9			
Effective Green, g (s)		78.0	140.0		78.0	140.0	54.0	54.0			
Actuated g/C Ratio		0.56	1.00		0.56	1.00	0.39	0.39			
Clearance Time (s)		4.4			4.4		4.1	4.1			
Vehicle Extension (s)		4.5			4.5		4.1	4.1			
Lane Grp Cap (vph)		2514	1282		2752	2625	606	588			
v/s Ratio Prot		0.50			c0.53		0.24	c0.38			
v/s Ratio Perm			0.86			0.57					
v/c Ratio		0.89	0.86		0.95	0.57	0.63	0.98			
Uniform Delay, d1		27.3	0.0		29.3	0.0	34.8	42.4			
Progression Factor		0.23	1.00		0.39	1.00	1.00	1.00			
Incremental Delay, d2		0.5	0.7		3.3	0.3	4.9	32.2			
Delay (s)		6.9	0.7		14.7	0.3	39.7	74.6			
Level of Service		A	A		B	A	D	E			
Approach Delay (s)		4.9			9.4			60.7		0.0	
Approach LOS		A			A			E		A	

Intersection Summary

HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
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	
Lane Util. Factor	1.00	1.00		0.95	0.95	1.00	0.97	0.95		1.00	0.95	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1625		1633	1648	1553	3213	3089		1399	3254	
Flt Permitted	0.95	1.00		0.95	0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1583	1625		1633	1648	1553	3213	3089		1399	3254	
Volume (vph)	150	110	60	350	70	105	365	425	235	100	550	185
Peak-hour factor, PHF	0.87	0.87	0.87	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	172	126	69	380	76	114	392	457	253	109	598	201
RTOR Reduction (vph)	0	0	0	0	0	94	0	0	0	0	0	0
Lane Group Flow (vph)	172	195	0	225	231	20	392	710	0	109	799	0
Heavy Vehicles (%)	14%	10%	12%	5%	8%	4%	9%	6%	19%	29%	6%	9%
Turn Type	Split			Split		Perm	Prot			Prot		
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3						
Actuated Green, G (s)	21.3	21.3		25.1	25.1	25.1	20.4	59.4		18.0	55.5	
Effective Green, g (s)	21.5	21.5		24.8	24.8	24.8	21.6	60.0		17.7	56.1	
Actuated g/C Ratio	0.15	0.15		0.18	0.18	0.18	0.15	0.43		0.13	0.40	
Clearance Time (s)	4.2	4.2		3.7	3.7	3.7	5.2	4.6		3.7	4.6	
Vehicle Extension (s)	4.1	4.1		4.1	4.1	4.1	2.0	5.5		2.0	5.5	
Lane Grp Cap (vph)	243	250		289	292	275	496	1324		177	1304	
v/s Ratio Prot	0.11	c0.12		0.14	c0.14		c0.12	0.23		0.08	c0.25	
v/s Ratio Perm						0.01						
v/c Ratio	0.71	0.78		0.78	0.79	0.07	0.79	0.54		0.62	0.61	
Uniform Delay, d1	56.3	57.0		55.0	55.1	48.0	57.0	29.7		57.9	33.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.05	0.43		1.00	1.00	
Incremental Delay, d2	9.8	15.5		13.3	14.4	0.2	2.3	0.4		4.4	2.2	
Delay (s)	66.1	72.4		68.2	69.6	48.2	62.0	13.1		62.3	35.5	
Level of Service	E	E		E	E	D	E	B		E	D	
Approach Delay (s)		69.5			64.8			30.5			38.7	
Approach LOS		E			E			C			D	

Intersection Summary

HCM Average Control Delay	44.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.8%	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												
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
Lane Util. Factor	*0.90	*0.85			0.81		0.94		1.00	0.97		0.88
Frt	1.00	1.00			0.97		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	2927	4704			7203		4670		1568	3400		2656
Flt Permitted	0.95	1.00			1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	2927	4704			7203		4670		1568	3400		2656
Volume (vph)	525	1505	0	0	2055	555	1415	0	850	505	0	450
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	553	1584	0	0	2163	584	1489	0	895	549	0	489
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	2
Lane Group Flow (vph)	553	1584	0	0	2747	0	1489	0	895	549	0	487
Heavy Vehicles (%)	11%	3%	0%	0%	3%	5%	9%	0%	3%	3%	0%	7%
Turn Type	Prot						Prot		Free	Prot		Over
Protected Phases	5	2			6		8			4		5
Permitted Phases									Free			
Actuated Green, G (s)	25.8	85.1			54.1		44.1		140.0	44.8		25.8
Effective Green, g (s)	27.0	86.0			55.0		46.0		140.0	46.0		27.0
Actuated g/C Ratio	0.19	0.61			0.39		0.33		1.00	0.33		0.19
Clearance Time (s)	5.2	4.9			4.9		5.9			5.2		5.2
Vehicle Extension (s)	2.0	4.5			4.5		3.3			2.0		2.0
Lane Grp Cap (vph)	564	2890			2830		1534		1568	1117		512
v/s Ratio Prot	c0.19	0.34			c0.38		c0.32			0.16		0.18
v/s Ratio Perm									0.57			
v/c Ratio	0.98	0.55			0.97		0.97		0.57	0.49		0.95
Uniform Delay, d1	56.2	15.7			41.7		46.3		0.0	37.6		55.9
Progression Factor	0.78	1.86			0.69		1.00		1.00	0.53		1.23
Incremental Delay, d2	22.2	0.4			9.9		16.5		1.5	0.1		22.4
Delay (s)	66.0	29.6			38.9		62.8		1.5	20.1		91.1
Level of Service	E	C			D		E		A	C		F
Approach Delay (s)		39.0			38.9			39.8			53.6	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	41.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.9%	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												
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	0.86	1.00	0.97	0.86		0.91	0.91	0.88	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1752	6285	1568	3433	6281		3189	1613	2787	1805	1621	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1752	6285	1568	3433	6281		3189	1613	2787	1805	1621	
Volume (vph)	35	2380	445	553	1985	10	585	25	715	20	15	40
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.93	0.93	0.93	0.78	0.78	0.78
Adj. Flow (vph)	37	2505	468	582	2089	11	629	27	769	26	19	51
RTOR Reduction (vph)	0	0	53	0	0	0	0	0	46	0	49	0
Lane Group Flow (vph)	37	2505	415	582	2100	0	425	231	723	26	21	0
Heavy Vehicles (%)	3%	4%	3%	2%	4%	0%	3%	0%	2%	0%	0%	6%
Turn Type	Prot		pm+ov	Prot			Split		pm+ov	Split		
Protected Phases	5	2	8	1	6		8	8	1	7	7	
Permitted Phases			2						8			
Actuated Green, G (s)	6.1	59.5	85.6	28.6	84.5		26.1	26.1	54.7	4.8	4.8	
Effective Green, g (s)	5.8	61.4	89.4	29.8	85.4		28.0	28.0	57.8	4.8	4.8	
Actuated g/C Ratio	0.04	0.44	0.64	0.21	0.61		0.20	0.20	0.41	0.03	0.03	
Clearance Time (s)	3.7	5.9	5.9	5.2	4.9		5.9	5.9	5.2	4.0	4.0	
Vehicle Extension (s)	3.0	5.7	5.6	5.7	3.0		5.6	5.6	5.7	3.0	3.0	
Lane Grp Cap (vph)	73	2756	1046	731	3831		638	323	1151	62	56	
v/s Ratio Prot	0.02	c0.40	0.08	c0.17	0.33		0.13	c0.14	0.13	c0.01	0.01	
v/s Ratio Perm			0.19						0.13			
v/c Ratio	0.51	0.91	0.40	0.80	0.55		0.67	0.72	0.63	0.42	0.37	
Uniform Delay, d1	65.7	36.7	12.2	52.2	16.0		51.7	52.3	32.6	66.2	66.1	
Progression Factor	1.04	0.58	0.25	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.6	4.9	1.0	7.2	0.6		5.4	12.7	1.7	4.5	4.1	
Delay (s)	72.9	26.1	4.0	59.4	16.6		57.1	65.0	34.3	70.8	70.2	
Level of Service	E	C	A	E	B		E	E	C	E	E	
Approach Delay (s)		23.2			25.9			46.1			70.4	
Approach LOS		C			C			D			E	

Intersection Summary

HCM Average Control Delay	29.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.2%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1781		1770	1863	1583	1770	3413		1770	3441	
Flt Permitted	0.63	1.00		0.44	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1181	1781		818	1863	1583	1770	3413		1770	3441	
Volume (vph)	134	113	47	127	89	78	25	1113	256	54	835	124
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	154	130	54	146	102	90	27	1197	275	58	898	133
RTOR Reduction (vph)	0	0	0	0	0	73	0	0	0	0	0	0
Lane Group Flow (vph)	154	184	0	146	102	17	27	1472	0	58	1031	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	21.9	21.9		21.9	21.9	21.9	4.2	77.6		7.0	80.4	
Effective Green, g (s)	22.5	22.5		22.5	22.5	22.5	4.2	78.5		7.0	81.3	
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.19	0.04	0.65		0.06	0.68	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.9		4.0	4.9	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	221	334		153	349	297	62	2233		103	2331	
v/s Ratio Prot		0.10			0.05		0.02	c0.43		c0.03	0.30	
v/s Ratio Perm	0.13			c0.18		0.01						
v/c Ratio	0.70	0.55		0.95	0.29	0.06	0.44	0.66		0.56	0.44	
Uniform Delay, d1	45.6	44.2		48.2	41.9	40.0	56.7	12.6		55.0	8.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.62	0.12		1.00	1.00	
Incremental Delay, d2	8.5	1.6		58.7	0.3	0.1	1.5	1.3		4.1	0.6	
Delay (s)	54.1	45.7		106.9	42.2	40.1	36.8	2.7		59.2	9.5	
Level of Service	D	D		F	D	D	D	A		E	A	
Approach Delay (s)		49.5			69.6			3.4			12.2	
Approach LOS		D			E			A			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)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.7%	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												
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	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1636		1770	1863	1583	1770	3480		1770	3498	
Flt Permitted	0.75	1.00		0.38	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1389	1636		700	1863	1583	1770	3480		1770	3498	
Volume (vph)	30	29	124	62	15	28	31	1336	71	29	967	13
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	36	35	149	75	18	34	33	1437	76	31	1040	14
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	0
Lane Group Flow (vph)	36	184	0	75	18	5	33	1513	0	31	1054	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	2%
Turn Type	Perm			Perm		Perm	Prot			Prot		
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)	17.7	17.7		17.7	17.7	17.7	4.8	84.5		4.8	84.5	
Effective Green, g (s)	18.3	18.3		18.3	18.3	18.3	4.8	84.9		4.8	84.9	
Actuated g/C Ratio	0.15	0.15		0.15	0.15	0.15	0.04	0.71		0.04	0.71	
Clearance Time (s)	4.6	4.6		4.6	4.6	4.6	4.0	4.4		4.0	4.4	
Vehicle Extension (s)	2.5	2.5		2.5	2.5	2.5	2.0	4.0		2.0	4.0	
Lane Grp Cap (vph)	212	249		107	284	241	71	2462		71	2475	
v/s Ratio Prot		c0.11			0.01		c0.02	c0.43		0.02	0.30	
v/s Ratio Perm	0.03			0.11		0.00						
v/c Ratio	0.17	0.74		0.70	0.06	0.02	0.46	0.61		0.44	0.43	
Uniform Delay, d1	44.2	48.6		48.3	43.5	43.2	56.3	9.1		56.3	7.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.97	0.12		1.09	0.42	
Incremental Delay, d2	0.3	10.3		17.5	0.1	0.0	1.3	0.9		1.4	0.5	
Delay (s)	44.5	58.9		65.7	43.6	43.3	56.0	2.0		62.6	3.5	
Level of Service	D	E		E	D	D	E	A		E	A	
Approach Delay (s)		56.5			56.6			3.1			5.2	
Approach LOS		E			E			A			A	

Intersection Summary

HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0		4.0	4.0
Lane Util. Factor	0.97		0.95		1.00	0.95
Frt	0.93		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3280		3477		1770	3505
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	3280		3477		1770	3505
Volume (vph)	167	136	1302	77	43	1110
Peak-hour factor, PHF	0.87	0.87	0.93	0.93	0.93	0.93
Adj. Flow (vph)	192	156	1400	83	46	1194
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	348	0	1483	0	46	1194
Heavy Vehicles (%)	2%	2%	3%	2%	2%	3%
Turn Type					Prot	
Protected Phases	4		2		1	6
Permitted Phases						
Actuated Green, G (s)	16.5		80.4		9.6	94.0
Effective Green, g (s)	17.1		81.3		9.6	94.9
Actuated g/C Ratio	0.14		0.68		0.08	0.79
Clearance Time (s)	4.6		4.9		4.0	4.9
Vehicle Extension (s)	2.0		4.0		2.0	4.0
Lane Grp Cap (vph)	467		2356		142	2772
v/s Ratio Prot	c0.11		c0.43		0.03	c0.34
v/s Ratio Perm						
v/c Ratio	0.75		0.63		0.32	0.43
Uniform Delay, d1	49.4		10.9		52.1	4.0
Progression Factor	1.00		0.10		1.10	0.81
Incremental Delay, d2	5.6		0.8		0.4	0.4
Delay (s)	54.9		1.9		57.9	3.7
Level of Service	D		A		E	A
Approach Delay (s)	54.9		1.9			5.7
Approach LOS	D		A			A

Intersection Summary			
HCM Average Control Delay	9.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

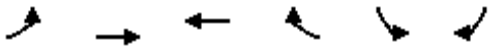
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1600	1900	1900	1600	1900	1900	1900	1900	1900	1900	1900	1600
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	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)	2891	3505	1583	2891	3505	1583	3400	3505	1568	3433	3539	1333
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)	2891	3505	1583	2891	3505	1583	3400	3505	1568	3433	3539	1333
Volume (vph)	565	908	337	483	926	73	385	741	361	63	600	614
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	608	976	362	519	996	78	414	797	388	68	645	660
RTOR Reduction (vph)	0	0	140	0	0	54	0	0	261	0	0	5
Lane Group Flow (vph)	608	976	222	519	996	24	414	797	127	68	645	655
Heavy Vehicles (%)	2%	3%	2%	2%	3%	2%	3%	3%	3%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	3	8		7	4		1	6		5	2	3
Permitted Phases			8			4			6			2
Actuated Green, G (s)	26.0	36.7	36.7	22.0	32.7	32.7	15.8	38.3	38.3	4.8	27.3	53.3
Effective Green, g (s)	26.0	38.0	38.0	22.0	34.0	34.0	15.8	39.2	39.2	4.8	28.2	54.2
Actuated g/C Ratio	0.22	0.32	0.32	0.18	0.28	0.28	0.13	0.33	0.33	0.04	0.24	0.45
Clearance Time (s)	4.0	5.3	5.3	4.0	5.3	5.3	4.0	4.9	4.9	4.0	4.9	4.0
Vehicle Extension (s)	2.0	2.5	2.5	2.0	2.5	2.5	2.0	4.0	4.0	2.0	4.0	2.0
Lane Grp Cap (vph)	626	1110	501	530	993	449	448	1145	512	137	832	647
v/s Ratio Prot	0.21	0.28		0.18	c0.28		c0.12	0.23		0.02	0.18	c0.22
v/s Ratio Perm			0.14			0.02			0.08			0.27
v/c Ratio	0.97	0.88	0.44	0.98	1.00	0.05	0.92	0.70	0.25	0.50	0.78	1.01
Uniform Delay, d1	46.6	38.8	32.6	48.8	43.0	31.3	51.5	35.2	29.6	56.4	42.9	32.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.71	0.56
Incremental Delay, d2	28.6	8.1	0.5	33.2	29.3	0.0	24.4	3.5	1.2	0.9	6.3	36.6
Delay (s)	75.2	46.9	33.0	82.0	72.3	31.3	75.9	38.7	30.7	46.4	36.6	55.1
Level of Service	E	D	C	F	E	C	E	D	C	D	D	E
Approach Delay (s)		53.2			73.5			46.4			46.0	
Approach LOS		D			E			D			D	

Intersection Summary

HCM Average Control Delay	55.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3115	2537	17	0	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3279	2671	18	0	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		417				
pX, platoon unblocked					0.63	
vC, conflicting volume	2688				3499	677
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2688				3205	677
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	96
cM capacity (veh/h)	151				5	396

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	820	820	820	820	763	763	763	399	14
Volume Left	0	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	18	14
cSH	1700	1700	1700	1700	1700	1700	1700	1700	396
Volume to Capacity	0.48	0.48	0.48	0.48	0.45	0.45	0.45	0.23	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4
Lane LOS									B
Approach Delay (s)	0.0				0.0				14.4
Approach LOS									B

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	3115	2505	14	0	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	3279	2637	15	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		732				
pX, platoon unblocked					0.58	
vC, conflicting volume	2652				3737	886
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2652				4264	886
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	78
cM capacity (veh/h)	156				1	287

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	1093	1093	1093	1055	1055	542	63
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	15	63
cSH	1700	1700	1700	1700	1700	1700	287
Volume to Capacity	0.64	0.64	0.64	0.62	0.62	0.32	0.22
Queue Length 95th (ft)	0	0	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	21.0
Lane LOS							C
Approach Delay (s)	0.0			0.0			21.0
Approach LOS							C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	69	3023	23	24	2452	6	0	0	13	0	0	67
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	73	3182	24	25	2581	6	0	0	17	0	0	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		1071										
pX, platoon unblocked				0.59			0.59	0.59	0.59	0.59	0.59	
vC, conflicting volume	2587			3206			4336	5977	1073	3857	5986	864
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2587			3351			5271	8060	0	4457	8075	864
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	56			47			100	100	97	100	100	71
cM capacity (veh/h)	166			48			0	0	638	0	0	298

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	73	1273	1273	661	25	1032	1032	523	17	86
Volume Left	73	0	0	0	25	0	0	0	0	0
Volume Right	0	0	0	24	0	0	0	6	17	86
cSH	166	1700	1700	1700	48	1700	1700	1700	638	298
Volume to Capacity	0.44	0.75	0.75	0.39	0.53	0.61	0.61	0.31	0.03	0.29
Queue Length 95th (ft)	50	0	0	0	49	0	0	0	2	29
Control Delay (s)	42.7	0.0	0.0	0.0	144.6	0.0	0.0	0.0	10.8	21.9
Lane LOS	E				F				B	C
Approach Delay (s)	0.9				1.4				10.8	21.9
Approach LOS									B	C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	3023	13	0	2459	8	0	0	8	0	0	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3182	14	0	2588	8	0	0	10	0	0	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2597			3196			4081	5786	1068	3664	5788	867
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2597			3196			4081	5786	1068	3664	5788	867
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	90
cM capacity (veh/h)	164			94			1	0	218	2	0	296

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1273	1273	650	1035	1035	526	10	29
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	14	0	0	8	10	29
cSH	1700	1700	1700	1700	1700	1700	218	296
Volume to Capacity	0.75	0.75	0.38	0.61	0.61	0.31	0.05	0.10
Queue Length 95th (ft)	0	0	0	0	0	0	4	8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	22.4	18.5
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			22.4	18.5
Approach LOS							C	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	28	3001	2	27	2458	18	0	0	3	0	0	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	29	3159	2	28	2587	19	0	0	4	0	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2606			3161			4150	5882	1054	3769	5874	872
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2606			3161			4150	5882	1054	3769	5874	872
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			71			100	100	98	100	100	96
cM capacity (veh/h)	163			97			0	0	222	1	0	294

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	29	1264	1264	634	28	1035	1035	536	4	12
Volume Left	29	0	0	0	28	0	0	0	0	0
Volume Right	0	0	0	2	0	0	0	19	4	12
cSH	163	1700	1700	1700	97	1700	1700	1700	222	294
Volume to Capacity	0.18	0.74	0.74	0.37	0.29	0.61	0.61	0.32	0.02	0.04
Queue Length 95th (ft)	16	0	0	0	27	0	0	0	1	3
Control Delay (s)	32.0	0.0	0.0	0.0	56.7	0.0	0.0	0.0	21.5	17.8
Lane LOS	D				F				C	C
Approach Delay (s)	0.3				0.6				21.5	17.8
Approach LOS									C	C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	2998	6	0	2475	10	0	0	34	0	0	28
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3156	6	0	2605	11	0	0	44	0	0	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2616			3162			4063	5775	1055	3706	5773	874
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2616			3162			4063	5775	1055	3706	5773	874
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	80	100	100	88
cM capacity (veh/h)	161			97			1	0	222	1	0	293

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1262	1262	637	1042	1042	532	44	36
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	6	0	0	11	44	36
cSH	1700	1700	1700	1700	1700	1700	222	293
Volume to Capacity	0.74	0.74	0.37	0.61	0.61	0.31	0.20	0.12
Queue Length 95th (ft)	0	0	0	0	0	0	18	10
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	25.1	19.0
Lane LOS							D	C
Approach Delay (s)	0.0			0.0			25.1	19.0
Approach LOS							D	C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	83	2944	5	37	2463	18	0	0	3	0	0	22
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	87	3099	5	39	2593	19	0	0	4	0	0	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2612			3104			4247	5966	1036	3892	5959	874
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2612			3104			4247	5966	1036	3892	5959	874
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	46			62			100	100	98	100	100	90
cM capacity (veh/h)	162			103			0	0	229	0	0	293

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	87	1240	1240	625	39	1037	1037	537	4	28
Volume Left	87	0	0	0	39	0	0	0	0	0
Volume Right	0	0	0	5	0	0	0	19	4	28
cSH	162	1700	1700	1700	103	1700	1700	1700	229	293
Volume to Capacity	0.54	0.73	0.73	0.37	0.38	0.61	0.61	0.32	0.02	0.10
Queue Length 95th (ft)	68	0	0	0	38	0	0	0	1	8
Control Delay (s)	50.6	0.0	0.0	0.0	60.2	0.0	0.0	0.0	21.0	18.6
Lane LOS	F				F				C	C
Approach Delay (s)	1.4				0.9				21.0	18.6
Approach LOS									C	C

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	2942	5	0	2507	2	0	0	8	0	0	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	3097	5	0	2639	2	0	0	10	0	0	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2641			3102			3993	5741	1035	3683	5742	881
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2641			3102			3993	5741	1035	3683	5742	881
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	96	100	100	95
cM capacity (veh/h)	158			103			1	0	229	2	0	290

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	1239	1239	625	1056	1056	530	10	14
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	5	0	0	2	10	14
cSH	1700	1700	1700	1700	1700	1700	229	290
Volume to Capacity	0.73	0.73	0.37	0.62	0.62	0.31	0.04	0.05
Queue Length 95th (ft)	0	0	0	0	0	0	4	4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	21.5	18.0
Lane LOS							C	C
Approach Delay (s)	0.0			0.0			21.5	18.0
Approach LOS							C	C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	0	2488	13	0	21
Peak Hour Factor	0.92	0.92	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	0	0	2619	14	0	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2633				2626	880
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2633				2626	880
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	91
cM capacity (veh/h)	159				19	290

Direction, Lane #	WB 1	WB 2	WB 3	SB 1
Volume Total	1048	1048	537	27
Volume Left	0	0	0	0
Volume Right	0	0	14	27
cSH	1700	1700	1700	290
Volume to Capacity	0.62	0.62	0.32	0.09
Queue Length 95th (ft)	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	18.7
Lane LOS				C
Approach Delay (s)	0.0			18.7
Approach LOS				C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	28	2493	7	2	3	0	0	1	6
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	29	2624	7	3	4	0	0	1	8
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)					1079							
pX, platoon unblocked	0.71						0.71	0.71		0.71	0.71	0.71
vC, conflicting volume	2632			0			716	2691	0	2689	2687	660
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2079			0			0	2161	0	2159	2156	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			100	88	100	100	96	99
cM capacity (veh/h)	188			1622			690	33	1084	17	33	772

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	467	875	875	445	6	9
Volume Left	29	0	0	0	3	0
Volume Right	0	0	0	7	0	8
cSH	1622	1700	1700	1700	53	231
Volume to Capacity	0.02	0.51	0.51	0.26	0.12	0.04
Queue Length 95th (ft)	1	0	0	0	10	3
Control Delay (s)	0.6	0.0	0.0	0.0	82.3	25.3
Lane LOS	A				F	D
Approach Delay (s)	0.1				82.3	25.3
Approach LOS					F	D

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	17	2491	15	34	6	0	0	8	3
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	18	2622	16	44	8	0	0	10	4
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)					724							
pX, platoon unblocked	0.68						0.68	0.68		0.68	0.68	0.68
vC, conflicting volume	2638			0			696	2674	0	2670	2666	663
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2011			0			0	2063	0	2058	2052	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			92	79	100	100	72	99
cM capacity (veh/h)	192			1622			544	37	1084	18	37	743

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	455	874	874	453	51	14
Volume Left	18	0	0	0	44	0
Volume Right	0	0	0	16	0	4
cSH	1622	1700	1700	1700	177	51
Volume to Capacity	0.01	0.51	0.51	0.27	0.29	0.28
Queue Length 95th (ft)	1	0	0	0	29	24
Control Delay (s)	0.4	0.0	0.0	0.0	33.5	101.1
Lane LOS	A				D	F
Approach Delay (s)	0.1				33.5	101.1
Approach LOS					D	F

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	12	2490	7	12	3	0	0	5	21
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	13	2621	7	15	4	0	0	6	27
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)					361							
pX, platoon unblocked	0.66						0.66	0.66		0.66	0.66	0.66
vC, conflicting volume	2628			0			684	2654	0	2652	2650	659
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1935			0			0	1973	0	1970	1967	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	91	100	100	84	96
cM capacity (veh/h)	199			1622			572	41	1084	23	41	720

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	449	874	874	444	19	33
Volume Left	13	0	0	0	15	0
Volume Right	0	0	0	7	0	27
cSH	1622	1700	1700	1700	158	213
Volume to Capacity	0.01	0.51	0.51	0.26	0.12	0.16
Queue Length 95th (ft)	1	0	0	0	10	14
Control Delay (s)	0.3	0.0	0.0	0.0	30.9	29.1
Lane LOS	A				D	D
Approach Delay (s)	0.0				30.9	29.1
Approach LOS					D	D

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	0.95			0.95	
Frt					1.00		1.00	1.00			0.95	
Flt Protected					1.00		0.95	1.00			1.00	
Satd. Flow (prot)					6054		1736	3471			3309	
Flt Permitted					1.00		0.95	1.00			1.00	
Satd. Flow (perm)					6054		1736	3471			3309	
Volume (vph)	0	0	0	209	2245	13	88	428	0	0	390	176
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	220	2363	14	96	465	0	0	424	191
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	39	0
Lane Group Flow (vph)	0	0	0	0	2596	0	96	465	0	0	576	0
Heavy Vehicles (%)	0%	0%	0%	2%	4%	4%	4%	4%	0%	0%	4%	4%
Turn Type				Perm			Prot					
Protected Phases					6		3	8			4	
Permitted Phases				6								
Actuated Green, G (s)					46.7		7.1	34.1			23.3	
Effective Green, g (s)					47.3		6.8	34.7			23.9	
Actuated g/C Ratio					0.53		0.08	0.39			0.27	
Clearance Time (s)					4.6		3.7	4.6			4.6	
Vehicle Extension (s)					4.8		2.0	2.9			5.1	
Lane Grp Cap (vph)					3182		131	1338			879	
v/s Ratio Prot							c0.06	0.13			c0.17	
v/s Ratio Perm					0.43							
v/c Ratio					0.82		0.73	0.35			0.66	
Uniform Delay, d1					17.7		40.7	19.6			29.4	
Progression Factor					0.40		0.75	1.09			1.00	
Incremental Delay, d2					1.6		13.0	0.1			3.8	
Delay (s)					8.6		43.4	21.6			33.2	
Level of Service					A		D	C			C	
Approach Delay (s)		0.0			8.6			25.3			33.2	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	15.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.8%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	21	2407	41	9	18	0	0	19	51
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	0	22	2534	43	12	23	0	0	24	65
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)		346			345							
pX, platoon unblocked	0.68						0.68	0.68		0.68	0.68	0.68
vC, conflicting volume	2577			0			690	2621	0	2611	2599	655
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1898			0			0	1964	0	1949	1932	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			97	45	100	100	44	91
cM capacity (veh/h)	210			1622			349	42	1084	15	44	734

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	444	845	845	465	35	90
Volume Left	22	0	0	0	12	0
Volume Right	0	0	0	43	0	65
cSH	1622	1700	1700	1700	59	161
Volume to Capacity	0.01	0.50	0.50	0.27	0.59	0.56
Queue Length 95th (ft)	1	0	0	0	60	72
Control Delay (s)	0.5	0.0	0.0	0.0	130.4	51.8
Lane LOS	A				F	F
Approach Delay (s)	0.1				130.4	51.8
Approach LOS					F	F

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	
Lane Util. Factor					0.86		1.00	1.00			0.95	
Frt					1.00		1.00	1.00			0.96	
Flt Protected					0.99		0.95	1.00			1.00	
Satd. Flow (prot)					6037		1770	1863			3411	
Flt Permitted					0.99		0.47	1.00			1.00	
Satd. Flow (perm)					6037		879	1863			3411	
Volume (vph)	0	0	0	328	2255	49	137	203	0	0	244	77
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	345	2374	52	157	233	0	0	280	89
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	0	0	2768	0	157	233	0	0	366	0
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Perm					
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					51.0		27.8	27.8			27.8	
Effective Green, g (s)					52.6		29.4	29.4			29.4	
Actuated g/C Ratio					0.58		0.33	0.33			0.33	
Clearance Time (s)					5.6		5.6	5.6			5.6	
Vehicle Extension (s)					2.0		2.0	2.0			2.0	
Lane Grp Cap (vph)					3528		287	609			1114	
v/s Ratio Prot								0.13			0.11	
v/s Ratio Perm					0.46		c0.18					
v/c Ratio					0.78		0.55	0.38			0.33	
Uniform Delay, d1					14.4		24.8	23.3			22.9	
Progression Factor					0.31		0.50	0.44			1.00	
Incremental Delay, d2					0.9		6.0	1.5			0.8	
Delay (s)					5.3		18.4	11.8			23.6	
Level of Service					A		B	B			C	
Approach Delay (s)		0.0			5.3			14.4			23.6	
Approach LOS		A			A			B			C	

Intersection Summary

HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	109.4%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	54	2532	24	11	10	0	0	12	89
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.83	0.83	0.83
Hourly flow rate (vph)	0	0	0	57	2665	25	14	13	0	0	14	107
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)		373			371							
pX, platoon unblocked	0.63						0.63	0.63		0.63	0.63	0.63
vC, conflicting volume	2691			0			787	2804	0	2798	2792	679
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1907			0			0	2089	0	2079	2068	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			96	59	100	100	55	84
cM capacity (veh/h)	193			1622			342	31	1084	13	32	678

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1
Volume Total	501	888	888	469	27	122
Volume Left	57	0	0	0	14	0
Volume Right	0	0	0	25	0	107
cSH	1622	1700	1700	1700	60	272
Volume to Capacity	0.04	0.52	0.52	0.28	0.45	0.45
Queue Length 95th (ft)	3	0	0	0	43	54
Control Delay (s)	1.1	0.0	0.0	0.0	107.0	32.1
Lane LOS	A				F	D
Approach Delay (s)	0.2				107.0	32.1
Approach LOS					F	D

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0		4.0	4.0			4.0	4.0
Lane Util. Factor					0.86		1.00	0.95			0.95	1.00
Frt					1.00		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					6037		1770	3539			3539	1583
Flt Permitted					1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)					6037		1770	3539			3539	1583
Volume (vph)	0	0	0	243	2188	64	238	534	0	0	672	184
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	256	2303	67	259	580	0	0	730	200
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	0	2622	0	259	580	0	0	730	171
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm			Prot					Perm
Protected Phases					6		3	8			4	
Permitted Phases				6								4
Actuated Green, G (s)					42.4		14.8	38.4			19.4	19.4
Effective Green, g (s)					43.0		15.0	39.0			20.0	20.0
Actuated g/C Ratio					0.48		0.17	0.43			0.22	0.22
Clearance Time (s)					4.6		4.2	4.6			4.6	4.6
Vehicle Extension (s)					4.9		2.0	3.1			5.2	5.2
Lane Grp Cap (vph)					2884		295	1534			786	352
v/s Ratio Prot							c0.15	0.16			c0.21	
v/s Ratio Perm					0.43							0.11
v/c Ratio					0.91		0.88	0.38			0.93	0.49
Uniform Delay, d1					21.7		36.6	17.3			34.3	30.5
Progression Factor					0.71		0.81	0.60			1.00	1.00
Incremental Delay, d2					4.6		22.0	0.7			18.8	4.7
Delay (s)					19.9		51.8	11.0			53.1	35.3
Level of Service					B		D	B			D	D
Approach Delay (s)		0.0			19.9			23.6			49.3	
Approach LOS		A			B			C			D	

Intersection Summary

HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	43	2447	23	48	46	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.78	0.78	0.78	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	45	2576	24	62	59	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)		381			357							
pX, platoon unblocked	0.81						0.81	0.81		0.81	0.81	0.81
vC, conflicting volume	2600			0			734	2691	0	2708	2678	656
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2282			0			0	2393	0	2414	2378	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			97			92	0	100	0	100	100
cM capacity (veh/h)	179			1622			816	26	1084	0	27	884

Direction, Lane #	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	475	859	859	454	62	59
Volume Left	45	0	0	0	62	0
Volume Right	0	0	0	24	0	0
cSH	1622	1700	1700	1700	816	26
Volume to Capacity	0.03	0.51	0.51	0.27	0.08	2.24
Queue Length 95th (ft)	2	0	0	0	6	179
Control Delay (s)	0.9	0.0	0.0	0.0	9.8	884.1
Lane LOS	A				A	F
Approach Delay (s)	0.2				437.6	
Approach LOS					F	

Intersection Summary				
Average Delay	19.2			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6056	1583	1770	1863			1863	1583
Flt Permitted					0.99	1.00	0.69	1.00			1.00	1.00
Satd. Flow (perm)					6056	1583	1287	1863			1863	1583
Volume (vph)	0	0	0	271	2403	21	62	74	0	0	76	48
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	0	0	0	285	2529	22	75	89	0	0	92	58
RTOR Reduction (vph)	0	0	0	0	0	5	0	0	0	0	0	3
Lane Group Flow (vph)	0	0	0	0	2814	17	75	89	0	0	92	55
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases				6		6	8					4
Actuated Green, G (s)					67.0	67.0	11.9	11.9			11.9	11.9
Effective Green, g (s)					68.6	68.6	13.4	13.4			13.4	13.4
Actuated g/C Ratio					0.76	0.76	0.15	0.15			0.15	0.15
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					4616	1207	192	277			277	236
v/s Ratio Prot								0.05			0.05	
v/s Ratio Perm					0.46	0.01	c0.06					0.04
v/c Ratio					0.61	0.01	0.39	0.32			0.33	0.23
Uniform Delay, d1					4.8	2.6	34.6	34.2			34.3	33.8
Progression Factor					0.18	0.02	0.61	0.62			1.00	1.00
Incremental Delay, d2					0.4	0.0	0.4	0.2			0.3	0.2
Delay (s)					1.3	0.1	21.5	21.4			34.6	34.0
Level of Service					A	A	C	C			C	C
Approach Delay (s)		0.0			1.3			21.5			34.3	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	3.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.0%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	12	12
Total Lost time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Lane Util. Factor					0.86	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					1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					6075	1583	1770	1863			1863	1583
Flt Permitted					1.00	1.00	0.56	1.00			1.00	1.00
Satd. Flow (perm)					6075	1583	1047	1863			1863	1583
Volume (vph)	0	0	0	0	2524	35	82	136	0	0	167	89
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	0	2657	37	94	156	0	0	192	102
RTOR Reduction (vph)	0	0	0	0	0	15	0	0	0	0	0	1
Lane Group Flow (vph)	0	0	0	0	2657	22	94	156	0	0	192	101
Heavy Vehicles (%)	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%	2%	2%
Turn Type						Perm	Perm					Perm
Protected Phases					6			8			4	
Permitted Phases						6	8					4
Actuated Green, G (s)					51.9	51.9	27.0	27.0			27.0	27.0
Effective Green, g (s)					53.5	53.5	28.5	28.5			28.5	28.5
Actuated g/C Ratio					0.59	0.59	0.32	0.32			0.32	0.32
Clearance Time (s)					5.6	5.6	5.5	5.5			5.5	5.5
Vehicle Extension (s)					2.0	2.0	2.0	2.0			2.0	2.0
Lane Grp Cap (vph)					3611	941	332	590			590	501
v/s Ratio Prot					c0.44			0.08			c0.10	
v/s Ratio Perm						0.01	0.09					0.06
v/c Ratio					0.74	0.02	0.28	0.26			0.33	0.20
Uniform Delay, d1					13.2	7.5	23.1	22.9			23.4	22.4
Progression Factor					1.00	1.00	1.10	1.07			1.00	1.00
Incremental Delay, d2					1.4	0.0	1.8	0.9			1.5	0.9
Delay (s)					14.5	7.6	27.3	25.5			24.9	23.3
Level of Service					B	A	C	C			C	C
Approach Delay (s)		0.0			14.4			26.2			24.4	
Approach LOS		A			B			C			C	

Intersection Summary

HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	2974	8	0	0	0	6
Peak Hour Factor	0.95	0.95	0.92	0.92	0.78	0.78
Hourly flow rate (vph)	3131	8	0	0	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				728		
pX, platoon unblocked						
vC, conflicting volume			3139		3135	787
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3139		3135	787
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	98
cM capacity (veh/h)			99		9	335

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1
Volume Total	894	894	894	456	8
Volume Left	0	0	0	0	0
Volume Right	0	0	0	8	8
cSH	1700	1700	1700	1700	335
Volume to Capacity	0.53	0.53	0.53	0.27	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	16.0
Lane LOS					C
Approach Delay (s)	0.0				16.0
Approach LOS					C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	2952	9	0	0	0	0	5	7	5	3	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	20	3107	9	0	0	0	0	6	9	6	4	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)					364							
pX, platoon unblocked												
vC, conflicting volume	0			3117			3154	3152	782	820	3157	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3117			3154	3152	782	820	3157	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	39	97	95	63	100
cM capacity (veh/h)	1622			101			3	10	337	132	10	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	538	1036	1036	527	15	10
Volume Left	20	0	0	0	0	6
Volume Right	0	0	0	9	9	0
cSH	1622	1700	1700	1700	25	24
Volume to Capacity	0.01	0.61	0.61	0.31	0.61	0.42
Queue Length 95th (ft)	1	0	0	0	47	32
Control Delay (s)	0.4	0.0	0.0	0.0	252.0	233.2
Lane LOS	A				F	F
Approach Delay (s)	0.1				252.0	233.2
Approach LOS					F	F

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	0.95	
Frt		1.00						0.96		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6044						3336		1736	3471	
Flt Permitted		1.00						1.00		0.29	1.00	
Satd. Flow (perm)		6044						3336		528	3471	
Volume (vph)	144	2768	52	0	0	0	0	413	145	137	394	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	2914	55	0	0	0	0	449	158	149	428	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	3119	0	0	0	0	0	606	0	149	428	0
Heavy Vehicles (%)	4%	4%	4%	0%	0%	0%	0%	4%	4%	4%	4%	0%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		51.4						27.4		27.4	27.4	
Effective Green, g (s)		53.0						29.0		29.0	29.0	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.6						5.6		5.6	5.6	
Vehicle Extension (s)		5.6						4.4		5.9	5.9	
Lane Grp Cap (vph)		3559						1075		170	1118	
v/s Ratio Prot								0.18			0.12	
v/s Ratio Perm		0.52								c0.28		
v/c Ratio		0.88						0.56		0.88	0.38	
Uniform Delay, d1		15.7						25.3		28.8	23.6	
Progression Factor		1.00						1.00		1.00	0.99	
Incremental Delay, d2		3.4						2.1		32.4	0.7	
Delay (s)		19.1						27.4		61.3	24.0	
Level of Service		B						C		E	C	
Approach Delay (s)		19.1			0.0			27.4			33.7	
Approach LOS		B			A			C			C	

Intersection Summary

HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.8%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	3017	25	0	0	0	0	9	33	35	13	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	8	3176	26	0	0	0	0	12	42	45	17	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)		346			345							
pX, platoon unblocked				0.57			0.57	0.57	0.57	0.57	0.57	
vC, conflicting volume	0			3202			3214	3206	807	817	3219	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2603			2624	2610	0	0	2633	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	16	93	72	0	100
cM capacity (veh/h)	1622			93			0	14	619	158	13	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	538	1059	1059	556	54	62
Volume Left	8	0	0	0	0	45
Volume Right	0	0	0	26	42	0
cSH	1622	1700	1700	1700	62	40
Volume to Capacity	0.01	0.62	0.62	0.33	0.86	1.54
Queue Length 95th (ft)	0	0	0	0	100	159
Control Delay (s)	0.2	0.0	0.0	0.0	185.2	497.0
Lane LOS	A				F	F
Approach Delay (s)	0.0				185.2	497.0
Approach LOS					F	F

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0		4.0	4.0	
Lane Util. Factor		0.86						0.95		1.00	1.00	
Frt		1.00						0.93		1.00	1.00	
Flt Protected		1.00						1.00		0.95	1.00	
Satd. Flow (prot)		6055						3283		1770	1863	
Flt Permitted		1.00						1.00		0.32	1.00	
Satd. Flow (perm)		6055						3283		599	1863	
Volume (vph)	81	2944	60	0	0	0	0	266	248	51	501	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	3099	63	0	0	0	0	289	270	55	545	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	3244	0	0	0	0	0	558	0	55	545	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm									Perm		
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		51.5						27.8		27.8	27.8	
Effective Green, g (s)		53.0						29.0		29.0	29.0	
Actuated g/C Ratio		0.59						0.32		0.32	0.32	
Clearance Time (s)		5.5						5.2		5.2	5.2	
Vehicle Extension (s)		2.0						2.0		2.0	2.0	
Lane Grp Cap (vph)		3566						1058		193	600	
v/s Ratio Prot								0.17			c0.29	
v/s Ratio Perm		0.54								0.09		
v/c Ratio		0.91						0.53		0.28	0.91	
Uniform Delay, d1		16.4						24.9		22.8	29.2	
Progression Factor		0.43						1.00		0.62	0.60	
Incremental Delay, d2		2.5						1.9		3.0	17.2	
Delay (s)		9.6						26.8		17.1	34.8	
Level of Service		A						C		B	C	
Approach Delay (s)		9.6			0.0			26.8			33.2	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	109.4%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	3205	28	0	0	0	0	13	50	18	33	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	11	3374	29	0	0	0	0	17	64	23	42	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)		373			371							
pX, platoon unblocked				0.53			0.53	0.53	0.53	0.53	0.53	
vC, conflicting volume	0			3403			3431	3409	858	873	3424	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			2870			2922	2882	0	0	2910	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			0	0	89	0	0	100
cM capacity (veh/h)	1622			67			0	8	573	0	8	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	573	1125	1125	592	81	65
Volume Left	11	0	0	0	0	23
Volume Right	0	0	0	29	64	0
cSH	1622	1700	1700	1700	39	0
Volume to Capacity	0.01	0.66	0.66	0.35	2.07	Err
Queue Length 95th (ft)	0	0	0	0	217	Err
Control Delay (s)	0.2	0.0	0.0	0.0	715.3	Err
Lane LOS	A				F	F
Approach Delay (s)	0.0				715.3	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						0.95	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6040						3539	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.43	1.00	
Satd. Flow (perm)		6040						3539	1583	799	3539	
Volume (vph)	205	2969	99	0	0	0	0	385	359	131	731	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	3125	104	0	0	0	0	418	390	142	795	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3440	0	0	0	0	0	418	389	142	795	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		51.4						27.4	27.4	27.4	27.4	
Effective Green, g (s)		53.0						29.0	29.0	29.0	29.0	
Actuated g/C Ratio		0.59						0.32	0.32	0.32	0.32	
Clearance Time (s)		5.6						5.6	5.6	5.6	5.6	
Vehicle Extension (s)		4.2						5.3	5.3	3.9	3.9	
Lane Grp Cap (vph)		3557						1140	510	257	1140	
v/s Ratio Prot								0.12			0.22	
v/s Ratio Perm		0.57							c0.25	0.18		
v/c Ratio		0.97						0.37	0.76	0.55	0.70	
Uniform Delay, d1		17.7						23.4	27.4	25.1	26.7	
Progression Factor		0.55						1.00	1.00	0.20	0.20	
Incremental Delay, d2		5.5						0.9	10.4	3.2	1.3	
Delay (s)		15.3						24.4	37.8	8.2	6.7	
Level of Service		B						C	D	A	A	
Approach Delay (s)		15.3			0.0			30.8			6.9	
Approach LOS		B			A			C			A	

Intersection Summary

HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.3%	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												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	74	3359	26	0	0	0	0	11	16	63	39	0
Peak Hour Factor	0.95	0.95	0.95	0.92	0.92	0.92	0.78	0.78	0.78	0.83	0.83	0.83
Hourly flow rate (vph)	78	3536	27	0	0	0	0	14	21	76	47	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)		377			348							
pX, platoon unblocked				0.47			0.47	0.47	0.47	0.47	0.47	
vC, conflicting volume	0			3563			3729	3705	898	1047	3719	0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			3061			3417	3366	0	0	3396	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			0	0	96	0	0	100
cM capacity (veh/h)	1622			50			0	3	504	0	3	1084

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	NB 1	SB 1
Volume Total	667	1179	1179	617	35	123
Volume Left	78	0	0	0	0	76
Volume Right	0	0	0	27	21	0
cSH	1622	1700	1700	1700	8	0
Volume to Capacity	0.05	0.69	0.69	0.36	4.22	Err
Queue Length 95th (ft)	4	0	0	0	Err	Err
Control Delay (s)	1.3	0.0	0.0	0.0	Err	Err
Lane LOS	A				F	F
Approach Delay (s)	0.2				Err	Err
Approach LOS					F	F

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	0.95	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6055						1863	1583	1770	3539	
Flt Permitted		1.00						1.00	1.00	0.54	1.00	
Satd. Flow (perm)		6055						1863	1583	1005	3539	
Volume (vph)	97	3275	66	0	0	0	0	146	194	103	144	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	102	3447	69	0	0	0	0	168	223	118	166	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3615	0	0	0	0	0	168	222	118	166	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		61.2						18.0	18.0	18.0	18.0	
Effective Green, g (s)		62.8						19.2	19.2	19.2	19.2	
Actuated g/C Ratio		0.70						0.21	0.21	0.21	0.21	
Clearance Time (s)		5.6						5.2	5.2	5.2	5.2	
Vehicle Extension (s)		2.0						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4225						397	338	214	755	
v/s Ratio Prot								0.09			0.05	
v/s Ratio Perm		0.60							c0.14	0.12		
v/c Ratio		0.86						0.42	0.66	0.55	0.22	
Uniform Delay, d1		10.2						30.6	32.4	31.6	29.2	
Progression Factor		0.23						1.00	1.00	0.88	0.87	
Incremental Delay, d2		1.0						0.3	3.5	1.5	0.0	
Delay (s)		3.4						30.9	35.9	29.2	25.6	
Level of Service		A						C	D	C	C	
Approach Delay (s)		3.4			0.0			33.7			27.1	
Approach LOS		A			A			C			C	

Intersection Summary

HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.0%	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												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0						4.0	4.0	4.0	4.0	
Lane Util. Factor		0.86						1.00	1.00	1.00	1.00	
Frt		1.00						1.00	0.85	1.00	1.00	
Flt Protected		1.00						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		6059						1863	1583	1770	1863	
Flt Permitted		1.00						1.00	1.00	0.57	1.00	
Satd. Flow (perm)		6059						1863	1583	1067	1863	
Volume (vph)	83	3435	54	0	0	0	0	126	153	90	131	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	87	3616	57	0	0	0	0	145	176	103	151	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	3758	0	0	0	0	0	145	175	103	151	0
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)		63.2						17.0	17.0	16.0	16.0	
Effective Green, g (s)		64.8						17.2	17.2	17.2	17.2	
Actuated g/C Ratio		0.72						0.19	0.19	0.19	0.19	
Clearance Time (s)		5.6						4.2	4.2	5.2	5.2	
Vehicle Extension (s)		4.9						2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		4362						356	303	204	356	
v/s Ratio Prot								0.08			0.08	
v/s Ratio Perm		0.62							c0.11	0.10		
v/c Ratio		0.86						0.41	0.58	0.50	0.42	
Uniform Delay, d1		9.3						31.9	33.1	32.6	32.0	
Progression Factor		0.23						1.00	1.00	0.46	0.45	
Incremental Delay, d2		1.3						3.4	7.8	8.5	3.6	
Delay (s)		3.4						35.4	40.9	23.5	17.9	
Level of Service		A						D	D	C	B	
Approach Delay (s)		3.4			0.0			38.4			20.2	
Approach LOS		A			A			D			C	

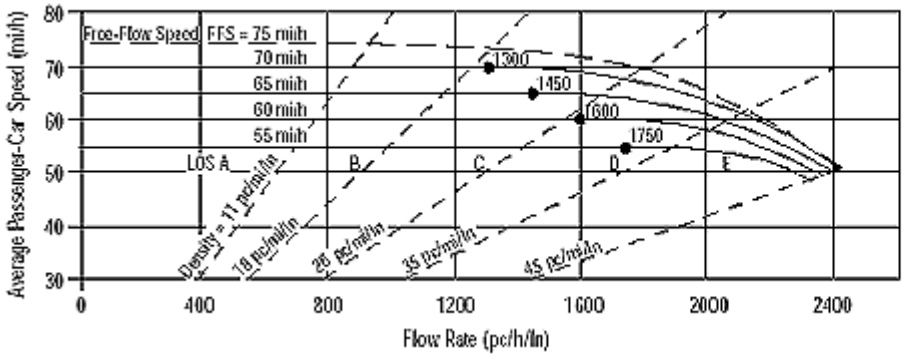
Intersection Summary

HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Freeway Analysis

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5680*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

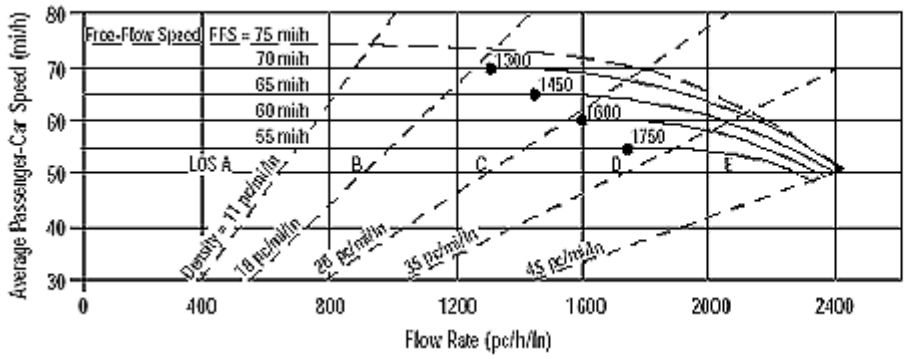
Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures			**Design (N)**		
Operational (LOS)			Design (N)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1688*	pc/h/ln	Design LOS		
S	*64.6*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
D = v_p / S	*26.1*	pc/mi/ln	S		mi/h
LOS	*D*		D = v_p / S		pc/mi/ln
			Required Number of Lanes, N		

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5180*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1525*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*23.5*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary

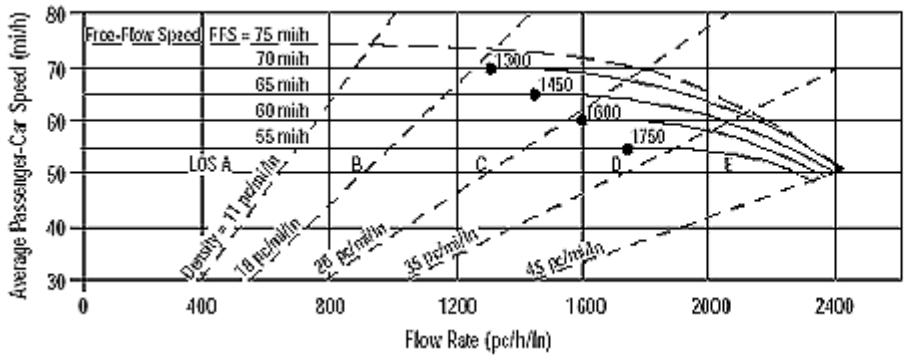
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3608*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

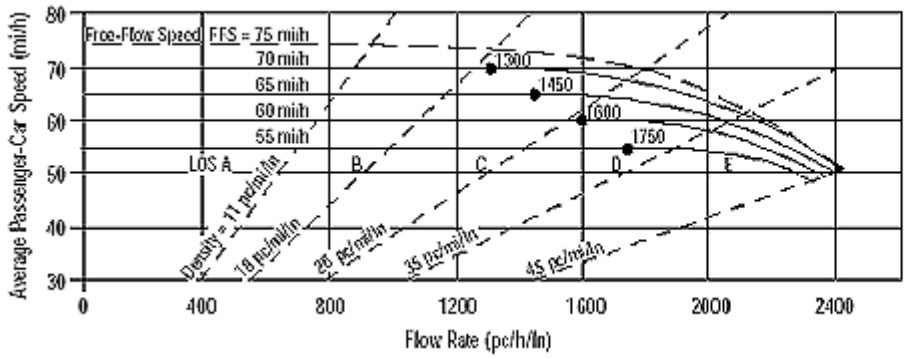
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1117*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*17.2*	pc/mi/ln	S	mi/h
LOS	*B*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3653*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*20*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.909*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

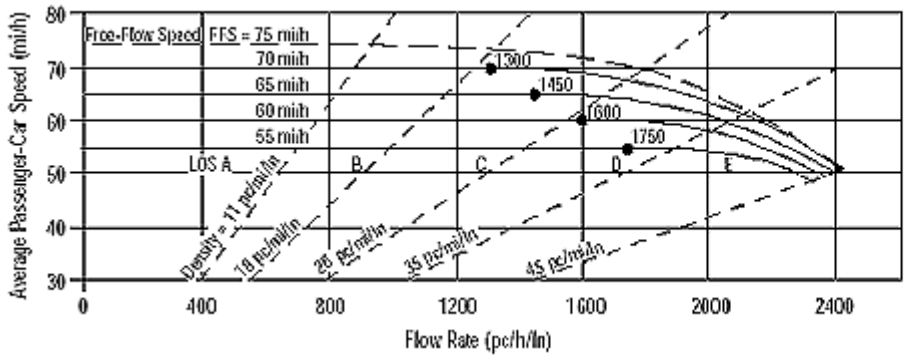
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1142*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*17.6*	pc/mi/ln	S	mi/h
LOS	*B*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3183*	veh/h	Peak-Hour Factor, PHF	*0.86*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*990*	pc/h/ln
S	*65.0*	mi/h
D = v_p / S	*15.2*	pc/mi/ln
LOS	*B*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

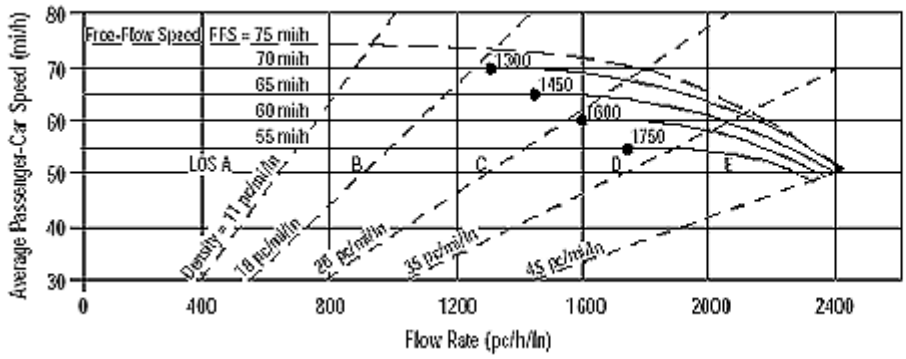
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4795*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1444*	pc/h/ln
S	*65.0*	mi/h
D = v_p / S	*22.2*	pc/mi/ln
LOS	*C*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

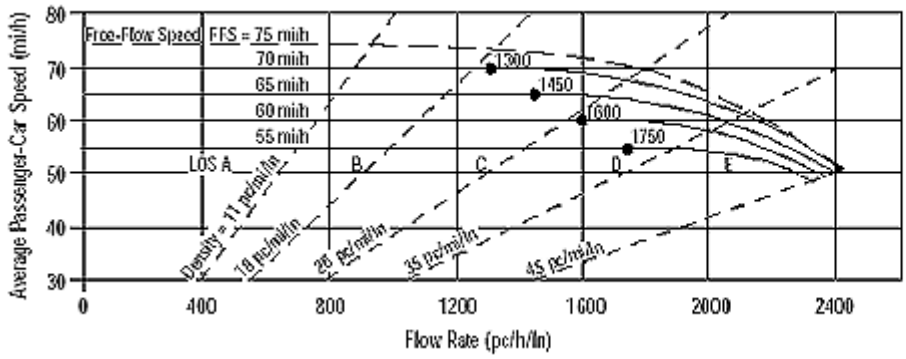
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4213*	veh/h	Peak-Hour Factor, PHF	*0.89*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1260*	pc/h/ln
S	*65.0*	mi/h
D = v_p / S	*19.4*	pc/mi/ln
LOS	*C*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

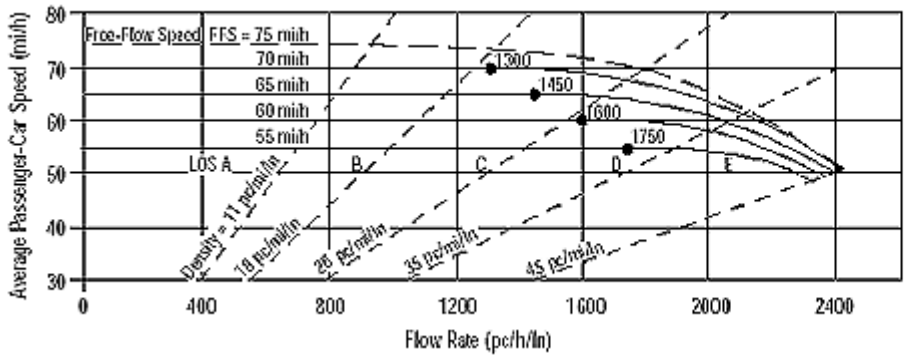
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*Existing (2009) Year*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6620*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

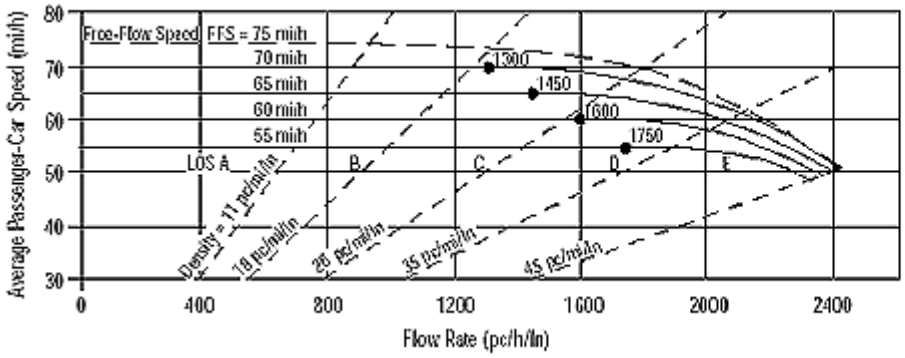
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1889*	pc/h/ln	Design LOS	
S	*63.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*30.0*	pc/mi/ln	S	mi/h
LOS	*D*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6960*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2069*	pc/h/ln
S	*60.2*	mi/h
D = v_p / S	*34.4*	pc/mi/ln
LOS	*D*	

Design (N)		
Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

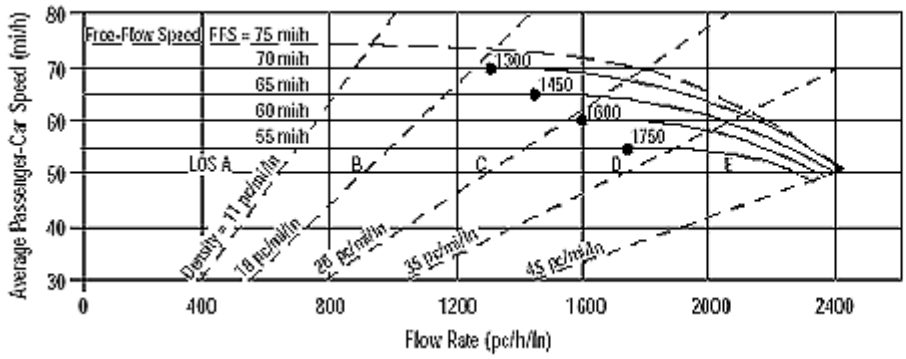
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7005*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2063*	pc/h/ln
S	*60.3*	mi/h
D = v_p / S	*34.2*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

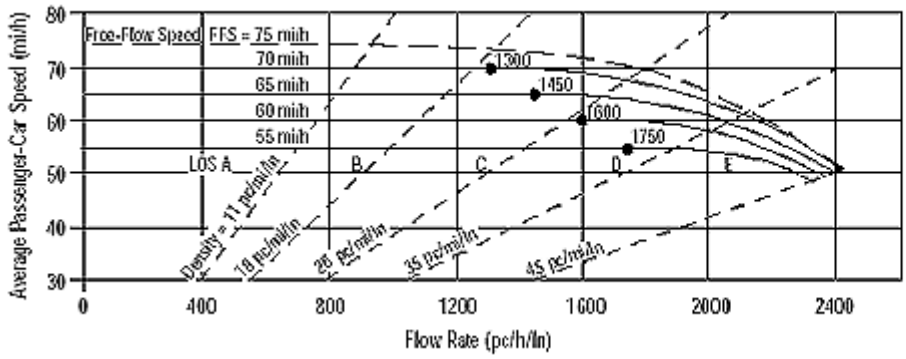
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4730*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1465*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*22.5*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary

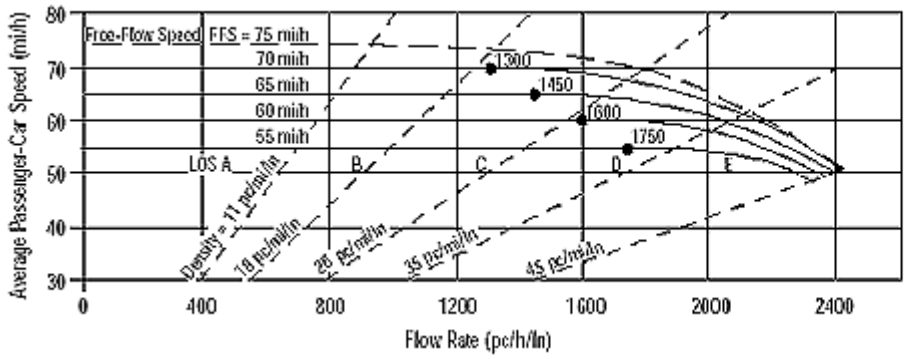
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5420*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*20*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.909*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1694*	pc/h/ln
S	*64.6*	mi/h
D = v_p / S	*26.2*	pc/mi/ln
LOS	*D*	

Design (N)		
Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

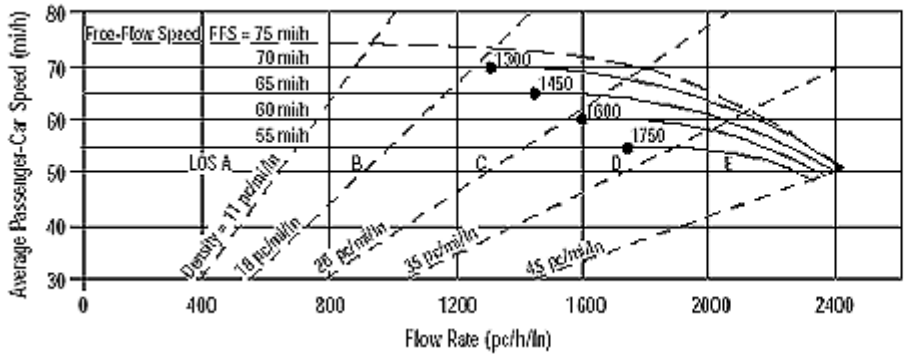
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5460*	veh/h	Peak-Hour Factor, PHF	*0.86*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1698*	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*64.6*	mi/h	S	mi/h
D = v_p / S	*26.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary

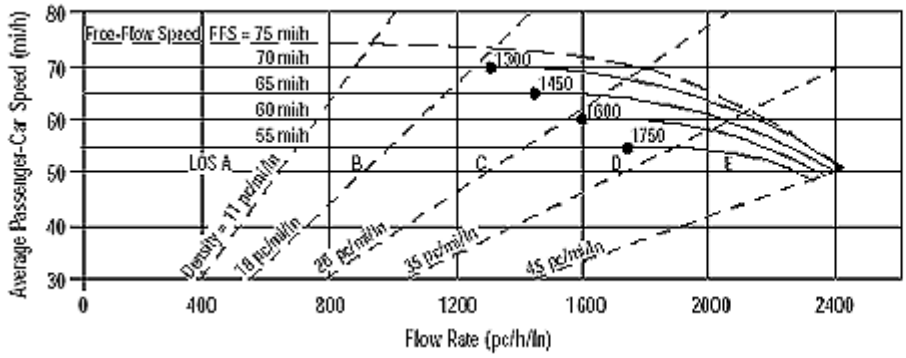
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7105*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2140*	pc/h/ln
S	*58.6*	mi/h
D = v_p / S	*36.5*	pc/mi/ln
LOS	*E*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

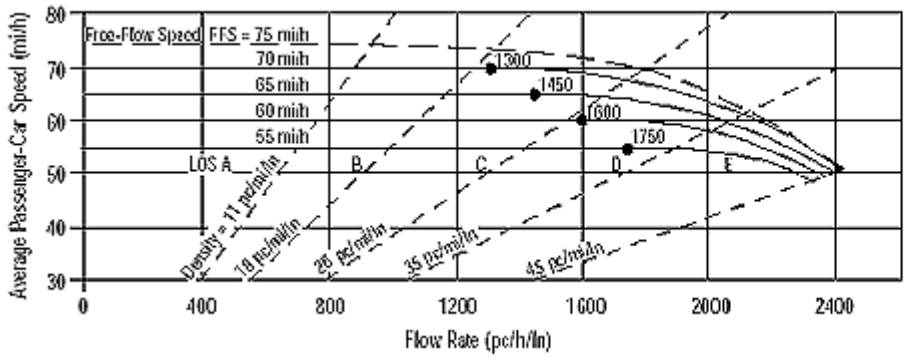
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6465*	veh/h	Peak-Hour Factor, PHF	*0.89*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1934*	pc/h/ln
S	*62.5*	mi/h
D = v_p / S	*31.0*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

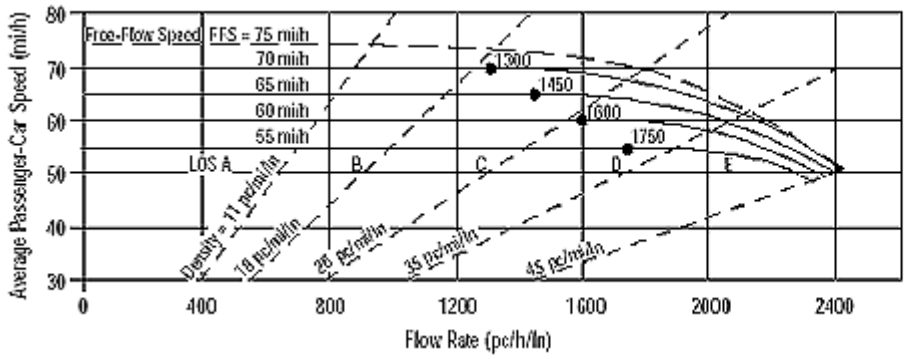
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V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*8470*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

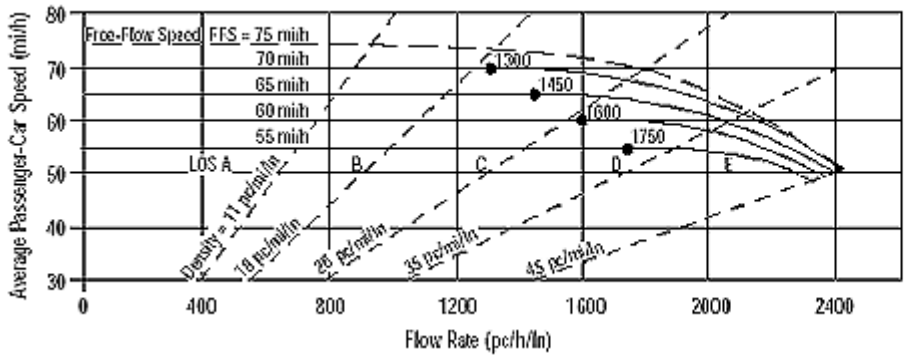
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2417*	pc/h/ln	Design LOS	
S		mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S		pc/mi/ln	S	mi/h
LOS	*F*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6960*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2069*	pc/h/ln
S	*60.2*	mi/h
D = v_p / S	*34.4*	pc/mi/ln
LOS	*D*	

Design (N)		
Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

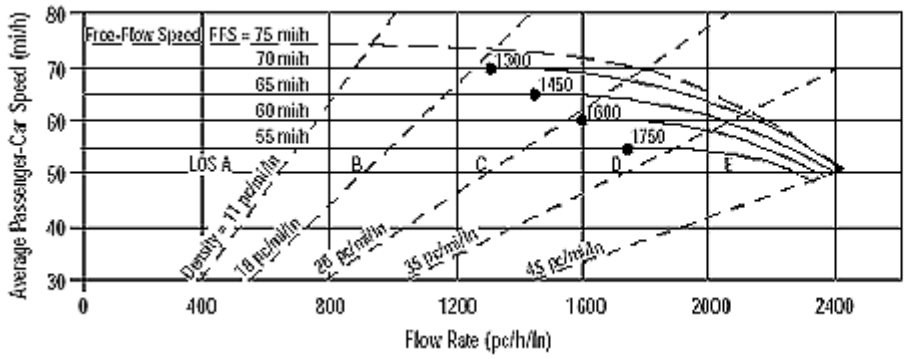
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7005*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2063*	pc/h/ln
S	*60.3*	mi/h
D = v_p / S	*34.2*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

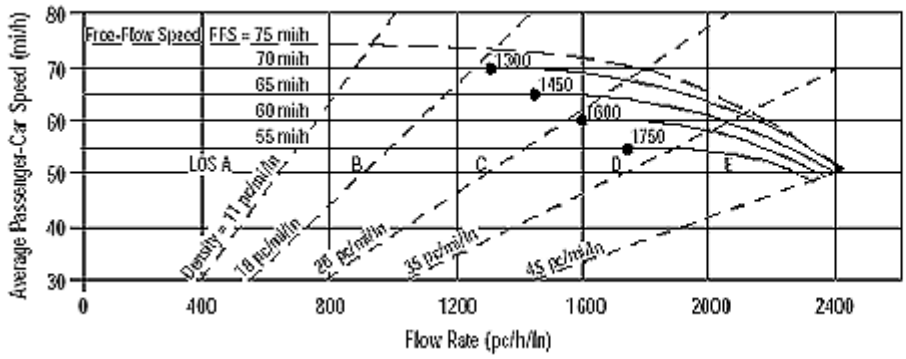
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4730*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1465*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*22.5*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary

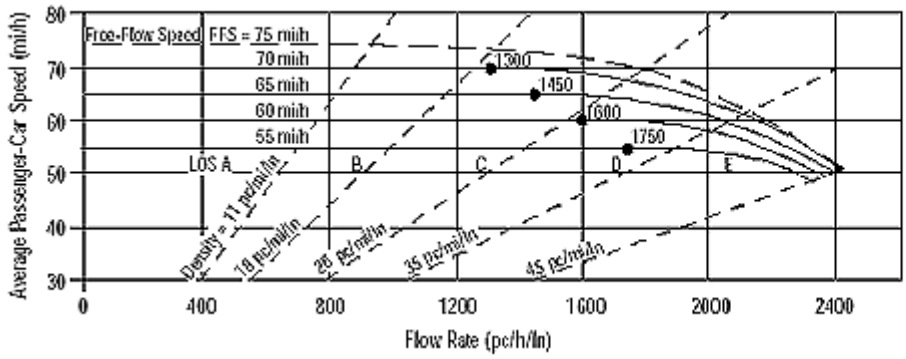
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5420*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*20*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.909*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1694*	pc/h/ln
S	*64.6*	mi/h
D = v_p / S	*26.2*	pc/mi/ln
LOS	*D*	

Design (N)		
Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

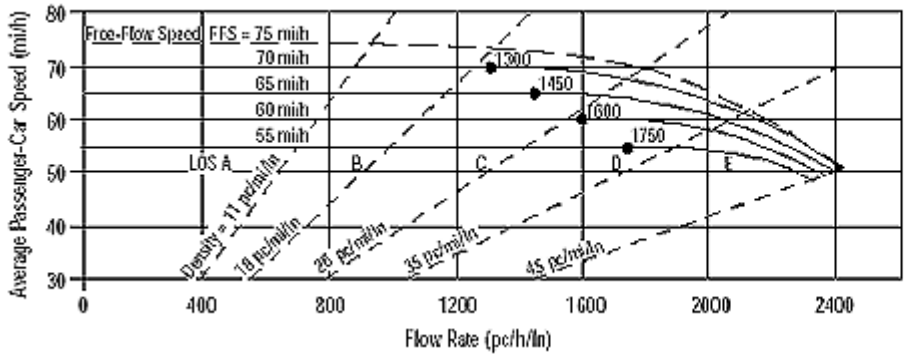
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5460*	veh/h	Peak-Hour Factor, PHF	*0.86*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1698*	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*64.6*	mi/h	S	mi/h
D = v_p / S	*26.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*D*		Required Number of Lanes, N	

Glossary

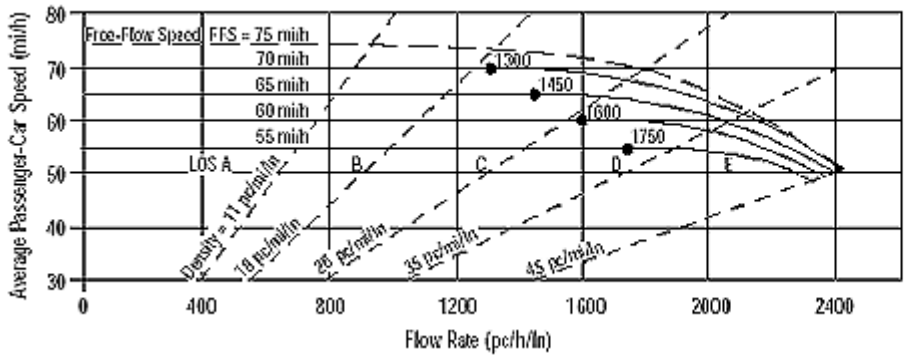
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7105*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2140*	pc/h/ln
S	*58.6*	mi/h
D = v_p / S	*36.5*	pc/mi/ln
LOS	*E*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

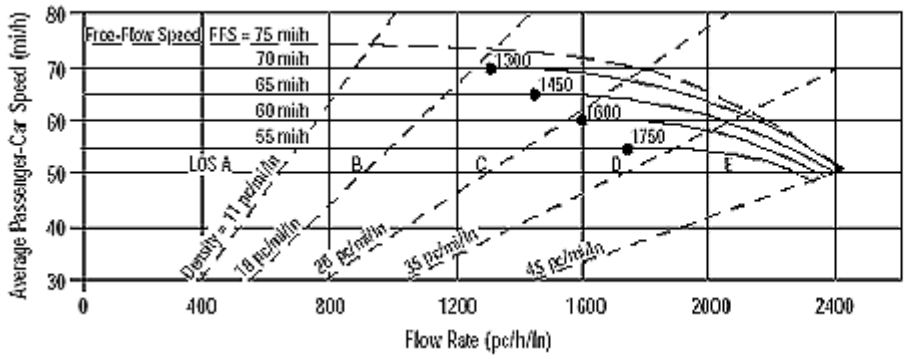
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*6465*	veh/h	Peak-Hour Factor, PHF	*0.89*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1934*	pc/h/ln
S	*62.5*	mi/h
D = v_p / S	*31.0*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

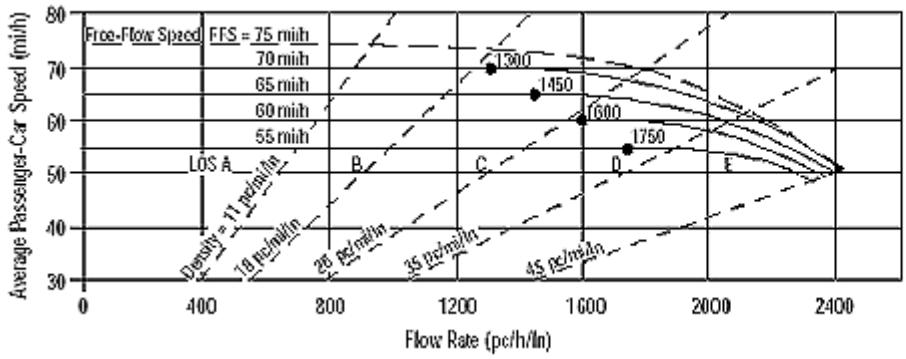
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2035 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*8470*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

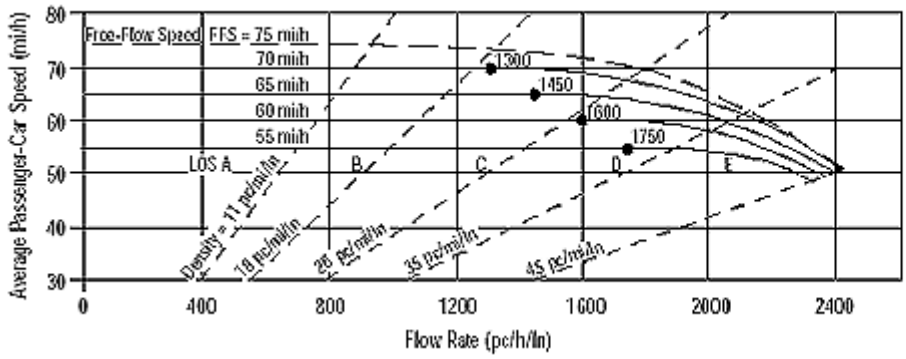
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2417*	pc/h/ln	Design LOS	
S		mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S		pc/mi/ln	S	mi/h
LOS	*F*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5845*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1737*	pc/h/ln
S	*64.3*	mi/h
D = v_p / S	*27.0*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

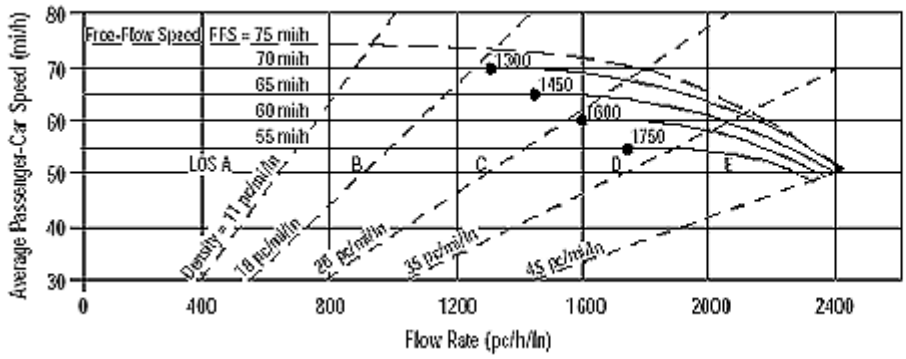
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5725*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

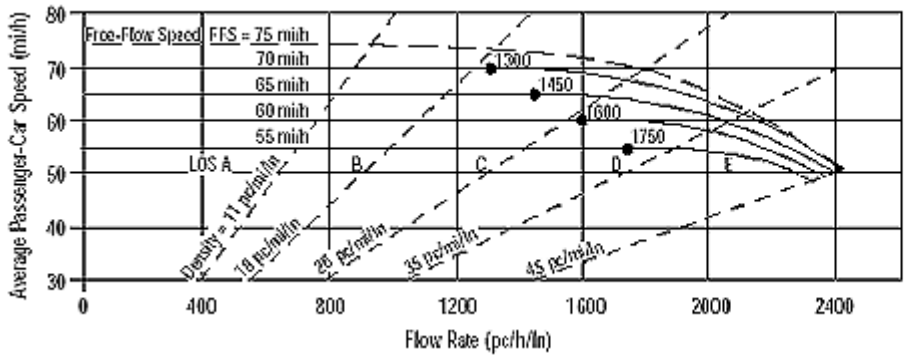
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1686*	pc/h/ln	Design LOS	
S	*64.6*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*26.1*	pc/mi/ln	S	mi/h
LOS	*D*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3850*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

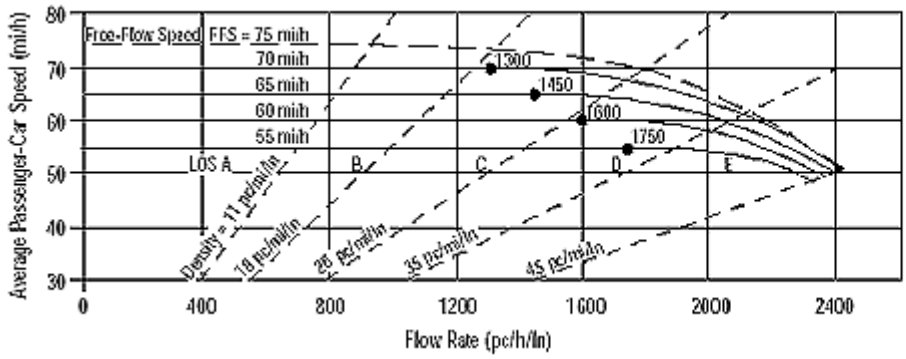
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1192*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*18.3*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3760*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*20*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.909*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1175*	pc/h/ln
S	*65.0*	mi/h
D = v_p / S	*18.1*	pc/mi/ln
LOS	*C*	

Design (N)		
Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

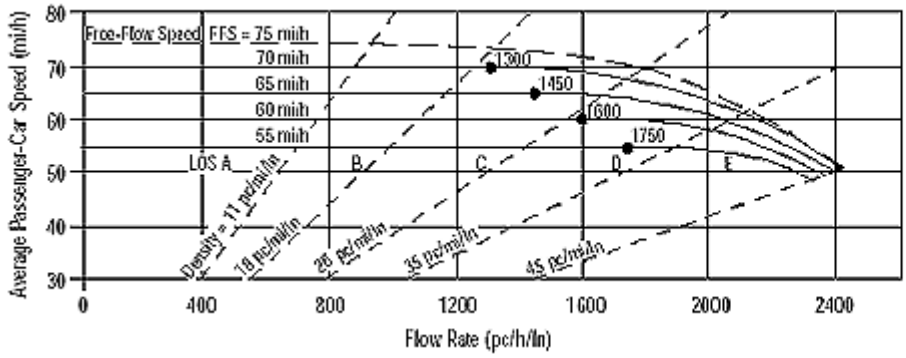
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4250*	veh/h	Peak-Hour Factor, PHF	*0.86*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

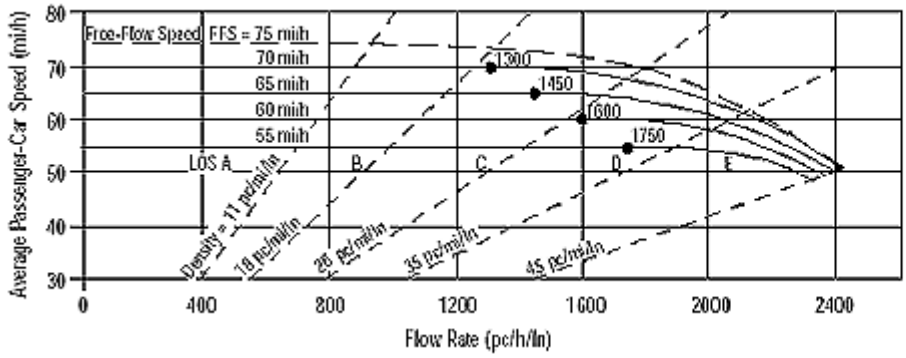
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1322*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*65.0*	mi/h	S	mi/h
D = v_p / S	*20.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5225*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

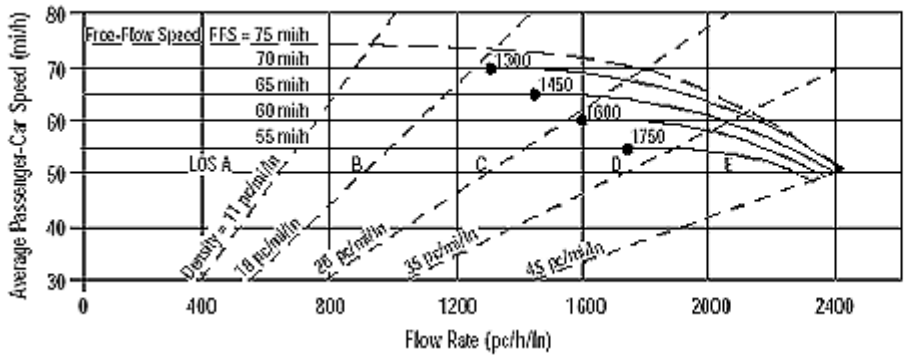
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1573*	pc/h/ln	Design LOS	
S	*64.9*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*24.2*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5455*	veh/h	Peak-Hour Factor, PHF	*0.89*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1632*	pc/h/ln
S	*64.8*	mi/h
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

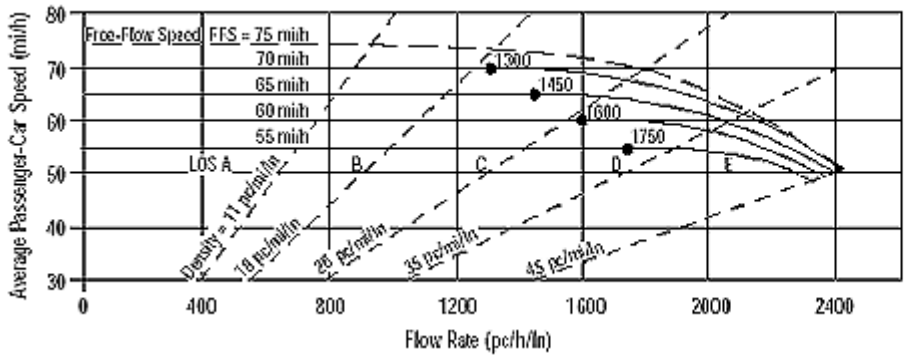
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 No-Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7295*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2081*	pc/h/ln
S	*59.9*	mi/h
D = v_p / S	*34.7*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

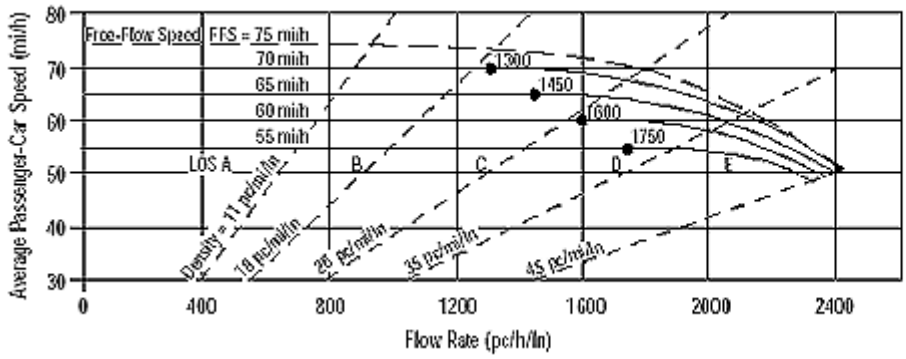
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5845*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1737*	pc/h/ln
S	*64.3*	mi/h
D = v_p / S	*27.0*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

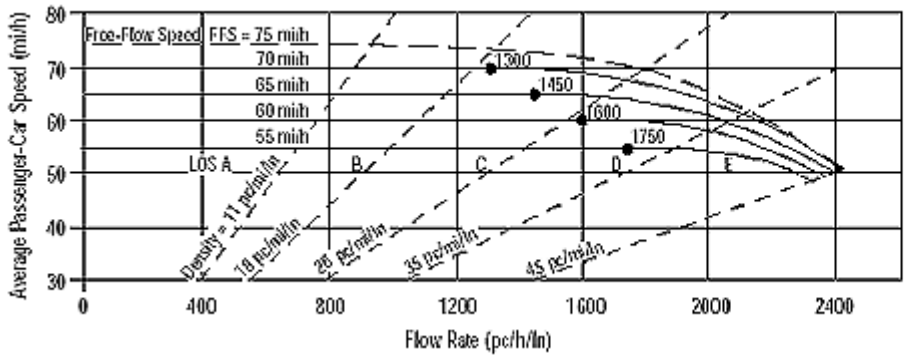
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*NB*
Agency or Company	*Parsons Transportation Group*	From/To	*California Ave to Rosedale Hwy*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5725*	veh/h	Peak-Hour Factor, PHF	*0.90*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

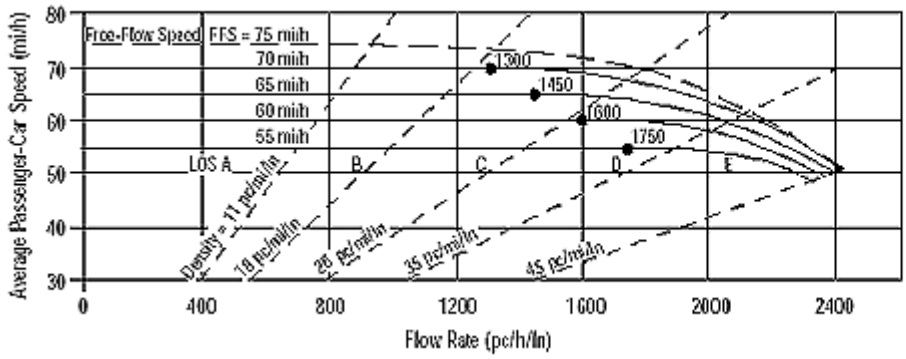
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1686*	pc/h/ln	Design LOS	
S	*64.6*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*26.1*	pc/mi/ln	S	mi/h
LOS	*D*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3850*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*18*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.917*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

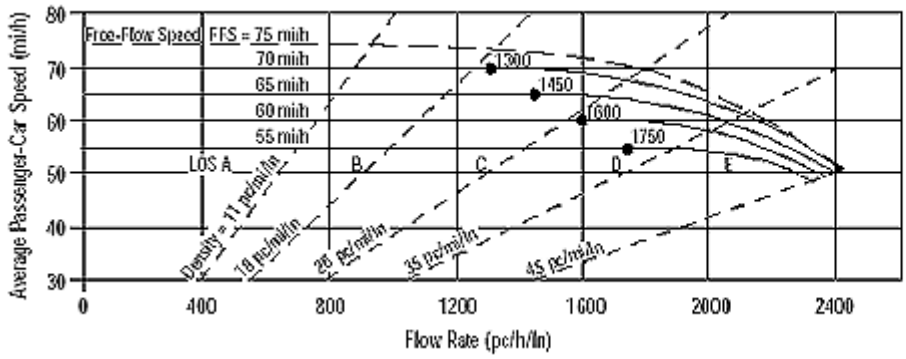
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1192*	pc/h/ln	Design LOS	
S	*65.0*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*18.3*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 NB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Buck Owens On to Airport Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*3760*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*20*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.909*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1175*	pc/h/ln
S	*65.0*	mi/h
D = v_p / S	*18.1*	pc/mi/ln
LOS	*C*	

Design (N)		
Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h
S		mi/h
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

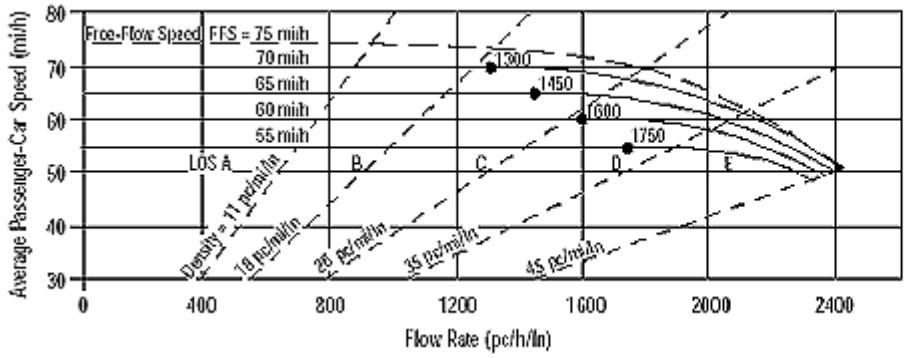
N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*4250*	veh/h	Peak-Hour Factor, PHF	*0.86*
AADT		veh/day	%Trucks and Buses, P_T	*14*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.935*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

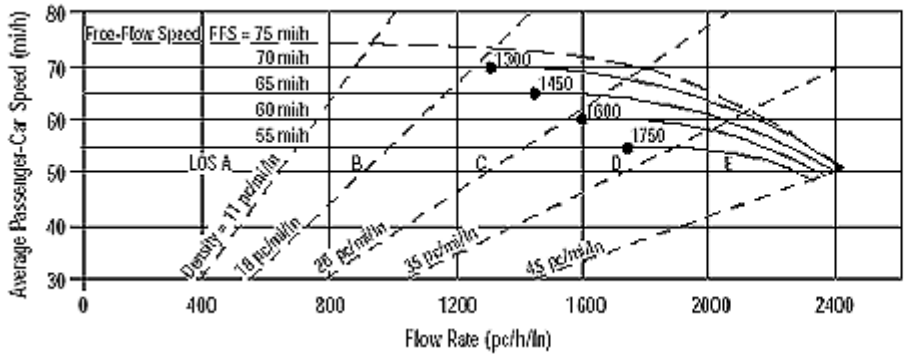
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
			Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1322*	pc/h/ln	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	*65.0*	mi/h	S	mi/h
D = v_p / S	*20.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Airport On to Rosedale Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5225*	veh/h	Peak-Hour Factor, PHF	*0.88*
AADT		veh/day	%Trucks and Buses, P_T	*12*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.943*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	I/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

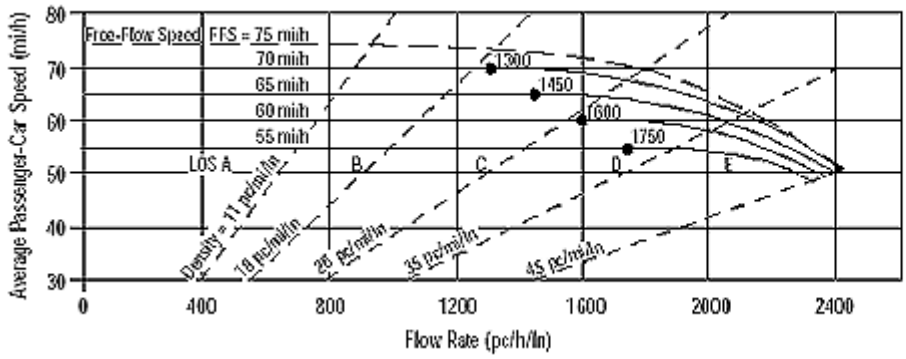
LOS and Performance Measures	**Design (N)**

Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1573*	pc/h/ln	Design LOS	
S	*64.9*	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
D = v_p / S	*24.2*	pc/mi/ln	S	mi/h
LOS	*C*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*AM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*5455*	veh/h	Peak-Hour Factor, PHF	*0.89*
AADT		veh/day	%Trucks and Buses, P_T	*13*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.939*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1632*	pc/h/ln
S	*64.8*	mi/h
D = v_p / S	*25.2*	pc/mi/ln
LOS	*C*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

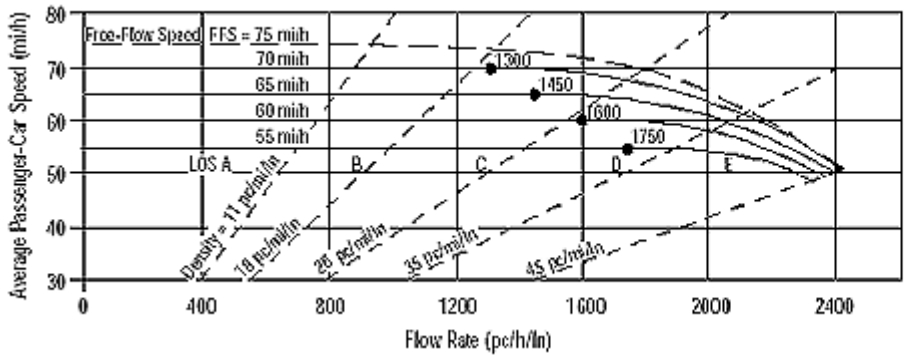
N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	*RP*	Highway/Direction of Travel	*SR-99 SB (Bakersfield)*
Agency or Company	*PTG/TRIP*	From/To	*Rosedale On to California Off*
Date Performed	*4/21/2010*	Jurisdiction	*Caltrans Dist. 6*
Analysis Time Period	*PM Peak*	Analysis Year	*2015 Build*

Project Description 24th Street Widening Project

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs				
Volume, V	*7295*	veh/h	Peak-Hour Factor, PHF	*0.92*
AADT		veh/day	%Trucks and Buses, P_T	*10*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
Driver type adjustment	*1.00*		Up/Down %	

Calculate Flow Adjustments			
f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.952*

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	*12.0*	ft	f_{LW}		mi/h
Rt-Shoulder Lat. Clearance	*6.0*	ft	f_{LC}		mi/h
Interchange Density	*0.50*	l/mi	f_{ID}		mi/h
Number of Lanes, N	*4*		f_N		mi/h
FFS (measured)	*65.0*	mi/h	FFS	*65.0*	mi/h
Base free-flow Speed, BFFS		mi/h			

LOS and Performance Measures	**Design (N)**

Operational (LOS)		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*2081*	pc/h/ln
S	*59.9*	mi/h
D = v_p / S	*34.7*	pc/mi/ln
LOS	*D*	

Design (N)	
Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
DDHV - Directional design hour volume
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed

Factor Location

E_R - Exhibits23-8, 23-10
E_T - Exhibits 23-8, 23-10, 23-11
f_p - Page 23-12
LOS, S, FFS, v_p - Exhibits 23-2, 23-3
f_{LW} - Exhibit 23-4
f_{LC} - Exhibit 23-5
f_N - Exhibit 23-6
f_{ID} - Exhibit 23-7

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Ramp Analysis

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP
Agency or Company	PTG/TRIP
Date Performed	4/21/2010
Analysis Time Period	AM Peak

Site Information

Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Junction	Rosedale Highway Off
Jurisdiction	Caltrans Dist. 6
Analysis Year	Existing (Year 2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 575 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5680	0.92	Level	12	0	0.943	1.00	6544
Ramp	1730	0.90	Level	5	0	0.976	1.00	1970
UpStream								
DownStream	575	0.90	Level	5	0	0.976	1.00	655

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 3964 pc/h
V_3 or V_{av34} 1290 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6544	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4574	Exhibit 25-14	9400	No
V_R	1970	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3964	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 37.1 (pc/mi/ln)

LOS = (Exhibit 25-4)	LOS = E (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-14)	D_s = 0.475 (Exhibit 25-19) S_R= 54.1 mph (Exhibit 25-19) S_0= 70.2 mph (Exhibit 25-19) S = 59.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	Existing (Year 2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 275 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5180	0.92	Level	12	0	0.943	1.00	5968
Ramp	1760	0.90	Level	6	0	0.971	1.00	2014
UpStream								
DownStream	275	0.90	Level	6	0	0.971	1.00	315

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 3738 pc/h
V_3 or V_{av34} 1115 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5968	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3954	Exhibit 25-14	9400	No
V_R	2014	Exhibit 25-3	2100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3738	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 35.1 (pc/mi/ln)

LOS = (Exhibit 25-4)	LOS = E (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-14)	D_s = 0.479 (Exhibit 25-19) S_R= 54.0 mph (Exhibit 25-19) S_0= 70.9 mph (Exhibit 25-19) S = 59.3 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	Existing (Year 2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3950	0.92	Level	15	0	0.930	1.00	4615
Ramp	575	0.84	Level	7	0	0.966	1.00	708
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2411 pc/h

V_3 or V_{av34} 1102 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4615	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3907	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2411	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 23.7 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.622 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 50.7 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 70.9 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.7 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	Existing (Year 2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3420	0.92	Level	15	0	0.930	1.00	3996
Ramp	275	0.88	Level	11	0	0.948	1.00	330
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 1928 pc/h

V_3 or V_{av34} 1034 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3996	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3666	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1928	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 19.6 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = B (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.588 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 51.5 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 71.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 60.1 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	Existing (Year 2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3183	0.86	Level	14	0	0.935	1.00	3960
Ramp	585	0.86	Level	8	0	0.962	1.00	707
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2125 pc/h

V_3 or V_{av34} 917 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3960	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3253	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2125	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 21.3 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.362 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 56.7 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 71.3 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 62.6 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	Existing (Year 2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4795	0.88	Level	12	0	0.943	1.00	5776
Ramp	633	0.92	Level	9	0	0.957	1.00	719
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 2924 pc/h
V_3 or V_{av34} 1426 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5776	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5057	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2924	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 28.1 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.363 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 56.7 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.6 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 62.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	Existing (2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3375	0.86	Level	18	0	0.917	1.00	4278
Ramp	233	0.84	Level	13	0	0.939	1.00	295
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.181 using Equation (Exhibit 25-5)

V_{12} = 774 pc/h

V_3 or V_{av34} 1752 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1711 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4573	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2006	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)			Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$			$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	17.9	(pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	B (Exhibit 25-4)		LOS =	(Exhibit 25-4)
Speed Determination			**Speed Determination**	
M_S =	0.325 (Exibit 25-19)		D_s =	(Exhibit 25-19)
S_R=	57.5	mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.2	mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	60.0	mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	Existing (2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3145	0.89	Level	15	0	0.930	1.00	3799
Ramp	508	0.84	Level	10	0	0.952	1.00	635
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.138 using Equation (Exhibit 25-5)
V_{12} = 526 pc/h
V_3 or V_{av34} 1636 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1519 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4434	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2154	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	18.8 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	B (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.330 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	57.4 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.7 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	60.0 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	Existing (2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 917 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	2598	0.86	Level	15	0	0.930	1.00	3247
Ramp	698	0.86	Level	10	0	0.952	1.00	852
UpStream								
DownStream	917	0.86	Level	8	0	0.962	1.00	1109

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.111 using Equation (Exhibit 25-5)

V_{12} = 361 pc/h

V_3 or V_{av34} 1443 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 1298 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4099	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2150	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 18.5 (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$

D_R = (pc/mi/ln)

LOS = B (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.327 (Exibit 25-19) S_R= 57.5 mph (Exhibit 25-19) S_0= 63.3 mph (Exhibit 25-19) S = 60.1 mph (Exhibit 25-14)	D_s = (Exhibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	Existing (2009)

Project Description 24th Street Project

Site Information

Inputs

Upstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{up} = 1000 ft
V_u = 1191 veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4162	0.88	Level	12	0	0.943	1.00	5013
Ramp	1267	0.88	Level	6	0	0.971	1.00	1483
UpStream	1191	0.88	Level	7	0	0.966	1.00	1401
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.032 using Equation (Exhibit 25-5)

V_{12} = 163 pc/h

V_3 or V_{av34} 2425 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2005 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6496	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3488	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 28.6 (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$

D_R = (pc/mi/ln)

LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.422 (Exibit 25-19) S_R= 55.3 mph (Exhibit 25-19) S_0= 61.4 mph (Exhibit 25-19) S = 58.0 mph (Exhibit 25-14)	D_s = (Exhibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	Existing (2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3296	0.86	Level	14	0	0.935	1.00	4101
Ramp	917	0.86	Level	8	0	0.962	1.00	1109
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.079 using Equation (Exhibit 25-5)
V_{12} = 325 pc/h
V_3 or V_{av34} 1888 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1640 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5210	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2749	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	22.5 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.325 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	57.5 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.4 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.7 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	Existing (2009)

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5429	0.88	Level	11	0	0.948	1.00	6509
Ramp	1191	0.88	Level	7	0	0.966	1.00	1401
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.043 using Equation (Exhibit 25-5)
V_{12} = 278 pc/h
V_3 or V_{av34} 3115 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2603 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7910	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4004	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	32.1 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	D (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.478 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	54.0 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	59.8 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	56.7 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2035 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 700 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6960	0.92	Level	12	0	0.943	1.00	8019
Ramp	2000	0.90	Level	5	0	0.976	1.00	2278
UpStream								
DownStream	700	0.84	Level	7	0	0.966	1.00	862

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$ (Equation 25-2 or 25-3)
L_{EQ} = using Equation (Exhibit 25-5)
P_{FM} = pc/h
V_{12} =
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 25-8 or 25-9)
L_{EQ} =
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 4781 pc/h
V_3 or V_{av34} 1619 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8019	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5741	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}		Exhibit 25-7			V_{12}	4781	Exhibit 25-14	4400:All	Yes

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 44.1 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = F (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.503 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 53.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 68.9 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.8 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2035 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 335 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7005	0.92	Level	12	0	0.943	1.00	8071
Ramp	2100	0.90	Level	6	0	0.971	1.00	2403
UpStream								
DownStream	335	0.88	Level	11	0	0.948	1.00	402

Merge Areas | Diverge Areas

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 4874 pc/h
V_3 or V_{av34} 1598 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks (Merge Areas)

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Capacity Checks (Diverge Areas)

	Actual	Capacity		LOS F?
V_F	8071	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5668	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}		Exhibit 25-7			V_{12}	4874	Exhibit 25-14	4400:All	Yes

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 44.9 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = F (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.514 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 53.2 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.0 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.5 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2035 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4960	0.92	Level	15	0	0.930	1.00	5796
Ramp	700	0.84	Level	7	0	0.966	1.00	863
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 3014 pc/h
V_3 or V_{av34} 1391 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5796	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4933	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3014	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 28.9 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.636 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 50.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.8 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.1 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2035 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4905	0.92	Level	15	0	0.930	1.00	5731
Ramp	335	0.88	Level	11	0	0.948	1.00	402
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2725 pc/h

V_3 or V_{av34} 1503 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5731	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5329	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2725	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 26.4 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.594 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 51.3 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.3 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2035 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5460	0.86	Level	14	0	0.935	1.00	6793
Ramp	1080	0.86	Level	8	0	0.962	1.00	1306
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 3698 pc/h

V_3 or V_{av34} 1547 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6793	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5487	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3698	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 34.8 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.416 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 55.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 61.0 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2035 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7105	0.88	Level	12	0	0.943	1.00	8558
Ramp	1165	0.92	Level	9	0	0.957	1.00	1323
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 4477 pc/h
V_3 or V_{av34} 2040 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8558	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	7235	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4477	Exhibit 25-14	4400:All	Yes

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 41.5 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = E (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.417 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 55.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 67.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 60.5 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2035 No Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4260	0.86	Level	18	0	0.917	1.00	5399
Ramp	470	0.84	Level	13	0	0.939	1.00	596
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.143 using Equation (Exhibit 25-5)
V_{12} = 774 pc/h
V_3 or V_{av34} 2312 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2159 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5995	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2755	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	23.6 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.357 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	56.8 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	61.0 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.0 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2035 No Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4570	0.89	Level	15	0	0.930	1.00	5520
Ramp	850	0.84	Level	10	0	0.952	1.00	1063
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.085 using Equation (Exhibit 25-5)
V_{12} = 469 pc/h
V_3 or V_{av34} 2525 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2208 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6583	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3271	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	27.4 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.399 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	55.8 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	60.8 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	58.2 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2035 No Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 920 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4380	0.86	Level	15	0	0.930	1.00	5475
Ramp	1165	0.86	Level	10	0	0.952	1.00	1422
UpStream								
DownStream	920	0.86	Level	8	0	0.962	1.00	1113

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.040 using Equation (Exhibit 25-5)
V_{12} = 219 pc/h
V_3 or V_{av34} 2628 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2190 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6897	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
V_{FO} = V_F - V_R		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}	3612	Exhibit 25-7	4600:All	No	V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 29.6 (pc/mi/ln)	D_R = (pc/mi/ln)
LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.438 (Exibit 25-19)	D_S = (Exhibit 25-19)
S_R= 54.9 mph (Exhibit 25-19)	S_R= mph (Exhibit 25-19)
S_0= 60.9 mph (Exhibit 25-19)	S_0= mph (Exhibit 25-19)
S = 57.6 mph (Exhibit 25-14)	S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2035 No Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 1250 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5870	0.92	Level	12	0	0.943	1.00	6763
Ramp	1350	0.90	Level	6	0	0.971	1.00	1545
UpStream								
DownStream	1250	0.88	Level	7	0	0.966	1.00	1470

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.025 using Equation (Exhibit 25-5)
V_{12} = 167 pc/h
V_3 or V_{av34} 3298 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2705 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8308	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
V_{FO} = V_F - V_R		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}	4250	Exhibit 25-7	4600:All	No	V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 34.5 (pc/mi/ln)	D_R = (pc/mi/ln)
LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.567 (Exibit 25-19)	D_s = (Exhibit 25-19)
S_R= 51.9 mph (Exhibit 25-19)	S_R= mph (Exhibit 25-19)
S_0= 59.5 mph (Exhibit 25-19)	S_0= mph (Exhibit 25-19)
S = 55.4 mph (Exhibit 25-14)	S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2035 No Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5545	0.86	Level	14	0	0.935	1.00	6899
Ramp	920	0.86	Level	8	0	0.962	1.00	1113
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.079 using Equation (Exhibit 25-5)
V_{12} = 543 pc/h
V_3 or V_{av34} 3178 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2759 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8012	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3872	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	31.2 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	D (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.452 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	54.6 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	59.3 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	57.0 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2035 No Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7220	0.88	Level	11	0	0.948	1.00	8656
Ramp	1250	0.88	Level	7	0	0.966	1.00	1470
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.034 using Equation (Exhibit 25-5)
V_{12} = 295 pc/h
V_3 or V_{av34} 4180 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 3462 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	10126	Exhibit 25-7		Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4932	Exhibit 25-7	4600:All	Yes

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	39.3 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	F (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		**Speed Determination**	
M_S =	0.805 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	46.5 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	56.7 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	51.2 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 700 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	6960	0.92	Level	12	0	0.943	1.00	8019
Ramp	2000	0.90	Level	5	0	0.976	1.00	2278
UpStream								
DownStream	700	0.84	Level	7	0	0.966	1.00	862

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$ (Equation 25-2 or 25-3)
L_{EQ} =
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 25-8 or 25-9)
L_{EQ} =
P_{FD} = 0.260 using Equation (Exhibit 25-12)
V_{12} = 3771 pc/h
V_3 or V_{av34} 2124 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8019	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5741	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}		Exhibit 25-7			V_{12}	3771	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 22.5 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.503 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 53.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 66.9 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.8 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 335 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7005	0.92	Level	12	0	0.943	1.00	8071
Ramp	2100	0.90	Level	6	0	0.971	1.00	2403
UpStream								
DownStream	335	0.88	Level	11	0	0.948	1.00	402

Merge Areas | Diverge Areas

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$ (Equation 25-2 or 25-3)
L_{EQ} = using Equation (Exhibit 25-5)
P_{FM} =
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 25-8 or 25-9)
L_{EQ} =
P_{FD} = 0.260 using Equation (Exhibit 25-12)
V_{12} = 3877 pc/h
V_3 or V_{av34} 2097 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks (Merge Areas)

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Capacity Checks (Diverge Areas)

	Actual	Capacity		LOS F?
V_F	8071	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5668	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}		Exhibit 25-7			V_{12}	3877	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 23.4 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.514 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 53.2 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 67.0 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.6 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4960	0.92	Level	15	0	0.930	1.00	5796
Ramp	700	0.84	Level	7	0	0.966	1.00	863
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 3014 pc/h

V_3 or V_{av34} 1391 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5796	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4933	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3014	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 28.9 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.636 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 50.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.8 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.1 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4905	0.92	Level	15	0	0.930	1.00	5731
Ramp	335	0.88	Level	11	0	0.948	1.00	402
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2725 pc/h

V_3 or V_{av34} 1503 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5731	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5329	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2725	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 26.4 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.594 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 51.3 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.3 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5460	0.86	Level	14	0	0.935	1.00	6793
Ramp	1080	0.86	Level	8	0	0.962	1.00	1306
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 3698 pc/h

V_3 or V_{av34} 1547 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6793	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5487	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3698	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 34.8 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.416 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 55.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 61.0 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7105	0.88	Level	12	0	0.943	1.00	8558
Ramp	1165	0.92	Level	9	0	0.957	1.00	1323
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 4477 pc/h

V_3 or V_{av34} 2040 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8558	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	7235	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4477	Exhibit 25-14	4400:All	Yes

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 41.5 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = E (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.417 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 55.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 67.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 60.5 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4260	0.86	Level	18	0	0.917	1.00	5399
Ramp	470	0.84	Level	13	0	0.939	1.00	596
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.143 using Equation (Exhibit 25-5)

V_{12} = 774 pc/h

V_3 or V_{av34} 2312 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2159 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5995	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2755	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	23.6 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.357 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	56.8 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	61.0 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.0 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4570	0.89	Level	15	0	0.930	1.00	5520
Ramp	850	0.84	Level	10	0	0.952	1.00	1063
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.085 using Equation (Exhibit 25-5)
V_{12} = 469 pc/h
V_3 or V_{av34} 2525 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2208 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6583	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3271	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	27.4 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.399 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	55.8 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	60.8 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	58.2 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 920 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4380	0.86	Level	15	0	0.930	1.00	5475
Ramp	1165	0.86	Level	10	0	0.952	1.00	1422
UpStream								
DownStream	920	0.86	Level	8	0	0.962	1.00	1113

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.040 using Equation (Exhibit 25-5)
V_{12} = 219 pc/h
V_3 or V_{av34} 2628 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2190 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6897	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
V_{FO} = V_F - V_R		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}	3612	Exhibit 25-7	4600:All	No	V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 29.6 (pc/mi/ln)	D_R = (pc/mi/ln)
LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.438 (Exibit 25-19)	D_s = (Exhibit 25-19)
S_R= 54.9 mph (Exhibit 25-19)	S_R= mph (Exhibit 25-19)
S_0= 60.9 mph (Exhibit 25-19)	S_0= mph (Exhibit 25-19)
S = 57.6 mph (Exhibit 25-14)	S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 1250 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5870	0.92	Level	12	0	0.943	1.00	6763
Ramp	1350	0.90	Level	6	0	0.971	1.00	1545
UpStream								
DownStream	1250	0.88	Level	7	0	0.966	1.00	1470

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.025 using Equation (Exhibit 25-5)
V_{12} = 167 pc/h
V_3 or V_{av34} 3298 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2705 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8308	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
V_{FO} = V_F - V_R		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}	4250	Exhibit 25-7	4600:All	No	V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 34.5 (pc/mi/ln)	D_R = (pc/mi/ln)
LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.567 (Exibit 25-19)	D_s = (Exhibit 25-19)
S_R= 51.9 mph (Exhibit 25-19)	S_R= mph (Exhibit 25-19)
S_0= 59.5 mph (Exhibit 25-19)	S_0= mph (Exhibit 25-19)
S = 55.4 mph (Exhibit 25-14)	S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5545	0.86	Level	14	0	0.935	1.00	6899
Ramp	920	0.86	Level	8	0	0.962	1.00	1113
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.079 using Equation (Exhibit 25-5)
V_{12} = 543 pc/h
V_3 or V_{av34} 3178 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2759 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8012	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3872	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	31.2 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	D (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.452 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	54.6 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	59.3 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	57.0 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2035 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	7220	0.88	Level	11	0	0.948	1.00	8656
Ramp	1250	0.88	Level	7	0	0.966	1.00	1470
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.034 using Equation (Exhibit 25-5)
V_{12} = 295 pc/h
V_3 or V_{av34} 4180 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 3462 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	10126	Exhibit 25-7		Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4932	Exhibit 25-7	4600:All	Yes

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	39.3 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	F (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		**Speed Determination**	
M_S =	0.805 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	46.5 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	56.7 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	51.2 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 650 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5845	0.92	Level	12	0	0.943	1.00	6734
Ramp	2050	0.90	Level	5	0	0.976	1.00	2335
UpStream								
DownStream	650	0.84	Level	7	0	0.966	1.00	801

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 4253 pc/h
V_3 or V_{av34} 1240 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6734	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4399	Exhibit 25-14	9400	No
V_R	2335	Exhibit 25-3	2100	Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4253	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 39.6 (pc/mi/ln)

LOS = (Exhibit 25-4)	LOS = F (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-14)	D_s = 0.508 (Exhibit 25-19) S_R= 53.3 mph (Exhibit 25-19) S_0= 70.4 mph (Exhibit 25-19) S = 58.5 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 320 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5725	0.92	Level	12	0	0.943	1.00	6596
Ramp	2265	0.90	Level	6	0	0.971	1.00	2592
UpStream								
DownStream	320	0.88	Level	11	0	0.948	1.00	384

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 4338 pc/h
V_3 or V_{av34} 1129 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6596	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4004	Exhibit 25-14	9400	No
V_R	2592	Exhibit 25-3	2100	Yes

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4338	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 40.3 (pc/mi/ln)

LOS = (Exhibit 25-4)	LOS = F (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-14)	D_s = 0.531 (Exhibit 25-19) S_R= 52.8 mph (Exhibit 25-19) S_0= 70.8 mph (Exhibit 25-19) S = 57.8 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3795	0.92	Level	15	0	0.930	1.00	4434
Ramp	650	0.84	Level	7	0	0.966	1.00	801
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 2385 pc/h
V_3 or V_{av34} 1024 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4434	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3633	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2385	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 23.5 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.630 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 50.5 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 71.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.3 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3460	0.92	Level	15	0	0.930	1.00	4043
Ramp	320	0.88	Level	11	0	0.948	1.00	384
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 1979 pc/h

V_3 or V_{av34} 1032 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4043	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3659	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1979	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 20.0 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.593 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 51.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 71.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.9 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4250	0.86	Level	14	0	0.935	1.00	5288
Ramp	715	0.86	Level	8	0	0.962	1.00	865
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2793 pc/h

V_3 or V_{av34} 1247 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5288	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4423	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2793	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 27.0 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.376 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 56.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 70.3 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 62.2 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5225	0.88	Level	12	0	0.943	1.00	6294
Ramp	880	0.92	Level	9	0	0.957	1.00	1000
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 3308 pc/h
V_3 or V_{av34} 1493 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6294	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5294	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3308	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 31.4 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.388 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 56.1 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.4 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 61.7 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3145	0.86	Level	18	0	0.917	1.00	3986
Ramp	705	0.84	Level	13	0	0.939	1.00	894
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.106 using Equation (Exhibit 25-5)
V_{12} = 423 pc/h
V_3 or V_{av34} 1781 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1594 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4880	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2488	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	21.3 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.343 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	57.1 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.5 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.6 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3140	0.89	Level	15	0	0.930	1.00	3793
Ramp	620	0.84	Level	10	0	0.952	1.00	775
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.121 using Equation (Exhibit 25-5)
V_{12} = 459 pc/h
V_3 or V_{av34} 1667 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1517 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4568	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2292	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	19.9 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	B (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.335 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	57.3 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.7 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.9 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 1075 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3535	0.86	Level	15	0	0.930	1.00	4419
Ramp	845	0.86	Level	10	0	0.952	1.00	1032
UpStream								
DownStream	1075	0.86	Level	8	0	0.962	1.00	1300

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.089 using Equation (Exhibit 25-5)
V_{12} = 392 pc/h
V_3 or V_{av34} 2013 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1767 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5451	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2799	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = 23.4 (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)

LOS = C (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.358 (Exibit 25-19) S_R= 56.8 mph (Exhibit 25-19) S_0= 62.0 mph (Exhibit 25-19) S = 59.2 mph (Exhibit 25-14)	D_s = (Exhibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 1525 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4345	0.88	Level	12	0	0.943	1.00	5234
Ramp	1425	0.88	Level	6	0	0.971	1.00	1668
UpStream								
DownStream	1525	0.88	Level	7	0	0.966	1.00	1794

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.009 using Equation (Exhibit 25-5)

V_{12} = 49 pc/h

V_3 or V_{av34} 2592 pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes,V_{12a} = 2093 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6902	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3761	Exhibit 25-7	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 30.7 (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation (Exhibit 25-12)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		
V_R		Exhibit 25-3		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$

D_R = (pc/mi/ln)

LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.462 (Exibit 25-19) S_R= 54.4 mph (Exhibit 25-19) S_0= 61.1 mph (Exhibit 25-19) S = 57.3 mph (Exhibit 25-14)	D_s = (Exhibit 25-19) S_R= mph (Exhibit 25-19) S_0= mph (Exhibit 25-19) S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4380	0.86	Level	14	0	0.935	1.00	5450
Ramp	1075	0.86	Level	8	0	0.962	1.00	1300
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.055 using Equation (Exhibit 25-5)
V_{12} = 301 pc/h
V_3 or V_{av34} 2574 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2180 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6750	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3480	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	28.1 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	D (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.391 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	56.0 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	60.9 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	58.3 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2015 No-Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5770	0.88	Level	11	0	0.948	1.00	6917
Ramp	1525	0.88	Level	7	0	0.966	1.00	1794
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = -0.006 using Equation (Exhibit 25-5)
V_{12} = -44 pc/h
V_3 or V_{av34} 3480 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2766 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8711	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4560	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	36.3 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	E (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.637 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	50.3 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	59.3 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	54.3 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{down} = 1150 ft
V_D = 650 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5845	0.92	Level	12	0	0.943	1.00	6734
Ramp	2050	0.90	Level	5	0	0.976	1.00	2335
UpStream								
DownStream	650	0.84	Level	7	0	0.966	1.00	801

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
D_R = (pc/mi/ln)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.260 using Equation (Exhibit 25-12)
V_{12} = 3479 pc/h
V_3 or V_{av34} 1627 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6734	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4399	Exhibit 25-14	9400	No
V_R	2335	Exhibit 25-3	4100	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3479	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 20.0 (pc/mi/ln)

LOS = (Exhibit 25-4)	LOS = B (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.508 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 53.3 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 68.9 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.8 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2015 Build

Project Description: 24th Street Project

Inputs

Upstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
L_{up} = 1000 ft
V_u = 320 veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5725	0.92	Level	12	0	0.943	1.00	6596
Ramp	2265	0.90	Level	6	0	0.971	1.00	2592
UpStream	320	0.88	Level	11	0	0.948	1.00	384
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.260 using Equation (Exhibit 25-12)

V_{12} = 3633 pc/h

V_3 or V_{av34} 1481 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6596	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4004	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3633	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 21.3 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.531 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 52.8 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.4 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.2 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3795	0.92	Level	15	0	0.930	1.00	4434
Ramp	650	0.84	Level	7	0	0.966	1.00	801
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2385 pc/h

V_3 or V_{av34} 1024 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4434	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3633	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2385	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 23.5 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.630 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 50.5 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 71.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 58.3 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3460	0.92	Level	15	0	0.930	1.00	4043
Ramp	320	0.88	Level	11	0	0.948	1.00	384
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 1979 pc/h

V_3 or V_{av34} 1032 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4043	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	3659	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1979	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 20.0 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.593 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 51.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 71.2 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 59.9 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	AM Peak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4250	0.86	Level	14	0	0.935	1.00	5288
Ramp	715	0.86	Level	8	0	0.962	1.00	865
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = using Equation (Exhibit 25-5)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 0.436 using Equation (Exhibit 25-12)

V_{12} = 2793 pc/h

V_3 or V_{av34} 1247 pc/h (Equation 25-15 or 25-16)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5288	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	4423	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2793	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 27.0 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = C (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.376 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 56.4 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 70.3 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 62.2 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale Highway Off
Date Performed	4/21/2010	Jurisdiction	Caltrans Dist. 6
Analysis Time Period	PM Peak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5225	0.88	Level	12	0	0.943	1.00	6294
Ramp	880	0.92	Level	9	0	0.957	1.00	1000
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = using Equation (Exhibit 25-5)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 25-7		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 25-7		

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = 0.436 using Equation (Exhibit 25-12)
V_{12} = 3308 pc/h
V_3 or V_{av34} 1493 pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6294	Exhibit 25-14	9400	No
$V_{FO} = V_F - V_R$	5294	Exhibit 25-14	9400	No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3308	Exhibit 25-14	4400:All	No

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = (pc/mi/ln)	D_R = 31.4 (pc/mi/ln)
LOS = (Exhibit 25-4)	LOS = D (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = (Exibit 25-19)	D_s = 0.388 (Exhibit 25-19)
S_R= mph (Exhibit 25-19)	S_R= 56.1 mph (Exhibit 25-19)
S_0= mph (Exhibit 25-19)	S_0= 69.4 mph (Exhibit 25-19)
S = mph (Exhibit 25-14)	S = 61.7 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3145	0.86	Level	18	0	0.917	1.00	3986
Ramp	705	0.84	Level	13	0	0.939	1.00	894
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.106 using Equation (Exhibit 25-5)
V_{12} = 423 pc/h
V_3 or V_{av34} 1781 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1594 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4880	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2488	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	21.3 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.343 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	57.1 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.5 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.6 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 NB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Buck-Owens On
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3140	0.89	Level	15	0	0.930	1.00	3793
Ramp	620	0.84	Level	10	0	0.952	1.00	775
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.121 using Equation (Exhibit 25-5)
V_{12} = 459 pc/h
V_3 or V_{av34} 1667 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1517 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4568	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2292	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	19.9 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	B (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.335 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	57.3 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.7 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.9 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 1075 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	3535	0.86	Level	15	0	0.930	1.00	4419
Ramp	845	0.86	Level	10	0	0.952	1.00	1032
UpStream								
DownStream	1075	0.86	Level	8	0	0.962	1.00	1300

Merge Areas | Diverge Areas

Estimation of v_{12} (Merge Areas)

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.089 using Equation (Exhibit 25-5)
V_{12} = 392 pc/h
V_3 or V_{av34} 2013 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 1767 pc/h (Equation 25-8)

Estimation of v_{12} (Diverge Areas)

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks (Merge Areas)

	Actual	Capacity		LOS F?
V_{FO}	5451	Exhibit 25-7		No

Capacity Checks (Diverge Areas)

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area (Merge Areas)

	Actual	Max Desirable		Violation?
V_{R12}	2799	Exhibit 25-7	4600:All	No

Flow Entering Merge Influence Area (Diverge Areas)

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	23.4 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	C (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		**Speed Determination**	
M_S =	0.358 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	56.8 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	62.0 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	59.2 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Loop)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 25.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
L_{down} = 1000 ft
V_D = 620 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4345	0.88	Level	12	0	0.943	1.00	5234
Ramp	1425	0.88	Level	6	0	0.971	1.00	1668
UpStream								
DownStream	620	0.84	Level	10	0	0.952	1.00	775

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.009 using Equation (Exhibit 25-5)
V_{12} = 49 pc/h
V_3 or V_{av34} 2592 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2093 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6902	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
V_{FO} = V_F - V_R		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?

V_{R12}	3761	Exhibit 25-7	4600:All	No	V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)	***Level of Service Determination (if not F)***
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$	$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$
D_R = 30.7 (pc/mi/ln)	D_R = (pc/mi/ln)
LOS = D (Exhibit 25-4)	LOS = (Exhibit 25-4)
Speed Determination	***Speed Determination***
M_S = 0.462 (Exibit 25-19)	D_S = (Exhibit 25-19)
S_R= 54.4 mph (Exhibit 25-19)	S_R= mph (Exhibit 25-19)
S_0= 61.1 mph (Exhibit 25-19)	S_0= mph (Exhibit 25-19)
S = 57.3 mph (Exhibit 25-14)	S = mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	AMPeak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	4380	0.86	Level	14	0	0.935	1.00	5450
Ramp	1075	0.86	Level	8	0	0.962	1.00	1300
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = 0.055 using Equation (Exhibit 25-5)
V_{12} = 301 pc/h
V_3 or V_{av34} 2574 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2180 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6750	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3480	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	28.1 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	D (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.391 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	56.0 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	60.9 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	58.3 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	RP	Freeway/Dir of Travel	SR-99 SB (Bakersfield)
Agency or Company	PTG/TRIP	Junction	Rosedale On (Dia)
Date Performed	4/21/2010	Jurisdiction	Caltrans District 6
Analysis Time Period	PMPeak	Analysis Year	2015 Build

Project Description 24th Street Project

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Terrain: Level

S_{FF} = 65.0 mph S_{FR} = 45.0 mph
Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	v = V/PHF x f_{HV} x f_p
Freeway	5770	0.88	Level	11	0	0.948	1.00	6917
Ramp	1525	0.88	Level	7	0	0.966	1.00	1794
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$
L_{EQ} = (Equation 25-2 or 25-3)
P_{FM} = -0.006 using Equation (Exhibit 25-5)
V_{12} = -44 pc/h
V_3 or V_{av34} 3480 pc/h (Equation 25-4 or 25-5)
Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No
If Yes,V_{12a} = 2766 pc/h (Equation 25-8)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8711	Exhibit 25-7		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4560	Exhibit 25-7	4600:All	No

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$
L_{EQ} = (Equation 25-8 or 25-9)
P_{FD} = using Equation (Exhibit 25-12)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 25-15 or 25-16)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes,V_{12a} = pc/h (Equation 25-18)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 25-14		
$V_{FO} = V_F - V_R$		Exhibit 25-14		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 25-14		

Level of Service Determination (if not F)		Level of Service Determination (if not F)	
$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$		$D_R = 4.252 + 0.0086\ V_{12} - 0.0009\ L_D$	
D_R =	36.3 (pc/mi/ln)	D_R =	(pc/mi/ln)
LOS =	E (Exhibit 25-4)	LOS =	(Exhibit 25-4)
Speed Determination		***Speed Determination***	
M_S =	0.637 (Exibit 25-19)	D_s =	(Exhibit 25-19)
S_R=	50.3 mph (Exhibit 25-19)	S_R=	mph (Exhibit 25-19)
S_0=	59.3 mph (Exhibit 25-19)	S_0=	mph (Exhibit 25-19)
S =	54.3 mph (Exhibit 25-14)	S =	mph (Exhibit 25-15)

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APPENDIX E
Queue Analysis Sheets

Existing Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	64	2535	182	1948	84	21	172	38	43	40
v/c Ratio	0.56	0.80	0.64	0.64	0.08	0.13	1.12	0.30	0.34	0.26
Control Delay	59.7	8.7	75.6	7.9	1.3	59.4	165.0	65.5	66.8	20.1
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	8.7	75.6	8.0	1.3	59.4	165.0	65.5	66.8	20.1
Queue Length 50th (ft)	61	52	0	220	3	18	~180	35	41	0
Queue Length 95th (ft)	m90	846	m100	m275	m9	46	#333	63	70	29
Internal Link Dist (ft)		630		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	125	3157	342	3062	1056	165	153	231	234	250
Starvation Cap Reductn	0	35	0	170	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.81	0.53	0.67	0.08	0.13	1.12	0.16	0.18	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	2070	703	1820	831	329	368
v/c Ratio	0.57	0.55	0.46	0.57	1.38	1.70
Control Delay	0.7	2.4	2.1	12.9	239.3	367.6
Queue Delay	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	1.1	2.4	2.1	12.9	239.3	367.6
Queue Length 50th (ft)	0	0	57	459	~397	~491
Queue Length 95th (ft)	m0	m13	m72	m528	#537	#634
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	3663	1286	3948	1468	238	217
Starvation Cap Reductn	954	0	0	0	0	0
Spillback Cap Reductn	0	0	1	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.55	0.46	0.57	1.38	1.70

Intersection Summary

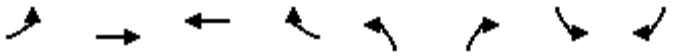
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	357	249	72	68	8	149	491	30	332
v/c Ratio	0.75	0.49	0.39	0.37	0.05	0.47	0.34	0.27	0.28
Control Delay	39.7	28.3	46.4	46.1	22.7	46.7	16.1	51.6	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	28.3	46.4	46.1	22.7	46.7	16.1	51.6	23.6
Queue Length 50th (ft)	188	111	42	38	0	42	72	17	68
Queue Length 95th (ft)	304	192	93	89	14	85	146	51	130
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	638	676	413	406	338	348	1449	124	1185
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.37	0.17	0.17	0.02	0.43	0.34	0.24	0.28

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	327	1580	1435	485	1071	1091	174	282
v/c Ratio	0.77	0.66	0.86	0.41	1.13	0.69	0.12	0.76
Control Delay	75.3	34.1	53.0	7.7	117.1	2.5	23.3	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	34.1	53.0	7.7	117.1	2.5	23.3	37.2
Queue Length 50th (ft)	170	547	454	178	~581	0	46	114
Queue Length 95th (ft)	m208	m569	440	208	#585	0	69	164
Internal Link Dist (ft)		758	703					
Turn Bay Length (ft)	280			500	700		400	
Base Capacity (vph)	426	2378	1660	1193	947	1583	1489	392
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.66	0.86	0.41	1.13	0.69	0.12	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

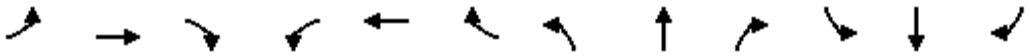
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	20	2247	517	577	1369	157	168	479	32	17
v/c Ratio	0.26	1.11	0.51	1.01	0.54	0.87	0.92	0.97	0.40	0.22
Control Delay	83.1	74.0	2.9	98.1	10.6	100.0	108.8	72.0	79.9	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.1	74.0	2.9	98.1	10.6	100.0	108.8	72.0	79.9	32.2
Queue Length 50th (ft)	19	~1271	0	~279	317	150	162	337	29	0
Queue Length 95th (ft)	m29	#1312	5	#388	361	#289	#310	#456	66	26
Internal Link Dist (ft)		724			337		1021		431	
Turn Bay Length (ft)	200			300				280		50
Base Capacity (vph)	77	2020	1006	570	2537	181	183	493	80	78
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.11	0.51	1.01	0.54	0.87	0.92	0.97	0.40	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	772	1303	212	144	331	38	421	620	511	88	281	434
v/c Ratio	0.92	1.07	0.36	0.58	0.62	0.15	0.78	0.49	0.84	0.41	0.32	0.57
Control Delay	55.8	80.7	21.5	56.8	47.7	34.6	53.7	29.1	44.2	51.2	33.3	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.8	80.7	21.5	56.8	47.7	34.6	53.7	29.1	44.2	51.2	33.3	12.0
Queue Length 50th (ft)	263	~527	81	50	115	20	145	179	306	31	93	42
Queue Length 95th (ft)	#317	#487	113	81	152	47	178	223	#471	56	137	211
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	170		175	275		275	160			125		125
Base Capacity (vph)	835	1219	588	294	724	332	683	1271	606	224	867	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	1.07	0.36	0.49	0.46	0.11	0.62	0.49	0.84	0.39	0.32	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2016	57	306	500
v/c Ratio	0.71	0.41	0.25	0.59
Control Delay	3.5	40.4	25.7	32.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.5	40.4	25.7	32.8
Queue Length 50th (ft)	29	32	76	127
Queue Length 95th (ft)	36	m50	m96	181
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2824	173	1207	841
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.33	0.25	0.59

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2229	74	231	124
v/c Ratio	0.78	0.18	0.37	0.11
Control Delay	3.8	19.1	22.0	19.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.8	19.1	22.0	19.1
Queue Length 50th (ft)	34	37	121	23
Queue Length 95th (ft)	41	m67	m177	40
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	2872	422	627	1143
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	0.18	0.37	0.11

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2214	75	480	432	62
v/c Ratio	0.79	0.49	0.39	0.50	0.15
Control Delay	5.0	62.2	13.0	32.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	62.2	13.0	32.3	10.3
Queue Length 50th (ft)	34	45	60	114	2
Queue Length 95th (ft)	100	m67	m65	162	34
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2801	165	1239	857	427
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.45	0.39	0.50	0.15

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2508	31	29	51	13
v/c Ratio	0.63	0.21	0.14	0.25	0.07
Control Delay	3.4	41.5	39.6	39.0	30.4
Queue Delay	8.0	0.0	0.0	0.0	0.0
Total Delay	11.3	41.5	39.6	39.0	30.4
Queue Length 50th (ft)	19	17	16	26	5
Queue Length 95th (ft)	m145	m26	m24	51	18
Internal Link Dist (ft)	270		367	537	
Turn Bay Length (ft)					50
Base Capacity (vph)	4007	452	625	625	533
Starvation Cap Reductn	1480	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.99	0.07	0.05	0.08	0.02

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2710	40	158	174	87
v/c Ratio	0.94	0.11	0.25	0.28	0.16
Control Delay	25.6	22.9	23.9	23.0	21.2
Queue Delay	15.6	0.0	0.0	0.0	0.0
Total Delay	41.1	22.9	23.9	23.0	21.2
Queue Length 50th (ft)	470	16	64	70	33
Queue Length 95th (ft)	534	m29	m90	79	44
Internal Link Dist (ft)	357		370	537	
Turn Bay Length (ft)		100			50
Base Capacity (vph)	2885	373	625	625	532
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	251	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.03	0.11	0.25	0.28	0.16

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2762	418	118	504
v/c Ratio	0.96	0.56	0.65	0.43
Control Delay	30.2	31.6	37.1	16.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.2	31.6	37.1	16.3
Queue Length 50th (ft)	~606	100	53	125
Queue Length 95th (ft)	#617	126	m71	140
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	2870	746	203	1306
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.96	0.56	0.58	0.39

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2499	428	11	227
v/c Ratio	0.84	0.40	0.04	0.38
Control Delay	6.2	24.5	22.7	26.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.2	24.5	22.7	26.3
Queue Length 50th (ft)	38	95	4	90
Queue Length 95th (ft)	m42	117	m9	m136
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	2958	1062	251	597
Starvation Cap Reductn	8	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.85	0.40	0.04	0.38

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2598	337	218	140	502
v/c Ratio	0.95	0.44	0.59	0.76	0.39
Control Delay	13.5	32.2	33.6	72.2	19.9
Queue Delay	0.0	0.0	0.0	1.0	0.0
Total Delay	13.5	32.2	33.6	73.2	19.9
Queue Length 50th (ft)	63	86	92	82	74
Queue Length 95th (ft)	#420	127	166	m#154	m129
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	2724	763	369	193	1295
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	6	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.44	0.59	0.75	0.39

Intersection Summary

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2722	48	80	78	522
v/c Ratio	0.80	0.11	0.22	0.25	0.65
Control Delay	4.3	27.3	27.3	32.7	37.9
Queue Delay	1.8	0.0	0.0	0.0	0.0
Total Delay	6.2	27.3	27.3	32.7	37.9
Queue Length 50th (ft)	49	22	34	35	146
Queue Length 95th (ft)	m132	44	63	m57	157
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	3410	491	421	356	933
Starvation Cap Reductn	203	0	0	0	0
Spillback Cap Reductn	499	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.94	0.10	0.19	0.22	0.56

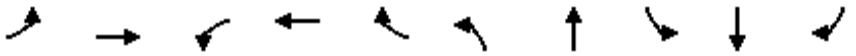
Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2823	70	44	38	136
v/c Ratio	0.87	0.14	0.10	0.11	0.28
Control Delay	11.4	25.8	24.1	35.7	38.3
Queue Delay	2.0	0.0	0.0	0.0	0.0
Total Delay	13.4	25.8	24.1	35.7	38.3
Queue Length 50th (ft)	528	30	17	23	82
Queue Length 95th (ft)	138	45	31	m44	m113
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3238	491	420	349	491
Starvation Cap Reductn	270	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.14	0.10	0.11	0.28

Intersection Summary

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	34	2200	339	1783	462	29	232	184	185	69
v/c Ratio	0.34	0.82	0.98	0.61	0.41	0.18	1.45	0.85	0.85	0.32
Control Delay	103.2	64.0	107.2	8.6	1.3	60.5	276.5	91.1	91.2	34.2
Queue Delay	0.0	38.4	0.0	0.2	0.2	1.0	0.0	0.0	0.0	0.3
Total Delay	103.2	102.3	107.2	8.8	1.6	61.5	276.5	91.1	91.2	34.6
Queue Length 50th (ft)	32	770	163	217	14	25	~287	172	173	28
Queue Length 95th (ft)	m43	780	m#212	m209	m20	48	#357	#292	#293	76
Internal Link Dist (ft)		629		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	118	2673	345	2909	1115	165	160	240	241	235
Starvation Cap Reductn	0	636	0	337	195	0	0	0	0	0
Spillback Cap Reductn	0	0	0	64	0	55	0	0	0	28
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	1.08	0.98	0.69	0.50	0.26	1.45	0.77	0.77	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	1901	653	2099	1408	258	478
v/c Ratio	0.54	0.51	0.55	0.94	1.00	1.90
Control Delay	3.2	0.7	15.2	29.6	112.7	452.6
Queue Delay	0.2	0.0	0.6	0.0	0.0	0.0
Total Delay	3.4	0.7	15.8	29.6	112.7	452.6
Queue Length 50th (ft)	112	0	389	914	238	~666
Queue Length 95th (ft)	m117	m0	m298	m791	#392	#836
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	3499	1282	3843	1492	259	251
Starvation Cap Reductn	694	0	1212	0	0	0
Spillback Cap Reductn	0	0	9	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.51	0.80	0.94	1.00	1.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

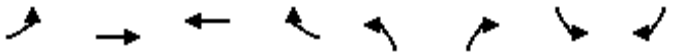
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	145	199	203	54	415	476	42	707
v/c Ratio	0.71	0.61	0.72	0.73	0.18	0.67	0.29	0.49	0.60
Control Delay	64.7	58.5	61.0	61.5	11.4	51.0	20.6	73.0	36.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	58.5	61.0	61.5	11.4	51.0	20.6	73.0	36.2
Queue Length 50th (ft)	124	106	155	158	0	155	115	32	236
Queue Length 95th (ft)	190	167	225	229	34	210	183	61	289
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	280	282	377	380	400	619	1615	98	1178
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.51	0.53	0.53	0.14	0.67	0.29	0.43	0.60

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	469	1205	1928	519	1251	795	555	502
v/c Ratio	1.06	0.48	1.08	0.43	1.48	0.51	0.40	1.24
Control Delay	104.0	16.7	89.5	6.5	257.8	1.2	30.4	155.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.0	16.7	89.5	6.5	257.8	1.2	30.4	155.3
Queue Length 50th (ft)	~257	241	~721	123	~806	0	182	~399
Queue Length 95th (ft)	m#328	m276	m#652	m136	#882	0	213	#547
Internal Link Dist (ft)		758	703					
Turn Bay Length (ft)	280			500	700		400	
Base Capacity (vph)	443	2517	1788	1221	847	1568	1387	404
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.48	1.08	0.43	1.48	0.51	0.40	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

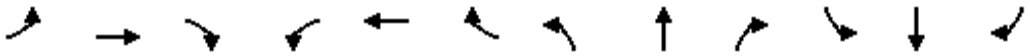
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	37	1834	479	568	1624	267	290	504	50	60
v/c Ratio	0.52	0.89	0.45	1.10	0.66	1.41	1.51	1.01	0.60	0.47
Control Delay	85.8	30.6	6.2	124.5	13.3	254.3	295.2	87.5	93.1	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	30.6	6.2	124.5	13.3	254.3	295.2	87.5	93.1	27.6
Queue Length 50th (ft)	34	785	96	~302	425	~342	~386	~439	46	0
Queue Length 95th (ft)	m#78	971	158	#421	500	#532	#583	#676	68	23
Internal Link Dist (ft)		724			337		1021		431	
Turn Bay Length (ft)	200			300				280		50
Base Capacity (vph)	71	2050	1061	515	2475	190	192	498	84	127
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.89	0.45	1.10	0.66	1.41	1.51	1.01	0.60	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	554	614	362	519	996	78	336	580	310	70	764	698
v/c Ratio	1.42	0.62	0.71	0.97	0.91	0.16	0.97	0.49	0.55	0.32	0.97	1.18
Control Delay	240.6	36.6	34.3	76.7	49.3	22.4	90.8	31.1	30.3	42.8	56.5	115.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	240.6	36.6	34.3	76.7	49.3	22.4	90.8	31.1	30.3	42.8	56.5	115.7
Queue Length 50th (ft)	~315	193	170	185	344	31	121	173	153	25	364	~574
Queue Length 95th (ft)	#430	248	276	#293	#463	67	#212	233	252	m43	#508	#778
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	175		175	275		275	160			125		135
Base Capacity (vph)	412	1048	535	535	1113	513	346	1187	562	226	788	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.34	0.59	0.68	0.97	0.89	0.15	0.97	0.49	0.55	0.31	0.97	1.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2205	119	542	745
v/c Ratio	0.79	0.69	0.45	1.08
Control Delay	9.0	55.0	28.1	89.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.0	55.0	28.1	89.7
Queue Length 50th (ft)	99	71	156	~235
Queue Length 95th (ft)	137	m76	m162	#260
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2804	172	1195	693
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.69	0.45	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2066	149	211	400
v/c Ratio	0.73	0.53	0.34	0.35
Control Delay	6.6	27.5	19.8	22.1
Queue Delay	0.2	0.0	0.0	0.0
Total Delay	6.7	27.5	19.8	22.1
Queue Length 50th (ft)	82	83	111	83
Queue Length 95th (ft)	97	m138	m178	95
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	2841	283	627	1154
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	148	0	0	1
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.77	0.53	0.34	0.35

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1977	146	516	647	202
v/c Ratio	0.71	0.88	0.42	0.86	0.56
Control Delay	5.2	94.7	14.3	47.1	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.2	94.7	14.3	47.1	32.8
Queue Length 50th (ft)	62	88	70	183	84
Queue Length 95th (ft)	95	m#170	m88	#276	155
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2773	165	1239	748	360
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.71	0.88	0.42	0.86	0.56

Intersection Summary

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

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2115	71	86	48	18
v/c Ratio	0.54	0.41	0.36	0.20	0.08
Control Delay	6.3	58.8	55.8	35.5	20.8
Queue Delay	0.8	0.0	0.0	0.0	0.0
Total Delay	7.1	58.8	55.8	35.5	20.8
Queue Length 50th (ft)	108	43	52	25	3
Queue Length 95th (ft)	422	m64	m75	43	16
Internal Link Dist (ft)	270		367	537	
Turn Bay Length (ft)					50
Base Capacity (vph)	3884	453	625	625	539
Starvation Cap Reductn	1311	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.16	0.14	0.08	0.03

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2054	94	155	99	87
v/c Ratio	0.72	0.22	0.25	0.16	0.16
Control Delay	15.4	24.5	24.4	21.4	19.4
Queue Delay	0.6	0.0	0.0	0.0	0.0
Total Delay	16.0	24.5	24.4	21.4	19.4
Queue Length 50th (ft)	279	47	78	38	30
Queue Length 95th (ft)	329	m77	m116	71	61
Internal Link Dist (ft)	357		370	537	
Turn Bay Length (ft)		100			50
Base Capacity (vph)	2857	433	625	625	537
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	399	0	0	0	1
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.84	0.22	0.25	0.16	0.16

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2137	697	190	547
v/c Ratio	0.80	0.96	0.95	0.42
Control Delay	19.5	59.0	59.8	20.5
Queue Delay	0.0	0.0	0.0	0.8
Total Delay	19.5	59.0	59.8	21.3
Queue Length 50th (ft)	331	195	115	151
Queue Length 95th (ft)	398	#249	m119	m148
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	2664	727	201	1294
Starvation Cap Reductn	0	0	0	428
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.96	0.95	0.63

Intersection Summary

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2340	552	55	432
v/c Ratio	0.80	0.52	0.28	0.72
Control Delay	9.5	26.2	34.6	42.5
Queue Delay	0.0	0.0	0.0	4.9
Total Delay	9.5	26.2	34.6	47.4
Queue Length 50th (ft)	230	128	27	240
Queue Length 95th (ft)	m216	161	m50	336
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	2929	1061	195	597
Starvation Cap Reductn	0	0	0	107
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.52	0.28	0.88

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2479	360	184	146	684
v/c Ratio	0.92	0.47	0.50	0.78	0.53
Control Delay	12.0	32.8	30.2	68.1	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.2
Total Delay	12.0	32.8	30.2	68.1	29.4
Queue Length 50th (ft)	80	92	73	88	136
Queue Length 95th (ft)	#162	136	139	m107	m174
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	2696	760	366	193	1295
Starvation Cap Reductn	0	0	0	0	143
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.92	0.47	0.50	0.76	0.59

Intersection Summary

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2608	156	208	77	109
v/c Ratio	0.77	0.37	0.57	0.30	0.14
Control Delay	3.8	31.3	36.2	41.6	37.3
Queue Delay	1.9	0.0	0.0	0.0	0.0
Total Delay	5.7	31.3	36.2	41.6	37.3
Queue Length 50th (ft)	43	74	102	34	25
Queue Length 95th (ft)	126	106	139	m73	48
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	3390	491	421	293	933
Starvation Cap Reductn	184	0	0	0	0
Spillback Cap Reductn	590	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.32	0.49	0.26	0.12

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2790	173	184	63	118
v/c Ratio	0.87	0.35	0.44	0.23	0.24
Control Delay	13.3	28.8	30.5	34.3	33.4
Queue Delay	1.7	0.0	0.0	0.0	0.0
Total Delay	15.1	28.8	30.5	34.3	33.4
Queue Length 50th (ft)	575	78	83	33	62
Queue Length 95th (ft)	368	106	113	m53	84
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3213	491	420	278	491
Starvation Cap Reductn	261	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	0.35	0.44	0.23	0.24

Intersection Summary

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

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Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	2416	326	2321	153	29	253	51	57	48
v/c Ratio	0.59	0.79	0.95	0.79	0.15	0.18	1.64	0.39	0.43	0.29
Control Delay	59.5	8.3	74.9	11.8	1.9	60.5	354.2	68.2	69.6	18.8
Queue Delay	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	8.4	74.9	12.1	1.9	60.5	354.2	68.2	69.6	18.8
Queue Length 50th (ft)	70	34	157	489	10	25	~333	48	53	0
Queue Length 95th (ft)	m105	891	m#172	m526	m22	55	#489	81	88	33
Internal Link Dist (ft)		632		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	125	3046	342	2953	1034	165	154	231	236	257
Starvation Cap Reductn	0	64	0	155	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	102	0	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.81	0.95	0.83	0.15	0.18	1.64	0.22	0.24	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	1991	677	2137	1226	484	677
v/c Ratio	0.54	0.53	0.54	0.84	2.03	3.12
Control Delay	1.3	1.3	3.7	29.3	509.1	985.2
Queue Delay	0.4	0.0	0.3	0.0	0.0	0.0
Total Delay	1.8	1.3	4.0	29.3	509.1	985.2
Queue Length 50th (ft)	0	0	120	842	~690	~1075
Queue Length 95th (ft)	m1	m0	m101	m628	#911	#1316
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	3680	1286	3948	1468	238	217
Starvation Cap Reductn	1008	0	1002	0	0	0
Spillback Cap Reductn	0	0	285	0	0	5
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.53	0.73	0.84	2.03	3.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	380	380	115	109	11	403	688	63	362
v/c Ratio	0.79	0.74	0.55	0.52	0.06	1.27	0.52	0.59	0.37
Control Delay	44.7	39.5	51.1	50.2	20.4	181.4	17.7	70.9	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	39.5	51.1	50.2	20.4	181.4	17.7	70.9	27.4
Queue Length 50th (ft)	214	203	71	67	0	~167	105	39	84
Queue Length 95th (ft)	347	331	133	127	16	#305	196	#105	143
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	586	627	389	384	320	318	1329	111	979
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.61	0.30	0.28	0.03	1.27	0.52	0.57	0.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

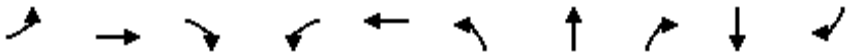
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	500	1674	2121	579	947	1158	230	322
v/c Ratio	1.17	0.72	1.31	0.50	1.00	0.73	0.16	0.83
Control Delay	147.7	37.8	183.2	7.2	78.4	3.0	23.3	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.7	37.8	183.2	7.2	78.4	3.0	23.3	43.4
Queue Length 50th (ft)	~301	565	~916	222	445	0	62	133
Queue Length 95th (ft)	m#340	m526	m#940	m225	#594	0	87	#222
Internal Link Dist (ft)		758	703					
Turn Bay Length (ft)	280			500	700		400	
Base Capacity (vph)	426	2337	1616	1175	947	1583	1489	393
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.72	1.31	0.49	1.00	0.73	0.15	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	32	2416	595	895	2253	229	239	1022	58	26
v/c Ratio	0.42	1.20	0.59	1.57	0.89	1.27	1.31	2.13	0.72	0.30
Control Delay	87.8	110.6	4.6	302.6	22.2	204.1	218.3	538.9	109.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.8	110.6	4.6	302.6	22.2	204.1	218.3	538.9	109.4	31.2
Queue Length 50th (ft)	30	~1439	0	~594	893	~274	~293	~1497	53	0
Queue Length 95th (ft)	m43	#1533	74	#726	1054	#455	#476	#1762	#104	25
Internal Link Dist (ft)		724			337		1021		431	
Turn Bay Length (ft)	200			300				280		50
Base Capacity (vph)	77	2020	1014	570	2540	181	183	480	80	86
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.20	0.59	1.57	0.89	1.27	1.31	2.13	0.73	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	951	1840	251	141	675	78	537	741	467	135	656	842
v/c Ratio	1.28	1.05	5.02	0.57	0.73	13.00	0.86	0.62	0.81	0.60	0.84	1.29
Control Delay	172.0	70.6	1862.5	56.5	46.4	5711.8	57.0	32.4	41.8	55.4	47.5	161.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	172.0	70.6	1862.5	56.5	46.4	5711.8	57.0	32.4	41.8	55.4	47.5	161.8
Queue Length 50th (ft)	~431	~510	~291	48	162	~104	184	223	265	46	223	~749
Queue Length 95th (ft)	#564	#606	#449	80	201	#202	244	294	#453	m75	#361	#1017
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	170		175	275		275	160			125		125
Base Capacity (vph)	742	1752	50	294	1040	6	683	1201	575	224	784	651
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.28	1.05	5.02	0.48	0.65	13.00	0.79	0.62	0.81	0.60	0.84	1.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3131	51	475	963
v/c Ratio	1.11	0.37	0.39	1.02
Control Delay	57.7	36.2	25.2	67.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	57.7	36.2	25.2	67.6
Queue Length 50th (ft)	~716	29	123	~322
Queue Length 95th (ft)	m36	m34	m145	#471
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2824	173	1207	942
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.11	0.29	0.39	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3320	72	310	127
v/c Ratio	1.16	0.17	0.49	0.11
Control Delay	78.6	20.0	25.1	20.4
Queue Delay	0.0	0.0	1.4	0.0
Total Delay	78.6	20.0	26.6	20.4
Queue Length 50th (ft)	~785	36	166	25
Queue Length 95th (ft)	m24	m58	m205	41
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	2872	420	627	1139
Starvation Cap Reductn	0	0	160	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.16	0.17	0.66	0.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3584	61	567	609	70
v/c Ratio	1.28	0.41	0.46	0.70	0.17
Control Delay	147.1	55.0	14.4	36.9	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	147.1	55.0	14.4	36.9	14.9
Queue Length 50th (ft)	~932	36	72	169	11
Queue Length 95th (ft)	m#865	m45	m102	#250	46
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2799	165	1239	865	421
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.28	0.37	0.46	0.70	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	4175	36	35	65	24
v/c Ratio	1.05	0.24	0.17	0.31	0.13
Control Delay	39.5	39.1	37.4	39.8	36.6
Queue Delay	247.1	0.0	0.0	0.0	0.0
Total Delay	286.6	39.1	37.4	39.8	36.6
Queue Length 50th (ft)	~968	19	18	34	12
Queue Length 95th (ft)	m639	m24	m23	61	30
Internal Link Dist (ft)	270		367	537	
Turn Bay Length (ft)					50
Base Capacity (vph)	3985	447	625	625	531
Starvation Cap Reductn	1378	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.60	0.08	0.06	0.10	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	4168	45	154	179	62
v/c Ratio	1.44	0.12	0.25	0.29	0.12
Control Delay	223.9	23.6	24.5	23.1	21.1
Queue Delay	248.1	0.0	0.0	0.0	0.0
Total Delay	471.9	23.6	24.5	23.1	21.1
Queue Length 50th (ft)	~1178	18	62	72	24
Queue Length 95th (ft)	#1262	m24	m71	119	50
Internal Link Dist (ft)	357		370	537	
Turn Bay Length (ft)		100			50
Base Capacity (vph)	2885	369	625	625	531
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	797	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	2.00	0.12	0.25	0.29	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3305	527	337	684
v/c Ratio	1.23	0.73	1.66	0.52
Control Delay	129.1	38.7	328.1	18.2
Queue Delay	129.7	0.0	81.4	1.7
Total Delay	258.9	38.7	409.6	19.9
Queue Length 50th (ft)	~844	143	~264	162
Queue Length 95th (ft)	#938	191	m#260	m149
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	2689	726	203	1306
Starvation Cap Reductn	0	0	0	427
Spillback Cap Reductn	512	0	20	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.52	0.73	1.84	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3440	470	12	227
v/c Ratio	1.16	0.44	0.05	0.38
Control Delay	87.1	25.3	20.9	23.7
Queue Delay	1.4	0.0	0.0	0.0
Total Delay	88.5	25.3	20.9	23.7
Queue Length 50th (ft)	~868	107	4	87
Queue Length 95th (ft)	m91	146	m7	m91
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	2958	1062	232	597
Starvation Cap Reductn	8	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.17	0.44	0.05	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3437	513	305	216	714
v/c Ratio	1.26	0.69	0.88	1.12	0.55
Control Delay	133.8	37.4	60.6	130.2	25.3
Queue Delay	44.7	0.0	0.2	78.8	0.3
Total Delay	178.5	37.4	60.8	209.0	25.6
Queue Length 50th (ft)	~873	138	159	~143	140
Queue Length 95th (ft)	m#685	193	#309	m#210	m184
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	2721	748	345	193	1295
Starvation Cap Reductn	0	0	0	0	147
Spillback Cap Reductn	199	0	1	28	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.36	0.69	0.89	1.31	0.62

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3519	71	118	89	599
v/c Ratio	1.04	0.16	0.32	0.29	0.72
Control Delay	30.5	27.3	29.8	32.3	38.0
Queue Delay	79.9	0.0	0.0	0.0	0.0
Total Delay	110.4	27.3	29.8	32.3	38.0
Queue Length 50th (ft)	~788	32	55	45	179
Queue Length 95th (ft)	m215	59	89	m51	m179
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	3374	491	418	349	933
Starvation Cap Reductn	186	0	0	0	0
Spillback Cap Reductn	503	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.23	0.14	0.28	0.26	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3380	70	61	35	169
v/c Ratio	1.04	0.14	0.15	0.10	0.34
Control Delay	32.9	25.8	25.7	34.6	38.8
Queue Delay	57.5	0.0	0.0	0.0	0.0
Total Delay	90.4	25.8	25.7	34.6	38.8
Queue Length 50th (ft)	~779	30	25	20	100
Queue Length 95th (ft)	m#726	58	52	48	152
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3239	491	418	349	491
Starvation Cap Reductn	365	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.18	0.14	0.15	0.10	0.34

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	95	2821	426	2547	442	103	339	204	209	125
v/c Ratio	0.81	1.07	1.23	0.95	0.42	0.62	2.12	0.89	0.90	0.51
Control Delay	112.9	78.5	161.8	19.5	1.2	77.6	552.9	95.1	98.1	39.3
Queue Delay	0.0	122.6	0.0	26.3	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	112.9	201.1	161.8	45.8	1.8	77.6	552.9	95.1	98.1	39.3
Queue Length 50th (ft)	90	~1072	~247	834	30	92	~490	193	198	59
Queue Length 95th (ft)	#190	#1154	m#246	m448	m29	152	#660	#340	#351	127
Internal Link Dist (ft)		626		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	118	2635	345	2682	1056	165	160	240	241	252
Starvation Cap Reductn	0	541	0	274	274	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.35	1.23	1.06	0.57	0.62	2.12	0.85	0.87	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	2577	897	2511	1421	403	925
v/c Ratio	0.72	0.70	0.65	0.95	1.56	3.69
Control Delay	4.0	3.5	13.7	32.5	306.2	1234.3
Queue Delay	1.1	0.0	2.3	0.0	0.0	0.0
Total Delay	5.1	3.5	16.0	32.5	306.2	1234.3
Queue Length 50th (ft)	169	6	413	950	~517	~1510
Queue Length 95th (ft)	m152	m0	m297	m685	#725	#1767
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	3573	1282	3843	1492	259	251
Starvation Cap Reductn	687	0	1154	0	0	0
Spillback Cap Reductn	0	0	434	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.70	0.93	0.95	1.56	3.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	172	213	239	245	65	753	635	60	608
v/c Ratio	0.67	0.80	0.77	0.78	0.19	1.22	0.44	0.65	0.57
Control Delay	60.1	70.5	61.9	62.9	10.2	153.2	25.2	85.6	38.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	70.5	61.9	62.9	10.2	153.2	25.2	85.6	38.0
Queue Length 50th (ft)	124	158	184	189	0	~368	188	45	212
Queue Length 95th (ft)	193	#249	270	277	37	#490	254	#112	289
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	280	288	377	380	408	619	1432	99	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.74	0.63	0.64	0.16	1.22	0.44	0.61	0.57

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	711	1842	2300	632	1184	1026	516	462
v/c Ratio	1.60	0.73	1.29	0.52	1.40	0.65	0.37	1.14
Control Delay	313.4	24.4	167.8	6.4	224.8	2.1	29.9	117.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	313.4	24.4	167.8	6.4	224.8	2.1	29.9	117.5
Queue Length 50th (ft)	~515	414	~984	154	~740	0	167	~323
Queue Length 95th (ft)	m#588	m417	m#848	m152	#877	0	214	#543
Internal Link Dist (ft)		758	703					
Turn Bay Length (ft)	280			500	700		400	
Base Capacity (vph)	443	2517	1788	1217	847	1568	1387	404
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.60	0.73	1.29	0.52	1.40	0.65	0.37	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

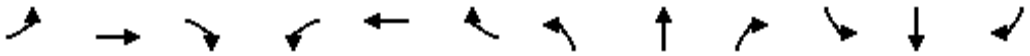
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	42	2821	505	737	2187	364	394	968	64	51
v/c Ratio	0.59	1.41	0.51	1.43	0.90	1.92	2.05	2.00	0.76	0.43
Control Delay	86.3	215.4	8.9	246.6	24.4	462.9	520.8	485.8	113.1	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	215.4	8.9	246.6	24.4	462.9	520.8	485.8	113.1	27.8
Queue Length 50th (ft)	37	~1846	183	~467	825	~534	~592	~1366	59	0
Queue Length 95th (ft)	m56	#1964	287	#593	976	#747	#811	#1629	#113	33
Internal Link Dist (ft)		724			337		1021		431	
Turn Bay Length (ft)	200			300				280		50
Base Capacity (vph)	71	1998	999	515	2424	190	192	483	84	118
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	1.41	0.51	1.43	0.90	1.92	2.05	2.00	0.76	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	845	1360	482	608	1265	105	414	760	388	84	729	687
v/c Ratio	1.87	0.91	5.48	1.14	0.84	7.00	1.20	0.67	0.72	0.38	0.97	1.14
Control Delay	429.7	46.8	2048.4	123.0	41.1	2840.8	155.5	35.7	38.0	39.9	53.1	99.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0
Total Delay	429.7	46.8	2048.4	123.0	41.1	2840.8	155.5	36.4	38.0	39.9	53.1	99.0
Queue Length 50th (ft)	~556	330	~569	~253	291	~130	~179	245	217	27	321	~417
Queue Length 95th (ft)	#698	#416	#772	#365	348	#241	#277	316	#360	m47	#484	#617
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	175		175	275		275	160			125		135
Base Capacity (vph)	451	1506	88	535	1599	15	346	1138	540	226	749	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	1	0	128	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.87	0.90	5.48	1.14	0.79	7.50	1.20	0.75	0.72	0.37	0.97	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2772	96	835	1038
v/c Ratio	0.99	0.60	0.70	1.30
Control Delay	14.8	46.0	31.1	175.3
Queue Delay	3.0	0.0	13.9	25.8
Total Delay	17.8	46.0	45.0	201.1
Queue Length 50th (ft)	75	56	248	~414
Queue Length 95th (ft)	m72	m42	m180	#541
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2802	172	1195	798
Starvation Cap Reductn	0	0	352	0
Spillback Cap Reductn	39	0	0	34
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.56	0.99	1.36

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2985	161	246	369
v/c Ratio	1.05	0.54	0.39	0.32
Control Delay	34.6	27.0	21.3	22.6
Queue Delay	48.7	0.0	0.0	0.0
Total Delay	83.2	27.0	21.3	22.6
Queue Length 50th (ft)	~655	90	132	78
Queue Length 95th (ft)	m204	m125	m174	111
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	2842	299	627	1149
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	275	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.16	0.54	0.39	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2874	277	623	766	200
v/c Ratio	1.04	1.68	0.50	1.02	0.59
Control Delay	38.0	354.9	15.9	74.9	38.8
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	38.0	354.9	16.0	74.9	38.8
Queue Length 50th (ft)	~621	~236	92	~233	99
Queue Length 95th (ft)	#722	m#316	m110	#354	170
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2771	165	1239	748	338
Starvation Cap Reductn	0	0	94	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.04	1.68	0.54	1.02	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3105	84	101	65	24
v/c Ratio	0.81	0.47	0.41	0.26	0.11
Control Delay	10.4	54.5	51.6	35.8	32.1
Queue Delay	78.8	0.0	0.0	0.0	0.0
Total Delay	89.2	54.5	51.6	35.8	32.1
Queue Length 50th (ft)	648	48	57	34	12
Queue Length 95th (ft)	m648	m65	m75	57	27
Internal Link Dist (ft)	270		367	537	
Turn Bay Length (ft)					50
Base Capacity (vph)	3853	447	625	625	531
Starvation Cap Reductn	1207	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.17	0.19	0.16	0.10	0.05

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2950	107	177	218	116
v/c Ratio	1.03	0.32	0.28	0.35	0.22
Control Delay	45.7	27.0	25.1	24.0	22.2
Queue Delay	110.5	0.0	0.0	0.0	0.0
Total Delay	156.2	27.0	25.1	24.0	22.2
Queue Length 50th (ft)	~650	51	83	90	45
Queue Length 95th (ft)	#746	m72	m105	143	83
Internal Link Dist (ft)	357		370	537	
Turn Bay Length (ft)		100			50
Base Capacity (vph)	2859	335	625	625	531
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	564	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.29	0.32	0.28	0.35	0.22

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3657	973	202	801
v/c Ratio	1.37	1.34	1.00	0.62
Control Delay	193.3	190.9	51.7	23.2
Queue Delay	244.6	15.1	184.4	5.4
Total Delay	437.9	206.0	236.1	28.6
Queue Length 50th (ft)	~1004	~372	~123	231
Queue Length 95th (ft)	#1095	#497	m103	m192
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	2662	728	201	1294
Starvation Cap Reductn	0	0	0	423
Spillback Cap Reductn	755	18	63	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.92	1.37	1.46	0.92

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3829	588	55	545
v/c Ratio	1.31	0.56	0.31	0.91
Control Delay	153.6	27.2	29.6	48.2
Queue Delay	0.0	0.0	0.0	47.3
Total Delay	153.6	27.2	29.6	95.5
Queue Length 50th (ft)	~1051	141	23	288
Queue Length 95th (ft)	m97	194	m35	m#335
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	2929	1052	180	597
Starvation Cap Reductn	0	0	0	102
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.31	0.56	0.31	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3998	449	418	142	834
v/c Ratio	1.48	0.59	1.14	0.76	0.64
Control Delay	234.7	34.8	123.1	51.6	30.9
Queue Delay	90.7	0.0	3.9	9.3	0.5
Total Delay	325.4	34.8	127.0	60.9	31.4
Queue Length 50th (ft)	~1123	118	~264	83	188
Queue Length 95th (ft)	m#770	169	#446	m81	m183
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	2697	762	366	193	1295
Starvation Cap Reductn	0	0	0	0	153
Spillback Cap Reductn	323	0	3	29	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.68	0.59	1.15	0.87	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4115	191	254	134	189
v/c Ratio	1.23	0.44	0.69	0.57	0.23
Control Delay	116.4	31.9	41.0	44.0	33.7
Queue Delay	191.3	0.0	0.0	0.0	0.0
Total Delay	307.7	31.9	41.0	44.0	33.7
Queue Length 50th (ft)	~1054	93	132	76	46
Queue Length 95th (ft)	m416	141	195	m105	m64
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	3356	491	417	263	933
Starvation Cap Reductn	188	0	0	0	0
Spillback Cap Reductn	865	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.65	0.39	0.61	0.51	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4251	145	200	117	171
v/c Ratio	1.32	0.30	0.48	0.39	0.35
Control Delay	162.1	27.9	31.9	39.5	37.0
Queue Delay	59.5	0.0	0.0	0.0	0.0
Total Delay	221.6	27.9	31.9	39.5	37.0
Queue Length 50th (ft)	~1173	64	93	67	98
Queue Length 95th (ft)	m#863	111	154	118	156
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3211	491	417	303	491
Starvation Cap Reductn	292	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.46	0.30	0.48	0.39	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Forecast Year 2035 With Project Conditions

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	2416	326	2321	153	29	253	51	57	48
v/c Ratio	0.65	0.77	1.14	0.77	0.15	0.21	1.23	0.35	0.39	0.27
Control Delay	81.2	9.2	133.5	10.8	1.4	59.5	169.9	62.2	63.2	18.4
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.2	9.2	133.5	11.0	1.4	59.5	169.9	62.2	63.2	18.4
Queue Length 50th (ft)	66	181	~168	408	4	23	~193	43	48	0
Queue Length 95th (ft)	m#135	371	m#223	m421	m11	54	#348	80	86	33
Internal Link Dist (ft)		628		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	114	3148	285	3003	1043	138	206	486	497	487
Starvation Cap Reductn	0	0	0	138	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.77	1.14	0.81	0.15	0.21	1.23	0.10	0.11	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	1811	857	2137	1226	484	677
v/c Ratio	0.68	0.67	0.73	0.48	0.82	1.37
Control Delay	9.7	6.3	11.2	2.5	51.0	213.4
Queue Delay	0.4	0.0	0.3	0.0	0.0	0.0
Total Delay	10.1	6.3	11.5	2.5	51.0	213.4
Queue Length 50th (ft)	159	40	408	36	369	~753
Queue Length 95th (ft)	m151	m327	482	34	#545	#989
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	2655	1270	2916	2577	591	494
Starvation Cap Reductn	316	0	185	0	0	0
Spillback Cap Reductn	0	0	262	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.67	0.81	0.48	0.82	1.37

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	380	380	118	106	11	408	695	63	362
v/c Ratio	0.90	0.81	0.63	0.59	0.08	0.85	0.45	0.54	0.36
Control Delay	70.5	57.9	69.3	66.6	23.5	42.3	6.3	74.5	33.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.5	57.9	69.3	66.6	23.5	42.3	6.3	74.5	33.1
Queue Length 50th (ft)	304	288	101	90	0	141	85	52	114
Queue Length 95th (ft)	#474	#412	156	144	18	m#224	m138	95	163
Internal Link Dist (ft)		186		399			1098		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	446	493	338	330	232	482	1534	141	1010
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.77	0.35	0.32	0.05	0.85	0.45	0.45	0.36

Intersection Summary

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

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



Lane Group	EBL	EBT	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	500	1674	2700	947	1158	230	322
v/c Ratio	0.79	0.50	0.85	0.85	0.73	0.30	0.57
Control Delay	53.2	5.6	24.2	56.1	3.0	36.2	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	5.6	24.2	56.1	3.0	36.2	23.5
Queue Length 50th (ft)	230	127	297	270	0	100	97
Queue Length 95th (ft)	m300	240	313	324	0	m137	m138
Internal Link Dist (ft)		758	703				
Turn Bay Length (ft)	280			700		400	250
Base Capacity (vph)	630	3316	3186	1134	1583	788	564
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.50	0.85	0.84	0.73	0.29	0.57

Intersection Summary

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

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	32	2416	595	885	2253	305	163	1042	32	52
v/c Ratio	0.36	0.90	0.65	0.90	0.52	0.72	0.77	0.79	0.41	0.55
Control Delay	61.9	33.4	13.6	57.5	10.7	60.0	70.2	23.6	75.6	56.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	33.4	13.6	57.5	10.7	60.0	70.2	23.6	75.6	56.8
Queue Length 50th (ft)	26	519	241	370	273	143	154	402	27	22
Queue Length 95th (ft)	m48	589	388	#483	302	#212	m#262	540	54	54
Internal Link Dist (ft)		724			337		1021			431
Turn Bay Length (ft)	200		230	300				280		
Base Capacity (vph)	91	2685	912	987	4365	421	213	1325	79	95
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.90	0.65	0.90	0.52	0.72	0.77	0.79	0.41	0.55

Intersection Summary

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

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



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	951	2091	141	753	537	741	467	135	646	842
v/c Ratio	0.90	0.95	0.89	0.80	0.97	0.64	0.79	0.74	0.85	0.96
Control Delay	55.8	45.0	109.0	56.5	85.1	40.4	41.1	74.5	43.8	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	55.8	45.0	109.0	56.5	85.1	40.5	41.1	74.5	43.8	32.6
Queue Length 50th (ft)	403	604	61	216	235	279	282	62	267	77
Queue Length 95th (ft)	#536	#726	#126	265	#348	348	426	m#103	#364	#961
Internal Link Dist (ft)		282		596		1700			665	
Turn Bay Length (ft)	175		275		160			125		125
Base Capacity (vph)	1056	2198	158	1017	555	1149	591	183	756	881
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	18	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.95	0.89	0.74	0.97	0.66	0.79	0.74	0.85	0.96

Intersection Summary

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3131	54	502	963
v/c Ratio	0.98	0.49	0.37	0.94
Control Delay	17.3	37.6	17.0	48.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.3	37.6	17.0	48.7
Queue Length 50th (ft)	233	32	125	~283
Queue Length 95th (ft)	#591	m36	m146	#421
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	3201	111	1351	1023
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.98	0.49	0.37	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	3320	72	310	127
v/c Ratio	0.82	0.24	0.68	0.15
Control Delay	1.4	13.9	19.7	26.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.4	13.9	19.8	26.9
Queue Length 50th (ft)	15	15	65	29
Queue Length 95th (ft)	m18	m21	m87	48
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	4071	306	455	828
Starvation Cap Reductn	0	0	2	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.82	0.24	0.68	0.15

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3584	61	567	609	70
v/c Ratio	0.98	0.50	0.52	0.79	0.19
Control Delay	22.0	33.7	11.3	43.0	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	33.7	11.3	43.0	20.0
Queue Length 50th (ft)	288	37	66	178	17
Queue Length 95th (ft)	#668	m45	m78	#272	53
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	3672	122	1093	772	371
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.50	0.52	0.79	0.19

Intersection Summary

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

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

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	4158	17	36	35	68	58
v/c Ratio	0.85	0.01	0.24	0.17	0.32	0.32
Control Delay	1.6	0.0	27.6	25.6	40.7	40.9
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	1.7	0.0	27.6	25.6	40.7	40.9
Queue Length 50th (ft)	18	0	16	15	37	31
Queue Length 95th (ft)	19	m0	m22	m22	64	57
Internal Link Dist (ft)	270			367	537	
Turn Bay Length (ft)						50
Base Capacity (vph)	4868	1266	273	383	383	326
Starvation Cap Reductn	89	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.01	0.13	0.09	0.18	0.18

Intersection Summary

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

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	4079	89	45	154	179	62
v/c Ratio	0.93	0.08	0.25	0.43	0.49	0.20
Control Delay	16.0	1.0	38.1	38.6	37.7	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	1.0	38.1	38.6	37.7	32.5
Queue Length 50th (ft)	481	0	23	81	92	30
Queue Length 95th (ft)	553	11	m35	m111	150	63
Internal Link Dist (ft)	199			370	537	
Turn Bay Length (ft)			100			50
Base Capacity (vph)	4396	1160	180	362	362	308
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.08	0.25	0.43	0.49	0.20

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3305	527	337	684
v/c Ratio	1.10	0.73	1.15	0.47
Control Delay	73.6	38.9	118.6	19.1
Queue Delay	0.0	0.0	0.0	1.6
Total Delay	73.6	38.9	118.6	20.7
Queue Length 50th (ft)	~627	143	~232	171
Queue Length 95th (ft)	#700	191	m#266	m186
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	3012	722	292	1464
Starvation Cap Reductn	0	0	0	570
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.10	0.73	1.15	0.77

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3440	470	12	227
v/c Ratio	0.80	0.68	0.11	0.58
Control Delay	2.2	38.3	19.9	25.6
Queue Delay	0.4	0.1	0.0	0.0
Total Delay	2.6	38.4	19.9	25.6
Queue Length 50th (ft)	18	130	4	94
Queue Length 95th (ft)	m17	176	m8	m124
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	4298	694	114	389
Starvation Cap Reductn	332	0	0	0
Spillback Cap Reductn	0	14	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.87	0.69	0.11	0.58

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3437	513	305	216	714
v/c Ratio	1.05	0.70	0.89	1.01	0.54
Control Delay	42.2	39.1	62.8	76.3	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.3
Total Delay	42.2	39.1	62.8	76.3	9.1
Queue Length 50th (ft)	~605	143	161	~135	64
Queue Length 95th (ft)	#682	198	#314	m#191	m76
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	3288	731	341	214	1317
Starvation Cap Reductn	0	0	0	0	189
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.05	0.70	0.89	1.01	0.63

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3519	71	118	89	599
v/c Ratio	0.84	0.17	0.34	0.31	0.77
Control Delay	2.3	29.7	32.1	28.3	35.4
Queue Delay	0.2	0.0	0.0	0.0	0.0
Total Delay	2.5	29.7	32.1	28.3	35.4
Queue Length 50th (ft)	63	33	56	44	171
Queue Length 95th (ft)	m61	63	96	m57	m212
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	4214	418	357	297	794
Starvation Cap Reductn	150	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.87	0.17	0.33	0.30	0.75

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3380	70	61	35	169
v/c Ratio	0.79	0.18	0.18	0.12	0.43
Control Delay	2.7	30.4	29.9	4.4	7.6
Queue Delay	0.4	0.0	0.0	0.0	0.0
Total Delay	3.0	30.4	29.9	4.4	7.6
Queue Length 50th (ft)	37	33	28	2	10
Queue Length 95th (ft)	40	63	56	m4	14
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	4264	397	339	282	397
Starvation Cap Reductn	340	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.18	0.18	0.12	0.43

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	95	2821	426	2547	442	103	339	216	221	132
v/c Ratio	0.94	1.13	1.17	0.93	0.44	0.59	1.24	0.83	0.85	0.49
Control Delay	136.7	90.2	122.3	13.8	0.6	74.3	166.4	82.8	84.8	35.5
Queue Delay	0.0	127.6	0.0	25.4	0.7	0.0	24.6	0.0	0.0	0.0
Total Delay	136.7	217.7	122.3	39.2	1.3	74.3	191.0	82.8	84.8	35.5
Queue Length 50th (ft)	91	~1088	~241	277	0	91	~281	202	207	61
Queue Length 95th (ft)	#207	#1219	m174	m231	m0	151	#454	283	288	120
Internal Link Dist (ft)		625		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	101	2495	364	2741	1004	174	274	312	313	314
Starvation Cap Reductn	0	0	0	323	271	0	0	0	0	0
Spillback Cap Reductn	0	503	0	0	0	0	12	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.42	1.17	1.05	0.60	0.59	1.29	0.69	0.71	0.42

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	2158	1316	2511	1421	403	925
v/c Ratio	1.05	1.03	1.17	0.54	0.48	1.25
Control Delay	47.1	34.9	117.2	3.6	25.0	156.7
Queue Delay	61.3	0.0	16.7	0.0	0.0	0.0
Total Delay	108.4	34.9	133.8	3.6	25.0	156.7
Queue Length 50th (ft)	~815	~917	~994	11	234	~1051
Queue Length 95th (ft)	m474	m602	m#1010	m264	327	#1308
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	2054	1282	2152	2625	832	738
Starvation Cap Reductn	245	0	0	0	0	0
Spillback Cap Reductn	0	0	67	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.19	1.03	1.20	0.54	0.48	1.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	172	213	238	246	65	753	635	60	608
v/c Ratio	0.77	0.91	0.77	0.78	0.19	0.93	0.41	0.54	0.67
Control Delay	72.4	90.8	61.7	62.9	10.2	62.8	23.0	71.4	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	90.8	61.7	62.9	10.2	62.8	23.0	71.4	43.9
Queue Length 50th (ft)	130	165	184	190	0	294	171	46	223
Queue Length 95th (ft)	#225	#293	269	277	37	#412	243	91	302
Internal Link Dist (ft)		186		399			1098		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	224	234	377	381	408	808	1554	140	911
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.91	0.63	0.65	0.16	0.93	0.41	0.43	0.67

Intersection Summary

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



Lane Group	EBL	EBT	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	711	1842	2932	1184	1026	516	462
v/c Ratio	1.00	0.56	0.99	1.01	0.65	0.61	0.71
Control Delay	86.3	10.5	36.9	79.4	2.1	50.0	55.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	10.5	36.9	79.4	2.1	50.0	55.0
Queue Length 50th (ft)	381	216	380	~388	0	215	219
Queue Length 95th (ft)	m376	m210	#604	#492	0	276	289
Internal Link Dist (ft)		758	703				
Turn Bay Length (ft)	280			700		400	250
Base Capacity (vph)	713	3291	2974	1178	1568	850	647
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.56	0.99	1.01	0.65	0.61	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

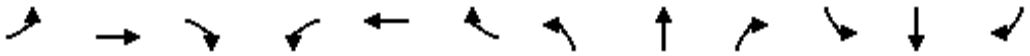
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	42	2821	505	708	2187	491	267	995	38	77
v/c Ratio	0.40	0.98	0.50	0.97	0.56	0.89	0.96	0.83	0.49	0.65
Control Delay	68.5	43.0	6.9	80.0	16.3	75.9	100.9	41.5	87.0	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.5	43.0	6.9	80.0	16.3	75.9	100.9	41.5	87.0	51.6
Queue Length 50th (ft)	38	721	73	331	333	242	268	432	35	23
Queue Length 95th (ft)	m65	#820	106	#458	365	#345	#463	536	64	61
Internal Link Dist (ft)		724			337		1021			431
Turn Bay Length (ft)	200		230	300				280		
Base Capacity (vph)	113	2883	1019	733	3921	551	279	1196	77	119
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.98	0.50	0.97	0.56	0.89	0.96	0.83	0.49	0.65

Intersection Summary

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	845	1360	482	608	1265	105	414	760	388	84	700	687
v/c Ratio	0.95	0.73	0.63	1.00	0.87	0.20	1.03	0.75	0.54	0.55	0.92	0.91
Control Delay	69.7	39.5	17.5	90.8	52.8	8.4	109.5	49.1	7.5	63.9	58.9	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	39.5	17.5	90.8	52.8	8.4	109.5	49.1	7.5	63.9	58.9	30.0
Queue Length 50th (ft)	~389	374	139	277	378	4	~199	318	11	39	330	226
Queue Length 95th (ft)	#528	431	261	#403	438	48	#306	395	96	m64	m#438	m#457
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	175		175	275		275	160			125		125
Base Capacity (vph)	889	1865	766	610	1529	549	403	1013	717	153	760	753
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.73	0.63	1.00	0.83	0.19	1.03	0.75	0.54	0.55	0.92	0.91

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2772	96	835	1038
v/c Ratio	0.93	0.87	0.57	0.98
Control Delay	19.6	40.8	6.1	55.9
Queue Delay	0.0	0.0	2.2	0.0
Total Delay	19.6	40.8	8.3	55.9
Queue Length 50th (ft)	226	58	48	302
Queue Length 95th (ft)	#341	m51	m42	#445
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2978	110	1468	1054
Starvation Cap Reductn	0	0	468	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	0.87	0.84	0.98

Intersection Summary

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2985	161	246	369
v/c Ratio	0.81	0.62	0.44	0.36
Control Delay	3.3	18.2	11.6	25.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.3	18.2	11.6	25.8
Queue Length 50th (ft)	65	28	42	85
Queue Length 95th (ft)	m70	m43	m60	120
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	3693	258	559	1026
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	16	0	0	25
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.81	0.62	0.44	0.37

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2874	277	623	766	200
v/c Ratio	0.97	0.98	0.42	1.00	0.55
Control Delay	27.4	78.5	12.8	68.9	33.5
Queue Delay	0.0	0.0	0.6	0.0	0.0
Total Delay	27.4	78.5	13.4	68.9	33.5
Queue Length 50th (ft)	246	170	84	230	87
Queue Length 95th (ft)	#544	m#264	m98	#355	158
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2959	283	1490	767	364
Starvation Cap Reductn	0	0	488	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.98	0.62	1.00	0.55

Intersection Summary

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

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

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3077	28	84	101	104	65
v/c Ratio	0.67	0.02	0.42	0.34	0.35	0.26
Control Delay	1.7	0.0	25.8	23.6	35.5	32.9
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	1.8	0.0	25.8	23.6	35.5	32.9
Queue Length 50th (ft)	29	0	32	39	55	33
Queue Length 95th (ft)	41	m0	m30	m35	82	56
Internal Link Dist (ft)	270			367	537	
Turn Bay Length (ft)						50
Base Capacity (vph)	4567	1201	378	549	549	468
Starvation Cap Reductn	210	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.02	0.22	0.18	0.19	0.14

Intersection Summary

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

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2901	49	107	177	218	116
v/c Ratio	0.79	0.05	0.36	0.31	0.38	0.24
Control Delay	15.8	2.4	25.7	22.9	26.6	24.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	2.4	25.7	22.9	26.6	24.5
Queue Length 50th (ft)	335	0	32	53	96	48
Queue Length 95th (ft)	386	13	m66	m97	153	88
Internal Link Dist (ft)	191			370	537	
Turn Bay Length (ft)			100			50
Base Capacity (vph)	3652	971	300	578	578	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	16	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.05	0.36	0.31	0.38	0.24

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3657	973	202	801
v/c Ratio	1.15	1.16	1.15	0.59
Control Delay	93.5	116.3	131.7	30.7
Queue Delay	0.0	0.0	0.0	1.7
Total Delay	93.5	116.3	131.7	32.5
Queue Length 50th (ft)	~720	~346	~140	187
Queue Length 95th (ft)	#791	#472	m#149	m192
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	3187	841	175	1363
Starvation Cap Reductn	0	0	0	376
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.15	1.16	1.15	0.81

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3829	588	55	545
v/c Ratio	0.99	0.64	0.40	1.05
Control Delay	8.1	32.5	25.8	75.7
Queue Delay	1.6	0.0	0.0	10.7
Total Delay	9.7	32.5	25.8	86.4
Queue Length 50th (ft)	88	154	20	~352
Queue Length 95th (ft)	m60	211	m35	m#531
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	3875	912	138	518
Starvation Cap Reductn	33	0	0	14
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.64	0.40	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3998	449	418	142	834
v/c Ratio	1.18	0.54	1.11	1.03	0.66
Control Delay	105.6	33.2	112.9	70.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.4
Total Delay	105.6	33.2	112.9	70.6	6.0
Queue Length 50th (ft)	~790	118	~271	~73	60
Queue Length 95th (ft)	m#813	167	#454	m#74	m59
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	3389	826	377	138	1258
Starvation Cap Reductn	0	0	0	0	117
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.18	0.54	1.11	1.03	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4115	191	254	134	189
v/c Ratio	0.96	0.48	0.75	0.69	0.25
Control Delay	5.7	35.8	48.8	43.7	24.8
Queue Delay	3.7	0.0	0.0	0.0	0.0
Total Delay	9.4	35.8	48.8	43.7	24.8
Queue Length 50th (ft)	85	96	136	62	43
Queue Length 95th (ft)	m66	155	#234	m#114	m73
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	4265	397	338	195	755
Starvation Cap Reductn	130	0	0	0	0
Spillback Cap Reductn	22	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.48	0.75	0.69	0.25

Intersection Summary

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

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

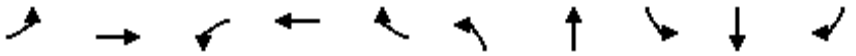
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4251	145	200	117	171
v/c Ratio	0.97	0.41	0.66	0.57	0.48
Control Delay	7.0	36.0	45.5	26.4	18.8
Queue Delay	6.7	0.0	0.0	0.0	0.0
Total Delay	13.7	36.0	45.5	26.4	18.8
Queue Length 50th (ft)	69	73	106	19	28
Queue Length 95th (ft)	m#73	125	173	66	43
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	4403	356	303	204	356
Starvation Cap Reductn	185	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.01	0.41	0.66	0.57	0.48

Intersection Summary

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

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

Forecast Year 2015 No Build Conditions



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	89	2710	237	2174	137	23	242	54	60	48
v/c Ratio	0.71	0.88	0.75	0.74	0.13	0.14	1.57	0.41	0.45	0.29
Control Delay	65.4	11.1	77.7	9.5	1.5	59.6	325.3	68.8	70.3	18.7
Queue Delay	0.0	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	11.6	77.7	9.6	1.5	59.6	325.3	68.8	70.3	18.7
Queue Length 50th (ft)	83	135	112	271	6	19	~312	50	56	0
Queue Length 95th (ft)	m101	#1029	m135	m365	m18	47	#467	84	92	33
Internal Link Dist (ft)		621		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	125	3084	342	2950	1031	165	154	231	236	257
Starvation Cap Reductn	0	103	0	115	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.91	0.69	0.77	0.13	0.14	1.57	0.23	0.25	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	2217	752	2126	889	342	435
v/c Ratio	0.60	0.58	0.54	0.61	1.44	2.00
Control Delay	0.8	2.5	2.6	13.5	260.6	498.0
Queue Delay	0.7	0.0	0.3	0.0	0.0	0.0
Total Delay	1.5	2.5	2.9	13.5	260.6	498.0
Queue Length 50th (ft)	0	0	99	511	~422	~617
Queue Length 95th (ft)	m2	m45	m93	m536	#618	#831
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	3666	1286	3948	1468	238	217
Starvation Cap Reductn	986	0	951	0	0	0
Spillback Cap Reductn	0	0	106	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.58	0.71	0.61	1.44	2.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

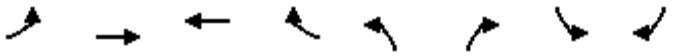
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	370	337	112	106	23	419	736	136	614
v/c Ratio	0.78	0.66	0.54	0.52	0.12	1.31	0.61	1.18	0.58
Control Delay	43.9	35.9	50.5	50.2	16.9	196.6	24.3	184.6	23.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	35.9	50.5	50.2	16.9	196.6	24.3	184.6	23.3
Queue Length 50th (ft)	206	173	69	65	0	~175	153	~104	116
Queue Length 95th (ft)	335	286	131	125	22	#318	261	#257	207
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	586	627	391	380	331	320	1203	115	1062
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.54	0.29	0.28	0.07	1.31	0.61	1.18	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	537	1632	1568	605	1105	1053	212	353
v/c Ratio	1.26	0.70	0.98	0.52	1.17	0.67	0.14	0.90
Control Delay	180.9	34.1	68.8	10.4	130.3	2.2	22.9	52.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	180.9	34.1	68.8	10.4	130.3	2.2	22.9	52.9
Queue Length 50th (ft)	~343	559	510	324	~614	0	57	151
Queue Length 95th (ft)	m#424	m576	#626	m438	#750	0	83	#319
Internal Link Dist (ft)		758	703					
Turn Bay Length (ft)	280			500	700		400	
Base Capacity (vph)	426	2315	1593	1167	947	1583	1489	391
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.26	0.70	0.98	0.52	1.17	0.67	0.14	0.90

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

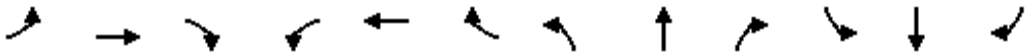
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	21	2389	479	684	1863	158	168	712	45	26
v/c Ratio	0.27	1.18	0.48	1.20	0.73	0.87	0.92	1.47	0.56	0.30
Control Delay	82.3	105.0	3.4	154.9	14.9	100.9	108.8	253.1	91.4	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.3	105.0	3.4	154.9	14.9	100.9	108.8	253.1	91.4	31.2
Queue Length 50th (ft)	20	~1412	0	~388	562	151	162	~694	41	0
Queue Length 95th (ft)	m30	#1504	51	#513	659	#290	#310	#943	73	25
Internal Link Dist (ft)		724			337		1021		431	
Turn Bay Length (ft)	200			300				280		50
Base Capacity (vph)	77	2020	990	570	2540	181	183	485	80	86
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	1.18	0.48	1.20	0.73	0.87	0.92	1.47	0.56	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	696	1288	176	141	392	91	492	606	467	99	416	625
v/c Ratio	0.87	1.06	0.30	0.57	0.68	0.34	0.83	0.50	0.81	0.44	0.51	0.89
Control Delay	51.1	76.7	19.3	56.5	48.4	39.9	55.0	30.1	41.8	53.0	38.0	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	76.7	19.3	56.5	48.4	39.9	55.0	30.1	41.8	53.0	38.0	30.2
Queue Length 50th (ft)	236	~515	61	48	135	53	170	174	265	36	139	178
Queue Length 95th (ft)	#365	#651	116	80	178	97	223	234	#453	m63	196	#610
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	170		175	275		275	160			125		125
Base Capacity (vph)	796	1219	588	294	724	332	683	1201	575	224	813	706
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	1.06	0.30	0.48	0.54	0.27	0.72	0.50	0.81	0.44	0.51	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2697	54	289	537
v/c Ratio	0.96	0.39	0.24	0.58
Control Delay	8.2	40.7	24.4	31.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.2	40.7	24.4	31.0
Queue Length 50th (ft)	39	30	68	136
Queue Length 95th (ft)	m40	m48	m88	189
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2824	173	1207	920
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.96	0.31	0.24	0.58

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2843	72	226	152
v/c Ratio	0.99	0.18	0.36	0.13
Control Delay	7.0	20.5	23.1	20.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.0	20.5	23.1	20.4
Queue Length 50th (ft)	26	36	118	30
Queue Length 95th (ft)	m27	m61	m161	47
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	2869	411	627	1139
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.99	0.18	0.36	0.13

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3015	64	446	471	68
v/c Ratio	1.08	0.43	0.36	0.55	0.16
Control Delay	54.7	58.4	12.4	32.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	58.4	12.4	32.9	11.6
Queue Length 50th (ft)	~679	38	55	125	5
Queue Length 95th (ft)	#779	m62	m65	170	36
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2801	165	1239	863	429
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.08	0.39	0.36	0.55	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3534	31	29	51	13
v/c Ratio	0.88	0.21	0.14	0.25	0.07
Control Delay	12.2	40.8	39.0	39.0	34.3
Queue Delay	157.9	0.0	0.0	0.0	0.0
Total Delay	170.1	40.8	39.0	39.0	34.3
Queue Length 50th (ft)	786	17	16	26	6
Queue Length 95th (ft)	m636	m24	m23	51	20
Internal Link Dist (ft)	270		367	537	
Turn Bay Length (ft)					50
Base Capacity (vph)	3996	452	625	625	531
Starvation Cap Reductn	1381	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.35	0.07	0.05	0.08	0.02

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3515	39	154	155	65
v/c Ratio	1.22	0.10	0.25	0.25	0.12
Control Delay	123.1	22.9	23.8	22.6	21.2
Queue Delay	150.9	0.0	0.0	0.0	0.0
Total Delay	274.0	22.9	23.8	22.6	21.2
Queue Length 50th (ft)	~891	15	60	62	25
Queue Length 95th (ft)	#983	m26	m83	99	50
Internal Link Dist (ft)	357		370	537	
Turn Bay Length (ft)		100			50
Base Capacity (vph)	2885	390	625	625	531
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	624	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.55	0.10	0.25	0.25	0.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2970	384	115	493
v/c Ratio	1.03	0.51	0.64	0.42
Control Delay	47.7	30.5	36.2	18.6
Queue Delay	18.9	0.0	0.3	0.0
Total Delay	66.6	30.5	36.6	18.6
Queue Length 50th (ft)	~697	90	52	126
Queue Length 95th (ft)	#793	128	m65	m116
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	2872	746	203	1306
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	123	0	6	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.08	0.51	0.58	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2950	388	14	255
v/c Ratio	1.00	0.37	0.05	0.43
Control Delay	16.5	24.2	23.8	28.3
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	17.0	24.2	23.8	28.3
Queue Length 50th (ft)	40	86	5	108
Queue Length 95th (ft)	m42	120	m10	m132
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	2958	1060	272	597
Starvation Cap Reductn	7	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.00	0.37	0.05	0.43

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2962	382	227	158	520
v/c Ratio	1.09	0.51	0.63	0.83	0.40
Control Delay	53.2	33.4	36.8	75.8	20.5
Queue Delay	12.1	0.0	0.0	9.4	0.0
Total Delay	65.3	33.4	36.8	85.2	20.5
Queue Length 50th (ft)	~668	98	102	92	78
Queue Length 95th (ft)	m#678	144	179	m#159	m129
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	2721	753	358	193	1295
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	68	0	1	19	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.12	0.51	0.64	0.91	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2984	59	98	74	497
v/c Ratio	0.87	0.14	0.27	0.25	0.63
Control Delay	4.4	28.0	29.4	34.8	40.0
Queue Delay	7.6	0.0	0.0	0.0	0.0
Total Delay	12.0	28.0	29.4	34.8	40.0
Queue Length 50th (ft)	50	27	44	38	148
Queue Length 95th (ft)	m54	52	77	m48	m170
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	3423	491	420	353	933
Starvation Cap Reductn	220	0	0	0	0
Spillback Cap Reductn	434	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.12	0.23	0.21	0.53

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2870	62	54	34	140
v/c Ratio	0.89	0.13	0.13	0.10	0.29
Control Delay	10.1	25.6	24.7	34.9	38.1
Queue Delay	7.4	0.0	0.0	0.0	0.0
Total Delay	17.5	25.6	24.7	34.9	38.1
Queue Length 50th (ft)	530	26	22	20	83
Queue Length 95th (ft)	206	49	43	47	131
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3239	491	420	352	491
Starvation Cap Reductn	362	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.00	0.13	0.13	0.10	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	95	2768	358	2353	474	29	310	204	210	144
v/c Ratio	0.81	1.05	1.04	0.88	0.45	0.18	1.94	0.89	0.91	0.57
Control Delay	115.2	75.8	106.2	13.6	1.0	60.5	475.7	94.8	98.5	41.2
Queue Delay	0.0	143.4	0.0	5.1	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	115.2	219.1	106.2	18.8	1.5	60.5	475.7	94.8	98.5	41.2
Queue Length 50th (ft)	91	~1040	~180	460	12	25	~435	193	200	69
Queue Length 95th (ft)	#192	#1123	m#231	m390	m16	55	#601	#320	#332	136
Internal Link Dist (ft)		626		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	118	2633	345	2680	1056	165	160	240	241	259
Starvation Cap Reductn	0	621	0	281	243	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.38	1.04	0.98	0.58	0.18	1.94	0.85	0.87	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	2509	864	2626	1500	380	576
v/c Ratio	0.71	0.67	0.68	1.01	1.47	2.29
Control Delay	3.4	2.6	20.0	39.7	270.3	621.0
Queue Delay	0.8	0.0	6.7	0.0	0.0	0.0
Total Delay	4.2	2.6	26.7	39.7	270.3	621.0
Queue Length 50th (ft)	149	0	624	~1130	~473	~851
Queue Length 95th (ft)	m136	m0	m335	m773	#679	#1081
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	3516	1282	3843	1492	259	251
Starvation Cap Reductn	630	0	1182	0	0	0
Spillback Cap Reductn	0	0	106	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.67	0.99	1.01	1.47	2.29

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

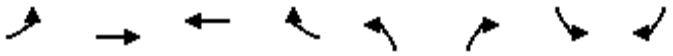
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	172	195	238	244	121	392	710	109	799
v/c Ratio	0.69	0.76	0.76	0.77	0.31	0.63	0.56	0.72	0.76
Control Delay	62.4	67.7	61.1	62.1	8.7	49.8	29.9	79.6	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	67.7	61.1	62.1	8.7	49.8	29.9	79.6	43.3
Queue Length 50th (ft)	125	144	184	189	0	145	226	83	300
Queue Length 95th (ft)	193	217	258	265	44	198	290	#218	#437
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	280	287	377	380	452	619	1267	151	1057
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.68	0.63	0.64	0.27	0.63	0.56	0.72	0.76

Intersection Summary

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



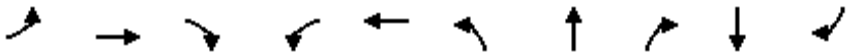
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	553	1584	2163	584	1489	895	549	489
v/c Ratio	1.25	0.63	1.21	0.48	1.76	0.57	0.40	1.21
Control Delay	167.3	23.0	135.2	5.8	377.3	1.5	30.3	143.9
Queue Delay	0.0	0.0	19.7	0.0	0.0	0.0	0.0	0.0
Total Delay	167.3	23.0	154.9	5.8	377.3	1.5	30.3	143.9
Queue Length 50th (ft)	~347	360	~887	131	~1038	0	180	~370
Queue Length 95th (ft)	m#421	m367	m#808	m139	#1175	0	229	#586
Internal Link Dist (ft)		758	703					
Turn Bay Length (ft)	280			500	700		400	
Base Capacity (vph)	443	2517	1788	1219	847	1568	1387	403
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	63	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.63	1.25	0.48	1.76	0.57	0.40	1.21

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



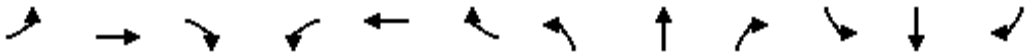
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	37	2505	468	611	2100	315	341	742	45	51
v/c Ratio	0.52	1.22	0.46	1.19	0.85	1.66	1.78	1.51	0.54	0.43
Control Delay	80.5	132.3	7.9	152.2	20.4	355.2	403.9	271.1	88.2	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	132.3	7.9	152.2	20.4	355.2	403.9	271.1	88.2	27.8
Queue Length 50th (ft)	34	~1523	144	~344	742	~436	~487	~915	41	0
Queue Length 95th (ft)	m57	#1652	231	#464	875	#640	#696	#1165	73	33
Internal Link Dist (ft)		724			337		1021		431	
Turn Bay Length (ft)	200			300				280		50
Base Capacity (vph)	71	2050	1023	515	2475	190	192	493	84	118
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	1.22	0.46	1.19	0.85	1.66	1.78	1.51	0.54	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	608	976	362	519	996	78	414	797	388	68	674	660
v/c Ratio	1.44	0.94	0.68	0.97	0.91	0.16	1.20	0.70	0.72	0.31	0.90	1.11
Control Delay	244.3	54.0	32.4	76.7	49.3	22.4	155.5	36.7	38.0	39.0	43.0	91.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	244.3	54.0	32.4	76.7	49.3	22.4	155.5	36.8	38.0	39.0	43.0	91.1
Queue Length 50th (ft)	~350	344	167	185	344	31	~179	261	217	24	318	~370
Queue Length 95th (ft)	#480	#473	276	#293	#463	67	#277	335	#360	m41	#434	#578
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	175		175	275		275	160			125		135
Base Capacity (vph)	423	1048	535	535	1113	513	346	1138	540	226	748	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	30	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.44	0.93	0.68	0.97	0.89	0.15	1.20	0.72	0.72	0.30	0.90	1.11

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2606	96	465	615
v/c Ratio	0.93	0.60	0.39	0.78
Control Delay	9.3	50.3	26.6	38.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.3	50.3	26.6	38.6
Queue Length 50th (ft)	69	55	126	163
Queue Length 95th (ft)	m73	m64	m146	#258
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	2804	172	1195	793
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	0.56	0.39	0.78

Intersection Summary

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2785	157	233	369
v/c Ratio	0.98	0.53	0.37	0.32
Control Delay	15.6	27.4	21.0	22.5
Queue Delay	38.1	0.0	0.0	0.0
Total Delay	53.7	27.4	21.0	22.5
Queue Length 50th (ft)	235	87	124	78
Queue Length 95th (ft)	m226	m129	m174	110
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	2841	299	627	1150
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	291	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.09	0.53	0.37	0.32

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2648	259	580	730	200
v/c Ratio	0.95	1.57	0.47	0.98	0.59
Control Delay	16.7	313.4	15.0	63.5	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	313.4	15.0	63.5	38.4
Queue Length 50th (ft)	103	~214	83	213	97
Queue Length 95th (ft)	#621	m#310	m98	#331	169
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2774	165	1239	748	339
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.95	1.57	0.47	0.98	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2857	75	89	58	22
v/c Ratio	0.74	0.43	0.37	0.24	0.11
Control Delay	8.8	55.7	52.7	35.9	31.3
Queue Delay	41.1	0.0	0.0	0.0	0.0
Total Delay	49.8	55.7	52.7	35.9	31.3
Queue Length 50th (ft)	331	43	50	30	10
Queue Length 95th (ft)	m640	m63	m70	53	25
Internal Link Dist (ft)	270		367	537	
Turn Bay Length (ft)					50
Base Capacity (vph)	3872	449	625	625	532
Starvation Cap Reductn	1243	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.09	0.17	0.14	0.09	0.04

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2719	94	156	192	102
v/c Ratio	0.95	0.26	0.25	0.31	0.19
Control Delay	27.1	26.1	24.9	23.4	21.6
Queue Delay	65.7	0.0	0.0	0.0	0.0
Total Delay	92.7	26.1	24.9	23.4	21.6
Queue Length 50th (ft)	479	46	76	78	39
Queue Length 95th (ft)	#646	m70	m103	127	74
Internal Link Dist (ft)	357		370	537	
Turn Bay Length (ft)		100			50
Base Capacity (vph)	2859	357	625	625	532
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	493	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.15	0.26	0.25	0.31	0.19

Intersection Summary

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3121	607	149	428
v/c Ratio	1.17	0.81	0.78	0.33
Control Delay	103.9	40.6	47.1	20.9
Queue Delay	82.7	0.0	57.8	0.0
Total Delay	186.6	40.7	104.9	20.9
Queue Length 50th (ft)	~769	160	91	116
Queue Length 95th (ft)	#864	#244	m110	m144
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	2664	753	201	1294
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	363	2	63	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.36	0.81	1.08	0.33

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3247	559	55	545
v/c Ratio	1.11	0.53	0.29	0.91
Control Delay	60.5	26.7	30.3	50.3
Queue Delay	0.0	0.0	0.0	46.5
Total Delay	60.5	26.7	30.3	96.8
Queue Length 50th (ft)	~790	132	23	290
Queue Length 95th (ft)	m61	183	m38	m#385
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	2929	1053	192	597
Starvation Cap Reductn	0	0	0	101
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.11	0.53	0.29	1.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3445	418	390	142	795
v/c Ratio	1.28	0.55	1.06	0.76	0.61
Control Delay	141.2	34.0	97.5	57.5	30.6
Queue Delay	54.2	0.0	2.1	9.3	0.4
Total Delay	195.4	34.0	99.6	66.9	31.0
Queue Length 50th (ft)	~884	110	~230	83	175
Queue Length 95th (ft)	m#767	157	#407	m86	m183
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	2696	762	367	193	1295
Starvation Cap Reductn	0	0	0	0	150
Spillback Cap Reductn	233	0	2	29	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.40	0.55	1.07	0.87	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3618	168	223	118	166
v/c Ratio	1.07	0.39	0.61	0.48	0.20
Control Delay	42.8	31.6	38.2	43.0	35.4
Queue Delay	130.8	0.0	0.0	0.0	0.0
Total Delay	173.6	31.6	38.2	43.0	35.4
Queue Length 50th (ft)	~831	81	113	55	41
Queue Length 95th (ft)	m433	126	170	m98	m60
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	3384	491	418	283	933
Starvation Cap Reductn	188	0	0	0	0
Spillback Cap Reductn	730	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.36	0.34	0.53	0.42	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3760	145	176	103	151
v/c Ratio	1.17	0.30	0.42	0.34	0.31
Control Delay	91.2	27.9	30.6	38.6	36.5
Queue Delay	50.1	0.0	0.0	0.0	0.0
Total Delay	141.4	27.9	30.6	38.6	36.5
Queue Length 50th (ft)	~953	64	81	59	86
Queue Length 95th (ft)	m#865	111	136	107	142
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3214	491	417	303	491
Starvation Cap Reductn	281	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.28	0.30	0.42	0.34	0.31

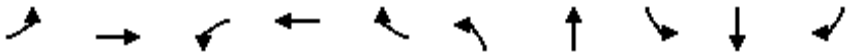
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Forecast Year 2015 With Project Conditions



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	89	2710	237	2174	137	23	242	54	60	48
v/c Ratio	0.62	1.01	0.54	0.81	0.15	0.14	1.11	0.27	0.29	0.21
Control Delay	74.4	37.3	46.9	13.2	1.3	55.8	128.3	51.6	52.3	13.2
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	37.3	46.9	13.3	1.3	55.8	128.3	51.6	52.3	13.2
Queue Length 50th (ft)	81	645	102	162	1	18	~171	46	51	0
Queue Length 95th (ft)	m104	#1257	m132	#977	m7	46	#324	66	71	26
Internal Link Dist (ft)		633		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	159	2685	466	2697	942	163	219	481	491	482
Starvation Cap Reductn	0	0	0	76	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	1.01	0.51	0.83	0.15	0.14	1.11	0.11	0.12	0.10

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	1955	1014	2126	889	342	435
v/c Ratio	0.80	0.79	0.82	0.34	0.50	0.70
Control Delay	13.1	15.1	17.4	0.2	31.4	38.7
Queue Delay	1.4	0.0	0.2	0.0	0.0	0.0
Total Delay	14.5	15.1	17.6	0.2	31.4	38.7
Queue Length 50th (ft)	134	361	445	0	211	299
Queue Length 95th (ft)	m140	m646	558	0	304	428
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	2454	1286	2595	2584	684	623
Starvation Cap Reductn	295	0	46	0	0	0
Spillback Cap Reductn	0	0	82	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.79	0.85	0.34	0.50	0.70

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	370	337	112	106	23	419	736	136	614
v/c Ratio	0.89	0.75	0.63	0.61	0.14	0.81	0.55	0.71	0.53
Control Delay	70.4	54.7	69.4	68.6	19.2	37.6	10.0	73.7	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	54.7	69.4	68.6	19.2	37.6	10.0	73.7	27.4
Queue Length 50th (ft)	294	249	95	90	0	158	154	112	162
Queue Length 95th (ft)	#452	360	150	144	25	m#219	215	174	240
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	450	482	332	323	285	515	1350	212	1152
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.70	0.34	0.33	0.08	0.81	0.55	0.64	0.53

Intersection Summary

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

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



Lane Group	EBL	EBT	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	537	1632	2173	1105	1053	212	353
v/c Ratio	0.74	0.53	1.03dr	0.83	0.67	0.23	0.57
Control Delay	40.8	3.7	28.7	49.9	2.2	34.9	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	3.7	28.7	49.9	2.2	34.9	28.6
Queue Length 50th (ft)	247	43	247	305	0	89	110
Queue Length 95th (ft)	318	96	264	361	0	m122	177
Internal Link Dist (ft)		758	703				
Turn Bay Length (ft)	280			700		400	250
Base Capacity (vph)	727	3087	2674	1378	1583	965	619
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.53	0.81	0.80	0.67	0.22	0.57

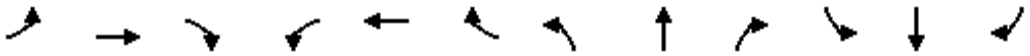
Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	21	2389	479	675	1863	210	116	734	26	45
v/c Ratio	0.25	0.84	0.49	0.77	0.43	0.47	0.51	0.58	0.33	0.47
Control Delay	57.9	27.2	5.5	51.7	10.0	55.8	61.5	26.6	71.4	48.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	27.2	5.5	51.7	10.0	55.8	61.5	26.6	71.4	48.8
Queue Length 50th (ft)	17	481	36	273	209	92	102	234	22	16
Queue Length 95th (ft)	m30	484	70	344	233	136	174	306	47	46
Internal Link Dist (ft)		724			337		1021			431
Turn Bay Length (ft)	200		330	300				280	50	
Base Capacity (vph)	83	2831	971	880	4333	445	226	1268	79	95
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.84	0.49	0.77	0.43	0.47	0.51	0.58	0.33	0.47

Intersection Summary

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	696	1288	176	141	392	91	492	606	467	99	406	625
v/c Ratio	0.77	0.90	0.25	0.78	0.67	0.27	0.92	0.52	0.75	0.56	0.52	0.79
Control Delay	43.3	41.1	8.4	82.0	50.6	9.8	71.0	33.5	32.8	60.9	33.5	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	41.1	8.4	82.0	50.6	9.8	71.0	33.5	32.8	60.9	33.5	18.8
Queue Length 50th (ft)	233	442	25	54	146	0	187	193	223	38	150	124
Queue Length 95th (ft)	#372	542	69	#119	183	42	#284	252	360	m67	158	#307
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	175		175	275		275	160			125		125
Base Capacity (vph)	900	1504	751	181	802	429	537	1162	620	177	781	790
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.86	0.23	0.78	0.49	0.21	0.92	0.52	0.75	0.56	0.52	0.79

Intersection Summary

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2712	54	289	537
v/c Ratio	0.79	0.43	0.24	0.57
Control Delay	5.2	46.1	25.3	29.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.2	46.1	25.3	29.8
Queue Length 50th (ft)	65	30	68	135
Queue Length 95th (ft)	73	m56	m98	183
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	3430	135	1211	947
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	0.40	0.24	0.57

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2866	81	253	161
v/c Ratio	0.74	0.25	0.50	0.17
Control Delay	1.8	16.5	20.4	24.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1.8	16.5	20.4	24.7
Queue Length 50th (ft)	19	17	128	35
Queue Length 95th (ft)	26	m31	m150	51
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	3890	329	506	921
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.74	0.25	0.50	0.17

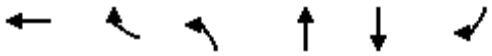
Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3059	64	446	471	68
v/c Ratio	0.85	0.51	0.40	0.60	0.18
Control Delay	9.7	38.1	13.4	35.1	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	38.1	13.4	35.1	18.8
Queue Length 50th (ft)	118	31	54	127	16
Queue Length 95th (ft)	182	m52	m71	173	48
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	3618	125	1118	790	380
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.85	0.51	0.40	0.60	0.18

Intersection Summary

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



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3584	76	31	29	54	41
v/c Ratio	0.74	0.06	0.21	0.14	0.26	0.23
Control Delay	0.6	0.0	37.5	35.4	39.1	38.4
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	0.9	0.0	37.5	35.4	39.1	38.4
Queue Length 50th (ft)	4	0	16	14	28	21
Queue Length 95th (ft)	11	m0	m26	m24	53	43
Internal Link Dist (ft)	270			367	537	
Turn Bay Length (ft)						50
Base Capacity (vph)	4872	1278	344	476	476	405
Starvation Cap Reductn	466	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.06	0.09	0.06	0.11	0.10

Intersection Summary

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

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	3569	93	39	154	179	62
v/c Ratio	0.88	0.09	0.16	0.34	0.39	0.16
Control Delay	15.1	1.4	27.7	28.7	30.9	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	1.4	27.7	28.7	30.9	27.2
Queue Length 50th (ft)	406	0	16	69	83	27
Queue Length 95th (ft)	468	14	m30	m104	137	57
Internal Link Dist (ft)	357			370	537	
Turn Bay Length (ft)			100			50
Base Capacity (vph)	4078	1084	247	455	455	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.09	0.16	0.34	0.39	0.16

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2970	384	115	493
v/c Ratio	0.82	0.36	0.43	0.44
Control Delay	16.8	24.2	25.9	22.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.8	24.2	25.9	22.7
Queue Length 50th (ft)	350	85	53	121
Queue Length 95th (ft)	404	118	m94	m170
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	3612	1080	268	1115
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.82	0.36	0.43	0.44

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	2950	388	14	255
v/c Ratio	0.82	0.37	0.05	0.43
Control Delay	9.7	24.4	12.8	16.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.7	24.4	12.8	16.5
Queue Length 50th (ft)	425	86	4	77
Queue Length 95th (ft)	400	121	m8	m115
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	3616	1053	269	593
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.82	0.37	0.05	0.43

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2962	382	227	158	520
v/c Ratio	0.82	0.34	0.45	0.58	0.46
Control Delay	5.1	24.0	27.1	18.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	24.0	27.1	18.4	10.5
Queue Length 50th (ft)	52	84	98	29	48
Queue Length 95th (ft)	110	123	166	m43	m63
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	3606	1126	505	272	1126
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.34	0.45	0.58	0.46

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2992	59	98	74	497
v/c Ratio	0.73	0.14	0.26	0.24	0.60
Control Delay	3.7	27.3	28.6	35.5	39.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	27.3	28.6	35.5	39.5
Queue Length 50th (ft)	51	26	43	38	133
Queue Length 95th (ft)	105	51	76	m54	175
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	4108	512	438	368	973
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	0.12	0.22	0.20	0.51

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	2879	62	54	34	140
v/c Ratio	0.73	0.13	0.13	0.10	0.29
Control Delay	3.4	25.6	24.7	20.2	23.6
Queue Delay	0.1	0.0	0.0	0.0	0.0
Total Delay	3.6	25.6	24.7	20.2	23.6
Queue Length 50th (ft)	45	26	22	21	85
Queue Length 95th (ft)	42	49	43	48	134
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	3945	491	420	352	491
Starvation Cap Reductn	226	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.13	0.13	0.10	0.29

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	95	2768	358	2353	474	29	310	204	210	144
v/c Ratio	0.83	1.15	1.13	0.97	0.50	0.12	1.00	0.81	0.83	0.53
Control Delay	100.2	110.3	114.8	26.7	4.4	54.0	90.3	80.0	82.3	35.2
Queue Delay	0.0	0.0	0.0	124.3	0.6	0.0	0.0	0.0	0.0	0.1
Total Delay	100.2	110.3	114.8	151.0	5.1	54.0	90.3	80.0	82.3	35.3
Queue Length 50th (ft)	85	~1081	~193	600	29	23	202	191	197	65
Queue Length 95th (ft)	m#138	#1242	m#208	m#968	m40	53	#377	262	269	123
Internal Link Dist (ft)		627		464			165		275	
Turn Bay Length (ft)	230		290		250	150		75		50
Base Capacity (vph)	115	2410	316	2430	950	232	311	333	335	339
Starvation Cap Reductn	0	0	0	212	194	0	0	0	0	0
Spillback Cap Reductn	0	0	0	598	0	0	0	0	0	9
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	1.15	1.13	1.28	0.63	0.13	1.00	0.61	0.63	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	EBT	EBR	WBT	WBR	SBL2	SBL
Lane Group Flow (vph)	2276	1097	2626	1500	380	576
v/c Ratio	0.89	0.86	0.95	0.57	0.63	0.98
Control Delay	6.9	14.4	15.4	5.7	40.5	74.8
Queue Delay	14.9	0.0	57.8	0.0	0.0	0.0
Total Delay	21.8	14.4	73.2	5.7	40.5	74.8
Queue Length 50th (ft)	153	1041	406	288	279	514
Queue Length 95th (ft)	m120	m265	m419	m309	395	#765
Internal Link Dist (ft)	464		758			195
Turn Bay Length (ft)		450				
Base Capacity (vph)	2551	1282	2752	2625	606	588
Starvation Cap Reductn	324	0	31	0	0	0
Spillback Cap Reductn	0	0	432	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.86	1.13	0.57	0.63	0.98

Intersection Summary

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

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	172	195	225	231	114	392	710	109	799
v/c Ratio	0.70	0.78	0.78	0.79	0.31	0.79	0.54	0.62	0.61
Control Delay	71.7	77.8	72.6	73.8	9.8	63.1	14.2	72.7	38.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	77.8	72.6	73.8	9.8	63.1	14.2	72.7	38.3
Queue Length 50th (ft)	149	171	206	212	0	196	218	95	315
Queue Length 95th (ft)	218	246	296	304	52	m201	m263	159	424
Internal Link Dist (ft)		186		399			795		836
Turn Bay Length (ft)			190		190	200		115	
Base Capacity (vph)	283	290	350	353	422	551	1322	201	1302
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.67	0.64	0.65	0.27	0.71	0.54	0.54	0.61

Intersection Summary

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



Lane Group	EBL	EBT	WBT	NBL	NBR	SBL	SBR
Lane Group Flow (vph)	553	1584	2747	1489	895	549	489
v/c Ratio	0.98	0.55	0.97	0.97	0.57	0.49	0.95
Control Delay	67.1	29.9	39.4	63.2	1.5	21.3	90.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	29.9	39.4	63.2	1.5	21.3	90.9
Queue Length 50th (ft)	283	507	620	474	0	194	268
Queue Length 95th (ft) m	#370	559	#682	#578	0	180	#384
Internal Link Dist (ft)		758	703				
Turn Bay Length (ft)	280			700		400	250
Base Capacity (vph)	564	2890	2829	1534	1568	1117	514
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.55	0.97	0.97	0.57	0.49	0.95

Intersection Summary

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

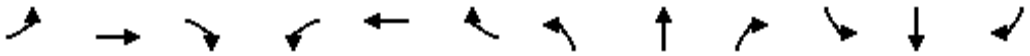
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	37	2505	468	582	2100	425	231	769	26	70
v/c Ratio	0.43	0.89	0.42	0.82	0.54	0.67	0.72	0.64	0.34	0.59
Control Delay	79.9	24.4	2.7	63.5	16.1	58.2	66.5	25.7	77.2	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.9	24.4	2.7	63.5	16.1	58.2	66.5	25.7	77.2	45.1
Queue Length 50th (ft)	35	448	20	263	313	202	221	241	23	17
Queue Length 95th (ft)	m64	492	64	333	345	265	#357	308	49	54
Internal Link Dist (ft)		724			337		1021			431
Turn Bay Length (ft)	200		230	300				280	50	
Base Capacity (vph)	91	2828	1111	711	3900	638	323	1197	77	118
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.89	0.42	0.82	0.54	0.67	0.72	0.64	0.34	0.59

Intersection Summary

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

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	608	976	362	519	996	78	414	797	388	68	645	660
v/c Ratio	0.97	0.88	0.56	0.98	1.00	0.16	0.97	0.68	0.50	0.40	0.75	1.00
Control Delay	76.5	49.2	18.0	83.4	72.4	8.5	90.2	38.7	5.4	50.8	35.5	52.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	49.2	18.0	83.4	72.4	8.5	90.2	38.7	5.4	50.8	35.5	52.5
Queue Length 50th (ft)	242	375	96	208	~408	2	167	286	0	27	215	139
Queue Length 95th (ft)	#360	#488	196	#321	#556	39	#269	360	71	m49	264	#740
Internal Link Dist (ft)		282			596			1700			665	
Turn Bay Length (ft)	175		175	275		275	160			125		125
Base Capacity (vph)	626	1110	641	530	993	502	425	1168	782	172	855	660
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.88	0.56	0.98	1.00	0.16	0.97	0.68	0.50	0.40	0.75	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2597	96	465	615
v/c Ratio	0.80	0.62	0.35	0.67
Control Delay	8.4	43.1	22.8	32.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	43.1	22.8	32.1
Queue Length 50th (ft)	167	57	129	157
Queue Length 95th (ft)	176	m95	m171	220
Internal Link Dist (ft)	266		274	629
Turn Bay Length (ft)		95		
Base Capacity (vph)	3230	174	1311	918
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.55	0.35	0.67

Intersection Summary

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

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	2771	157	233	369
v/c Ratio	0.78	0.55	0.38	0.33
Control Delay	5.4	19.1	12.0	23.6
Queue Delay	0.1	0.0	0.0	0.0
Total Delay	5.5	19.1	12.0	23.7
Queue Length 50th (ft)	95	34	36	81
Queue Length 95th (ft)	104	m132	m55	114
Internal Link Dist (ft)	293		275	724
Turn Bay Length (ft)		55		
Base Capacity (vph)	3531	287	609	1117
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	58	0	0	25
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.80	0.55	0.38	0.34

Intersection Summary

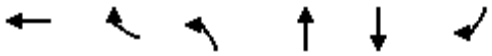
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2626	259	580	730	200
v/c Ratio	0.91	0.88	0.38	0.93	0.52
Control Delay	20.5	59.3	11.2	54.2	30.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.5	59.3	11.2	54.2	30.7
Queue Length 50th (ft)	197	152	71	215	81
Queue Length 95th (ft)	241	m#253	m89	#325	150
Internal Link Dist (ft)	301		277	1375	
Turn Bay Length (ft)		90			75
Base Capacity (vph)	2887	295	1534	786	381
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.91	0.88	0.38	0.93	0.52

Intersection Summary

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

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



Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2814	22	75	89	92	58
v/c Ratio	0.61	0.02	0.39	0.32	0.33	0.24
Control Delay	1.4	0.0	24.8	22.6	35.8	32.7
Queue Delay	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	0.0	24.8	22.6	35.8	32.7
Queue Length 50th (ft)	19	0	30	36	50	29
Queue Length 95th (ft)	33	m0	m27	m31	75	51
Internal Link Dist (ft)	270			367	537	
Turn Bay Length (ft)						50
Base Capacity (vph)	4614	1211	411	590	590	503
Starvation Cap Reductn	366	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.02	0.18	0.15	0.16	0.12

Intersection Summary

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

Lane Group	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	2657	37	94	156	192	102
v/c Ratio	0.74	0.04	0.28	0.26	0.33	0.20
Control Delay	14.7	2.7	28.1	26.0	25.4	23.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	2.7	28.1	26.0	25.4	23.4
Queue Length 50th (ft)	290	0	32	52	83	41
Queue Length 95th (ft)	336	12	m65	m96	134	77
Internal Link Dist (ft)	357			370	537	
Turn Bay Length (ft)			100			50
Base Capacity (vph)	3611	956	332	590	590	503
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	23	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.04	0.28	0.26	0.33	0.20

Intersection Summary

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3121	607	149	428
v/c Ratio	0.88	0.56	0.88	0.38
Control Delay	19.4	27.7	65.3	24.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.4	27.7	65.3	24.3
Queue Length 50th (ft)	403	148	85	112
Queue Length 95th (ft)	463	203	m#151	m150
Internal Link Dist (ft)	284	285		274
Turn Bay Length (ft)			95	
Base Capacity (vph)	3562	1076	170	1118
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.88	0.56	0.88	0.38

Intersection Summary

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

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

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	3247	559	55	545
v/c Ratio	0.91	0.53	0.28	0.91
Control Delay	10.1	27.1	17.9	37.1
Queue Delay	0.0	0.0	0.0	5.8
Total Delay	10.1	27.1	17.9	42.9
Queue Length 50th (ft)	256	135	16	205
Queue Length 95th (ft)	188	186	m30	m#444
Internal Link Dist (ft)	265	809		275
Turn Bay Length (ft)			100	
Base Capacity (vph)	3569	1059	193	600
Starvation Cap Reductn	0	0	0	33
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.91	0.53	0.28	0.96

Intersection Summary

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3445	418	390	142	795
v/c Ratio	0.97	0.37	0.76	0.55	0.70
Control Delay	16.4	24.6	38.9	8.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.4
Total Delay	16.4	24.6	38.9	8.5	7.2
Queue Length 50th (ft)	185	95	197	20	60
Queue Length 95th (ft)	#257	136	#336	m22	m64
Internal Link Dist (ft)	291	1097			277
Turn Bay Length (ft)			90	90	
Base Capacity (vph)	3560	1140	511	257	1140
Starvation Cap Reductn	0	0	0	0	82
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.97	0.37	0.76	0.55	0.75

Intersection Summary

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

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3618	168	223	118	166
v/c Ratio	0.86	0.42	0.66	0.55	0.22
Control Delay	3.5	34.5	42.9	37.2	26.3
Queue Delay	0.1	0.0	0.0	0.0	0.0
Total Delay	3.5	34.5	42.9	37.2	26.3
Queue Length 50th (ft)	97	83	116	54	37
Queue Length 95th (ft)	m91	138	186	m106	70
Internal Link Dist (ft)	268	305			367
Turn Bay Length (ft)			75	100	
Base Capacity (vph)	4228	397	338	214	755
Starvation Cap Reductn	26	0	0	0	0
Spillback Cap Reductn	45	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.42	0.66	0.55	0.22

Intersection Summary

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

Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	3760	145	176	103	151
v/c Ratio	0.86	0.41	0.58	0.50	0.42
Control Delay	3.5	36.0	41.6	24.0	18.2
Queue Delay	0.3	0.0	0.0	0.0	0.0
Total Delay	3.8	36.0	41.6	24.0	18.2
Queue Length 50th (ft)	61	73	91	22	23
Queue Length 95th (ft)	64	125	153	100	62
Internal Link Dist (ft)	268	314			370
Turn Bay Length (ft)				100	
Base Capacity (vph)	4366	356	303	204	356
Starvation Cap Reductn	166	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.90	0.41	0.58	0.50	0.42

Intersection Summary

APPENDIX F
TI Calculations

SR-178 (24th St/23rd St) Improvements Proejct Traffic Index (TI) Calculations

Location	2035 Directional ADT*	Truck Percentage	Daily Truck Volume	ESAL	Number of Lanes	Lane Distribution Factor	TI (calculated)	TI (from Table 613.3C)	Recommended TI for Use
EB 24th St - Camino Del Rio to SR-99 SB	40,481	4%	1,619	9,519,720	3	0.8	11.5	12.0	**12.0**
WB 24th St - Camino Del Rio to SR-99 SB	42,486	4%	1,699	9,990,120	3	0.8	11.5	12.0	**12.0**
EB 24th St - SR-99 SB to SR-99 NB	34,297	4%	1,372	8,067,360	4	0.8	11.2	11.5	**11.5**
WB 24th St - SR-99 SB to SR-99 NB	41,021	4%	1,641	9,649,080	4	0.8	11.5	12.0	**12.0**
EB 24th St - SR-99 NB to Oak	36,447	4%	1,458	8,573,040	4	0.8	11.3	11.5	**11.5**
WB 24th St - SR-99 NB to Oak	45,019	4%	1,801	10,589,880	4	0.8	11.6	12.0	**12.0**
EB 24th St - Oak to C	40,801	3%	1,224	7,197,120	3	0.8	11.1	11.5	**11.5**
WB 24th St - Oak to C	49,640	3%	1,489	8,755,320	3	0.8	11.3	11.5	**11.5**
EB 24th St - D to M	44,590	4%	1,784	10,489,920	4	0.8	11.6	12.0	**12.0**
WB 24th St - D to M	45,878	4%	1,835	10,789,800	4	0.8	11.6	12.0	**12.0**
WB SR-178 East of M Street	43,534	4%	1,741	10,237,080	4	0.8	11.6	12.0	**12.0**
EB SR-178 East of M Street	47,932	4%	1,917	11,271,960	4	0.8	11.7	12.0	**12.0**
SB Buck Owens north of 24th St	10,666	4%	427	2,510,760	2	1.0	10.0	10.0	**10.0**
NB Buck Owens north of 24th St	17,468	4%	699	4,110,120	2	1.0	10.6	10.5	**10.5**
SB Oak St north of 24th St	1,000	4%	40	235,200	2	1.0	7.6	7.5	**7.5**
NB Oak St north of 24th St	1,000	4%	40	235,200	1	1.0	7.6	7.5	**7.5**
SB Oak St south of 24th St	20,249	4%	810	4,762,800	2	1.0	10.8	11.0	**11.0**
NB Oak St south of 24th St	18,258	4%	730	4,292,400	2	1.0	10.7	10.5	**10.5**
EB Frontage between Beech St and Elm St	1,000	2%	20	117,600	1	1.0	7.0	7.0	**7.0**
WB Frontage between Beech St and Elm St	1,000	2%	20	117,600	1	1.0	7.0	7.0	**7.0**
SR-99 NB Off-Ramp at 24th Street	19,769	4%	791	4,651,080	2	1.0	10.8	11.0	**11.0**
SR-99 SB Loop On-Ramp at 24th Street	10,670	4%	427	2,510,760	2	1.0	10	10.0	**10.0**
SR-99 SB Direct On-Ramp at 24th Street	8,816	4%	353	2,075,640	2	1.0	9.8	10.0	**10.0**
SR-99 SB Off-Ramp at 24th Street	15,280	4%	611	3,592,680	2	1.0	10.5	10.5	**10.5**
SR-99 NB Auxilary Lane at 24th Street	Assume same TI as SR-99 NB Off-Ramp at 24th Street								**11.0**
SR-99 NB Aux Lane (first 2' Shldr) at 24th St	Assume same TI as SR-99 NB Auxilary Lane at 24th Street								**11.0**
SR-99 NB Aux Lane (remaining Shldr) at 24th St	--			71,854	1	1.0	6.6	6.5	**6.5**

* 2035 ADT from Traffic Study

Assumptions:

Caltrans HDM (6th Edition) Methodology utilized

20-year ESAL Constant of 5,880 used on 24th St assuming all trucks are 4 or more axles (Table 613.3A in HDM)

TI calcs on 24th St & SR-178 are for outside lane (hence LDF of 0.8 from Table 613.3B)

Assume ADT on Oak Street north of 24th and Frontage between Beech St and Elm Street ADT = 2,000

Aux lane shoulder TI determined per HDM 613.5 (2) (a)

APPENDIX G
Parking Count Data

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	East Side	West Side	North Side	South Side
Segment:	**D St South of 23rd St**		**D St From 24th St to 23rd St**		**23rd St From D St to E St**	
8:00 AM	5	4	7	6	0	1
9:00 AM	4	3	5	5	0	1
10:00 AM	3	3	5	5	0	2
11:00 AM	3	5	6	4	0	0
12:00 PM	4	2	6	5	0	0
1:00 PM	7	2	8	5	0	0
2:00 PM	6	2	7	3	0	0
3:00 PM	4	5	5	4	0	1
4:00 PM	5	3	5	6	0	1
5:00 PM	5	4	5	4	0	0
6:00 PM	5	3	6	4	0	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**E St South of 23rd St**		**23rd St From E St to F St**		**F St South of 23rd St**	
8:00 AM	3	1	0	1	0	0
9:00 AM	7	3	0	1	0	0
10:00 AM	7	2	0	1	0	0
11:00 AM	6	4	0	0	0	0
12:00 PM	6	3	0	0	0	0
1:00 PM	5	2	0	0	0	0
2:00 PM	5	1	0	0	0	0
3:00 PM	5	3	0	1	0	0
4:00 PM	6	2	0	1	0	0
5:00 PM	4	2	0	0	0	0
6:00 PM	3	3	0	0	0	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**F St From 24th St to 23rd St**		**23rd St From F St to G St**		**G St South of 23rd St**	
8:00 AM	0	0	0	0	4	3
9:00 AM	0	0	0	0	3	2
10:00 AM	0	0	0	0	3	2
11:00 AM	0	0	0	0	3	3
12:00 PM	0	0	0	0	3	3
1:00 PM	0	0	0	0	4	1
2:00 PM	0	0	0	0	3	1
3:00 PM	0	0	0	0	2	2
4:00 PM	0	0	0	0	2	2
5:00 PM	0	0	0	0	3	1
6:00 PM	0	0	0	0	3	3

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	North Side	South Side	East Side	West Side	East Side	West Side
Segment:	**23rd From G St to H St**		**H St South of 23rd St**		**H St From 24th St to 23rd St**	
8:00 AM	0	1	0	0	0	1
9:00 AM	0	2	0	1	0	3
10:00 AM	0	2	0	2	0	3
11:00 AM	0	2	0	0	0	2
12:00 PM	0	2	0	0	0	2
1:00 PM	0	1	1	0	0	2
2:00 PM	0	3	0	0	0	4
3:00 PM	0	1	0	2	1	0
4:00 PM	0	1	0	1	0	1
5:00 PM	0	0	0	0	0	1
6:00 PM	0	0	0	1	0	1

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	North Side	South Side	East Side	West Side	North Side	South Side
Segment:	**23rd St From H St to Eye St**		**Eye St South of 23rd St**		**23rd St From Eye St to Chester Ave**	
8:00 AM	0	0	3	2	0	0
9:00 AM	0	0	1	3	0	0
10:00 AM	0	0	3	1	1	0
11:00 AM	0	0	4	4	0	0
12:00 PM	0	0	3	4	1	0
1:00 PM	0	0	3	1	2	0
2:00 PM	0	0	3	1	1	0
3:00 PM	0	0	0	5	1	0
4:00 PM	0	0	1	5	1	0
5:00 PM	0	0	0	4	1	0
6:00 PM	0	0	1	4	1	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	East Side	West Side	North Side	South Side
Segment:	**Chester Ave South of 23rd St**		**Chester Ave From 24th St to 23rd St**		**23rd St From Chester Ave to K St**	
8:00 AM	0	1	0	0	0	0
9:00 AM	2	2	0	2	0	0
10:00 AM	1	2	0	3	0	0
11:00 AM	4	3	1	5	0	0
12:00 PM	2	1	2	4	0	0
1:00 PM	2	0	1	6	0	0
2:00 PM	2	1	1	5	0	0
3:00 PM	0	4	0	2	0	0
4:00 PM	1	2	0	4	0	0
5:00 PM	0	3	0	4	0	0
6:00 PM	0	3	0	4	0	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**K St South of 23rd St**		**23rd St From K St to L St**		**L St South of 23rd St**	
8:00 AM	1	2	0	0	3	0
9:00 AM	2	2	0	0	4	0
10:00 AM	2	2	0	0	3	0
11:00 AM	2	2	0	0	3	0
12:00 PM	1	3	0	0	1	0
1:00 PM	1	1	0	0	0	0
2:00 PM	2	1	0	0	0	0
3:00 PM	0	1	0	0	2	0
4:00 PM	0	0	1	0	2	0
5:00 PM	0	0	1	0	3	0
6:00 PM	0	0	0	0	2	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**L St From 24th St to 23rd St**		**23rd St From L St to M St**		**M St South of 23rd St**	
8:00 AM	7	0	2	0	1	2
9:00 AM	7	0	3	0	1	5
10:00 AM	7	0	7	0	1	5
11:00 AM	7	0	4	0	1	4
12:00 PM	7	0	3	0	1	2
1:00 PM	7	0	5	0	0	4
2:00 PM	7	0	5	0	0	3
3:00 PM	6	0	5	0	1	6
4:00 PM	5	0	4	0	1	7
5:00 PM	5	0	3	0	1	6
6:00 PM	6	0	4	0	1	3

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	East Side	West Side	North Side	South Side
Segment:	**M St From 24th St to 23rd St**		**M St North of 24th St**		**24th St From L St to M St**	
8:00 AM	1	5	1	1	0	0
9:00 AM	4	8	1	3	0	0
10:00 AM	5	8	4	2	0	0
11:00 AM	5	8	2	3	0	0
12:00 PM	6	8	1	1	0	0
1:00 PM	7	8	2	2	0	0
2:00 PM	6	8	1	2	0	0
3:00 PM	6	6	3	6	0	0
4:00 PM	6	7	4	2	0	0
5:00 PM	6	7	1	4	0	0
6:00 PM	5	6	0	2	0	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**L St North of 24th St**		**24th St From K St to L St**		**K St North of 24th St**	
8:00 AM	5	5	0	0	5	5
9:00 AM	5	4	0	0	5	6
10:00 AM	3	4	0	0	5	8
11:00 AM	5	5	0	0	5	5
12:00 PM	3	2	0	0	7	5
1:00 PM	3	3	0	0	5	5
2:00 PM	5	3	0	0	4	5
3:00 PM	5	3	1	0	4	3
4:00 PM	5	3	0	0	3	2
5:00 PM	4	3	0	0	4	3
6:00 PM	5	3	0	0	2	3

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**K St From 24th St to 23rd St**		**24th St From Chester Ave to K St**		**Chester Ave North of 24th St**	
8:00 AM	1	1	0	0	0	0
9:00 AM	3	4	0	0	0	0
10:00 AM	2	2	0	1	0	0
11:00 AM	3	2	1	5	2	0
12:00 PM	2	2	1	3	1	0
1:00 PM	2	0	0	0	2	0
2:00 PM	2	1	0	0	2	0
3:00 PM	4	0	0	0	1	0
4:00 PM	4	0	0	1	2	0
5:00 PM	3	1	0	0	0	0
6:00 PM	0	2	0	0	0	1

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	North Side	South Side	East Side	West Side	East Side	West Side
Segment:	**24th St From Eye St to Chester Ave**		**Eye St North of 24th St**		**Eye St From 24th St to 23rd St**	
8:00 AM	0	0	3	3	0	3
9:00 AM	0	0	4	2	3	4
10:00 AM	0	2	3	2	2	5
11:00 AM	3	0	3	0	2	4
12:00 PM	2	0	3	1	1	4
1:00 PM	1	0	2	1	1	3
2:00 PM	1	0	2	2	2	1
3:00 PM	2	0	2	2	0	5
4:00 PM	3	0	2	4	1	6
5:00 PM	1	0	2	5	1	3
6:00 PM	0	0	2	3	1	3

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	North Side	South Side	East Side	West Side	North Side	South Side
Segment:	**24th St From H St to Eye St**		**H St North of 24th St**		**24th St From G St to H St**	
8:00 AM	0	0	2	3	0	0
9:00 AM	0	0	2	4	0	0
10:00 AM	0	0	3	4	0	0
11:00 AM	0	0	2	4	0	0
12:00 PM	0	0	2	4	0	0
1:00 PM	0	0	2	3	0	0
2:00 PM	0	0	2	4	0	0
3:00 PM	0	0	4	2	0	0
4:00 PM	0	0	6	2	0	0
5:00 PM	0	0	4	1	0	0
6:00 PM	0	0	3	1	0	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	East Side	West Side	North Side	South Side
Segment:	**G St North of 24th St**		**G St From 24th St to 23rd St**		**24th St From F St to G St**	
8:00 AM	0	9	3	2	0	0
9:00 AM	0	8	4	2	0	0
10:00 AM	0	9	8	4	0	0
11:00 AM	3	13	6	3	0	0
12:00 PM	2	11	5	4	0	0
1:00 PM	2	9	5	6	0	0
2:00 PM	2	8	5	5	0	0
3:00 PM	1	10	5	3	0	0
4:00 PM	1	7	3	5	0	0
5:00 PM	3	7	3	3	0	0
6:00 PM	1	11	0	3	0	0

Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**F St North of 24th St**		**24th St From E St to F St**		**E St North of 24th St**	
8:00 AM	0	0	0	0	6	4
9:00 AM	2	0	0	0	8	8
10:00 AM	1	2	0	0	13	12
11:00 AM	1	10	0	0	7	9
12:00 PM	0	8	0	0	6	8
1:00 PM	0	5	0	2	4	11
2:00 PM	0	6	0	2	4	12
3:00 PM	0	5	0	0	12	13
4:00 PM	0	6	0	0	9	9
5:00 PM	0	5	0	0	11	6
6:00 PM	0	8	0	0	10	3

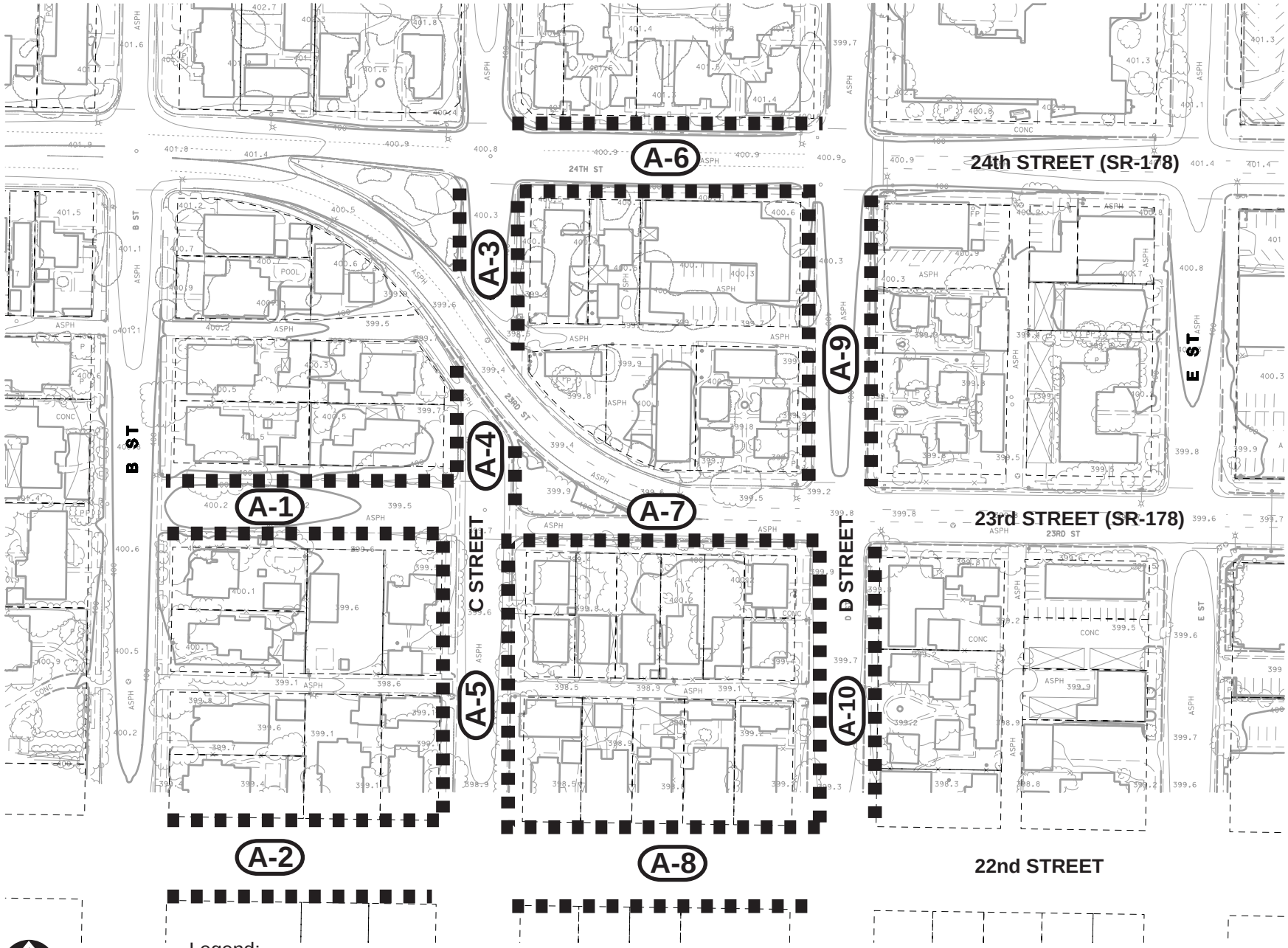
Bakersfield Parking Study

Prepared by: National Data & Surveying Services

PROJECT No. 08-8188
CITY: Bakersfield

DATE: Tue 09/16/08 - Wed 09/17/08
TIME: 8:00 AM - 7:00 PM

	East Side	West Side	North Side	South Side	East Side	West Side
Segment:	**E St From 24th St to 23rd St**		**24th St From D St to E St**		**D St North of 24th St**	
8:00 AM	7	6	2	4	8	4
9:00 AM	5	4	6	5	10	10
10:00 AM	6	4	7	6	9	9
11:00 AM	5	3	4	5	9	8
12:00 PM	4	3	3	3	6	7
1:00 PM	5	5	0	5	10	11
2:00 PM	4	4	1	5	9	12
3:00 PM	2	4	3	6	9	7
4:00 PM	3	4	2	5	4	7
5:00 PM	6	4	2	0	3	5
6:00 PM	4	7	1	0	4	2



Parking Count Locations

Attachment A

APR/2010

BAKERSFIELD PARKING STUDY **TUESDAY - APRIL 20, 2010**

ZONE	0800	0830	0900	0930	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1500	1530	1600	1630	1700	1730	1800	1830	TOTAL
A-01	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
A-02	1	1	1	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	7
A-03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	4
A-04	3	2	2	2	2	1	2	2	2	1	1	1	1	1	3	3	3	3	3	3	2	2	45
A-05	2	1	1	1	1	1	0	0	0	0	1	1	1	1	1	2	2	2	2	2	2	3	27
A-06	0	0	0	0	0	0	3	3	1	0	0	0	0	0	1	2	1	0	0	0	0	0	11
A-07	2	2	2	2	2	2	3	1	2	1	1	1	1	1	1	1	1	1	1	1	2	2	33
A-08	4	4	4	4	4	4	3	2	2	2	4	4	4	4	5	5	5	5	6	7	7	7	96
A-09	12	13	14	14	14	14	13	12	14	14	12	11	8	10	9	9	9	9	8	7	10	11	247
A-10	10	8	9	11	8	7	6	6	6	6	6	6	6	5	7	7	7	8	9	8	9	10	165
TOTAL	35	32	34	35	31	29	30	26	27	24	27	26	21	22	28	31	30	28	29	28	32	35	640