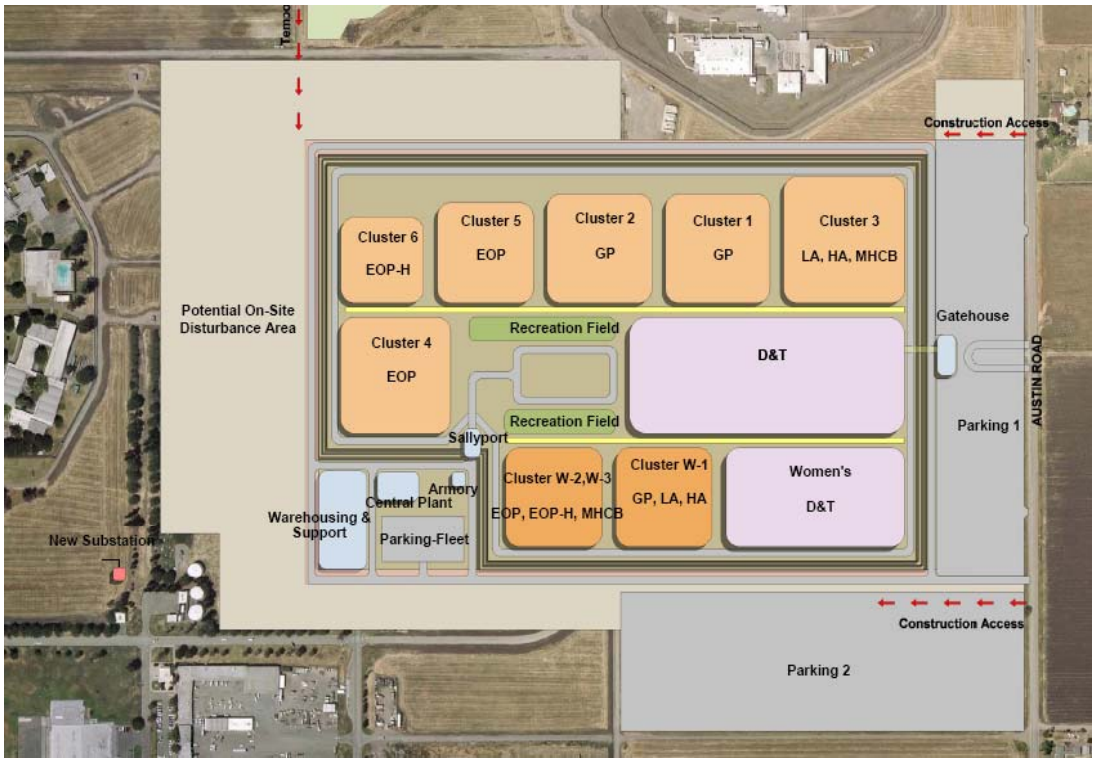
APPENDIX B

Traffic Impact Study

TRAFFIC IMPACT ANALYSIS

NORTHERN CALIFORNIA YOUTH CORRECTION CENTER CALIFORNIA PRISON RECEIVERSHIP



DKS Associates
TRANSPORTATION SOLUTIONS

October 9, 2008

NORTHERN CALIFORNIA YOUTH CORRECTION CENTER PROJECT

TRAFFIC IMPACT ANALYSIS

Prepared for:

California Prison Receivership

Prepared by

DKS Associates

TRANSPORTATION SOLUTIONS

October 9, 2008

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
1.0 INTRODUCTION 4
2.0 EXISTING CONDITIONS 6
2.1 Intersection Level of Service Methodology 7
2.2 Existing Conditions Analysis 10
3.0 BACKGROUND CONDITIONS ANALYSIS 14
4.0 PROJECT CONDITIONS ANALYSIS 18
5.0 CUMULATIVE 2035 GENERAL PLAN CONDITIONS 31
5.1 Cumulative 2035 General Plan: No Project Conditions 31
5.2 Cumulative 2035 General Plan: With Project Conditions 34
6.0 FREEWAY MAINLINE ANALYSIS 39
7.0 CONSTRUCTION IMPACT ANALYSIS 43
8.0 PROJECT ALTERNATIVE 1 49
9.0 MITIGATION MEASURES 55
Scenario 3A: Existing Plus Project Conditions 55
Scenario 3B: EPAP plus Project Conditions 55
Scenario 4B: 2035 Cumulative Plus Project Conditions 56
10.0 CONCLUSION 58

LIST OF FIGURES

Figure 1- Existing Conditions - Intersection Lane Geometry and Peak Hour Traffic Volumes 11
Figure 2- Background Conditions Scenario 2A- Intersection Lane Geometry and Peak Hour Traffic Volumes 16
Figure 3- Trip Distribution Patterns 20
Figure 4- Scenario 3A: Existing plus Project Conditions Intersection Lane Geometry and Peak Hour Traffic Volumes 21
Figure 5- Scenario 3B: EPAP plus Project Conditions Intersection Lane Geometry and Peak Hour Traffic Volumes 22
Figure 6- Existing Baseline and Existing plus Project Queuing Summary 24
Figure 7- EPAP Baseline and EPAP plus Project Queuing Summary 27
Figure 8- Project Site Plan 30

Figure 9- Cumulative 2035 General Plan: No Project – Intersection Lane Geometry and Peak Hour Traffic Volumes 32

Figure 10- Cumulative 2035 General Plan With Project – Intersection Lane Geometry and Peak Hour Traffic Volumes 35

Figure 11- 2035 Baseline and 2035 plus Project Queuing Summary 38

LIST OF TABLES

Table 1- Unsignalized and Signalized Intersection - LOS Thresholds 8

Table 2- Level of Service Criteria for Two-Lane Arterial and Local Streets 9

Table 3- Intersection Capacity Analysis: Existing Conditions 12

Table 4- Roadway Segment Analysis: Existing Conditions 13

Table 5- Intersection Capacity Analysis: Background Conditions Scenario 2A (EPAP Developments) 15

Table 6- Roadway Segment Analysis: Background Conditions Scenario 2A (EPAP Developments) 17

Table 7- Trip Generation – NCYCC Project 18

Table 8- Intersection Capacity Analysis: Existing Plus Project Conditions 25

Table 9- Roadway Segment Analysis: Existing Plus Project Conditions 25

Table 10- Intersection Capacity Analysis: EPAP Plus Project 28

Table 11- Roadway Segment Analysis: EPAP Plus Project 28

Table 12- NCYCC Parking Demand 29

Table 13- Intersection Capacity Analysis: 2035 General Plan No Project 33

Table 14- Roadway Segment Analysis: 2035 General Plan No Project 34

Table 15- Intersection Capacity Analysis 2035 General Plan Plus Project 36

Table 16- Roadway Segment Analysis: 2035 General Plan: With Project 37

Table 17- Freeway Segments – LOS Thresholds 39

Table 18- Freeway Segments LOS Summary – No Project Conditions 41

Table 19- Freeway Segments LOS Summary – With Project Conditions 42

Table 20- Construction Phase Trip Generation Estimates NCYCC Project 43

Table 21- Intersection Capacity Analysis: Existing plus Project Construction Trips 44

Table 22- Roadway Segment Analysis: Existing plus Project Construction Trips 45

Table 23- Freeway Mainline Analysis: Existing plus Project Construction Condition 45

Table 24- Construction Phase Trip Generation Estimates 46
Table 25- Intersection Capacity Analysis: Existing Plus Condition Plus..... 47
Table 26- Trip Generation – NCYCC Project (25 Percent Total Reduction in Staff Compared to Proposed Project)..... 49
Table 27- Intersection Capacity Analysis: Existing plus Alternative Project Conditions 50
Table 28- Roadway Segment Analysis: Existing plus Alternative Project Conditions 51
Table 29- Intersection Capacity Analysis: EPAP plus Alternative Project Conditions..... 52
Table 30- Roadway Segment Analysis: EPAP plus Alternative Project Conditions..... 52
Table 31- Intersection Capacity Analysis: Cumulative 2035 General Plan Scenario with Alternative Project Conditions..... 53
Table 32- Roadway Segment Analysis: Cumulative 2035 General Plan Scenario with Alternative Project Conditions..... 54

APPENDICES

Appendix A Turning Movement Counts
Appendix B Intersection Level of Service Analysis
Appendix C Highway Capacity Manual Roadway Segment Analysis Tables

EXECUTIVE SUMMARY

The proposed project would be a Health Care Facility intended to stabilize non-mobile and seriously ill or injured patients and rehabilitate them to a state of health that is appropriate for re-introduction into Northern California Youth Correction Center. The project site is located south of the intersection of Arch Road and Austin Road in San Joaquin County, California.

Eight study intersections and one roadway segment were analyzed under four scenarios: Existing Conditions, Background Conditions (without Mariposa Lakes Phase 1), Project Conditions and 2035 Cumulative Conditions. Turning movement counts and field observations were collected in November 2007 and April 2008. Turning movement counts, intersection geometry and traffic characteristics for Background and Cumulative scenarios were based on the Mariposa Lakes Study (TJKM, February 2007).

Analysis of existing conditions shows that all eight study intersections currently operate at acceptable levels during both AM and PM peak hour. The study roadway segment also operates at an acceptable level.

In the vicinity of the project site, 23 development projects have already been approved or are currently in the planning-process. These developments have been included in the Existing plus Approved Projects background condition. The Mariposa Lakes Development is one of the major planned developments in the vicinity of proposed project. For this study, the 2035 General Plan condition was analyzed with the Mariposa Lakes Development project. These development projects are anticipated to add additional traffic along Arch Road, north of the project site, and would result in major increases in average delay at each study intersection between SR 99 and Austin Road.

With the addition of trips from planned and approved projects all study intersections would operate at acceptable levels during AM and PM peak hour. The level of service (LOS) of the study roadway segment would change from LOS B to LOS C. With the addition of trips from planned and approved projects, all seven existing study intersections would operate at acceptable levels during AM peak hour, and six out of the seven study intersections would operate at acceptable levels during PM peak hour.

The proposed project would generate approximately 3,566 weekday trips, including 452 AM peak hour trips (352 inbound, 40 outbound), and 432 PM peak hour trips (40 inbound, 393 outbound). Adding project-related traffic to the Existing Conditions scenario would result in minor increases in average delay at each of the study intersections. All the intersections would continue to operate at an acceptable LOS during AM peak and PM peak hours. The proposed project would not have any significant impacts to the 95th percentile queues on Arch Road, between the SR 99 SPUI and Kingsley Road since both intersections would continue to operate with satisfactory LOS in the peak hours and mitigation measures have been identified to improve Kingsley Road and Arch Road. The LOS of the study roadway segments would change from LOS B to LOS D.

The addition of project related traffic to the EPAP scenario would result in minor increases in delay. All study intersections would operate at an acceptable LOS during AM peak and PM peak hours except, the intersections of the Kingsley Road and Arch Road, and Newcastle Road and Arch Road.

Under the 2035 General Plan with Project Scenario, all improvements recommended under the EPAP with Mariposa Lakes plus Project Conditions would offset the project's potential impacts at the study intersections, with the exception of the SR 99 SPUI and Arch Road intersection, and at the Austin Road and Arch Road intersection. These intersections are forecast to operate at an unacceptable LOS F under the 2035 General Plan plus Project, even with the recommended improvements. Additional improvements at these locations are not feasible due to right-of-way constraints, utilities, infrastructure, and inconsistency with City of Stockton standards. Therefore, there would be two significant and unavoidable cumulative impacts.

A Construction Impact Analysis was conducted for the peak construction period on-site. The construction trips would generate approximately twice the amount of vehicle trips than the "plus project" condition during the peak hours, resulting in changes to LOS at the study intersections. Therefore, the addition of construction trips would cause a temporary impact at the intersections along Arch Road during the 7-month peak construction period. A construction traffic control plan (CTMP) is recommended that identifies the arrival and departure of construction employees and vehicles. The plan would establish a maximum threshold of vehicles per peak-hour for construction-related traffic trips, taking into account additional thresholds such as queue spillback and route restrictions.

Based on the parking analysis, the peak period at the project site would occur between 8:00 AM and 2:00 PM, with a peak parking demand of 1,272 parked vehicles. Compared to the proposed parking supply (1,426 parking spaces), adequate parking would be provided on the project site with the implementation of the proposed project.

As shown in the Alternative Project analysis, a 25 percent staff reduction would result in virtually the same project impacts as with the proposed project scenario, with the exception at the intersection of Frontage Road/Kingsley Road and Arch Road.

A Freeway Mainline Analysis was conducted based on Caltrans level of service thresholds. The SR 99 freeway (northbound and southbound) was analyzed north and south of Arch Road for all scenarios. The analysis included SR 99 as a four-lane highway for existing conditions, a six-lane facility under or near-term conditions, and a ten-lane highway under future 2035 General Plan conditions. Under the 2035 with and without project conditions, SR 99 (north and south of Arch Road) is forecast to operate at LOS F as a six-lane highway. With the widening of SR 99 from a six-lane to a ten-lane highway, the freeway segments north and south of Arch Road would operate at an acceptable LOS (LOS D or better), with the exception of northbound SR 99 (north of Arch Road) during the PM Peak hour. Since this mainline segment

would be constructed to its ultimate width of 10 lanes, the proposed project would contribute to this significant unavoidable impact.

1.0 INTRODUCTION

This report provides an evaluation of traffic and transportation issues related to a proposed Health Facility at the Northern California Youth Correction Center (NCYCC). The project site is located south of the intersection of Arch Road and Austin Road in San Joaquin County, California. This site is approximately one and a half mile east of State Route 99 and approximately one mile southeast of the City of Stockton. The proposed project lies southeast of the Northern California Woman's Facility (NCWF).

The project site is a proposed 1,734 bed health care facility with 3,030 full-time employees. This includes correctional officers, physicians, nurses, miscellaneous medical staff, therapists (Medical), support staff, clerical and program staff. The facility's medical treatment program is to stabilize non-mobile and seriously ill or injured patients and rehabilitate them to state of health that is appropriate for re-introduction into the general prison population.

The analysis presented in this report is primarily based on the City of Stockton *Traffic Impact Study Guidelines*, which is consistent with other traffic analyses prepared in this part of San Joaquin County. Although three of the eight study intersections and roadways are within the jurisdiction of the City of Stockton and the remaining five are within San Joaquin County's jurisdiction, the County of San Joaquin Public Works department was also consulted on the development of the traffic scope and impact criteria. Based on those discussions, it was determined by the City and County that the traffic analysis for all study area intersections and roadways should be consistent with the City of Stockton's traffic guidelines and significance criteria.

This report analyzes traffic conditions during typical weekday AM (7:00-9:00) and PM (4:00-6:00) peak hours. The impacts of the proposed project were estimated using the current level of service methodologies set forth by the City of Stockton.

Based on consultation with the County of San Joaquin and City of Stockton staff, the following eight intersections were analyzed as part of the traffic impact analysis:

1. SR 99 northbound and southbound ramps/Arch Road (single point urban interchange, or SPUI)
2. Kingsley Road (frontage road)/Arch Road
3. Newcastle Road/Arch Road
4. NCWF west driveway/Arch Road
5. NCWF east driveway/Arch Road
6. Austin Road/Arch Road
7. Newcastle Road/NCYCC driveway
8. Austin Road/proposed project driveway

In addition to the eight study intersections, the following roadway segments were analyzed as part of the traffic impact analysis:

- Arch Road, between NCWF west driveway and Newcastle Road
- Austin Road, between Burnham Road and the proposed driveway

The operation of these intersections and roadway segment were evaluated under the following scenarios:

Scenario 1: Existing Condition. Level of service based on existing peak-hour volumes.

Scenario 2: Background Conditions. Existing peak-hour volumes plus approved projects (EPAP). This scenario is based on existing 2007 and 2008 traffic volumes and EPAP traffic volumes obtained from the Mariposa Lakes Traffic Analysis (TJKM, 2007) and the NCWF Traffic Impact Analysis (DKS, 2008). However, traffic related to the Mariposa Lakes (Phase 1) development is not included in this scenario based on discussions with the City and the State CPR.

Scenario 3: Project Conditions. This scenario is divided in two sub-scenarios:

- **Scenario 3A: Existing plus Project Conditions.** This scenario analyzes existing conditions with the proposed project condition.
- **Scenario 3B: EPAP without Mariposa Phase I plus Existing plus Project Conditions.** This scenario analyses existing conditions plus approved projects (EPAP), and proposed project.

Scenario 4: 2035 Cumulative Conditions. This scenario analyzes a future growth scenario based on the 2035 General Plan with and without the proposed project.

2.0 EXISTING CONDITIONS

This section describes the existing setting in the vicinity of the project site in San Joaquin County, California. A description of the existing transportation facilities including the roadway network, study intersections, transit service, bicycles and pedestrian facilities, and parking conditions are presented in this section.

Regional Access

State Route 99 provides regional access to the north and south of the project site. The state route connects various counties and cities in San Joaquin County. In the vicinity of the project site, SR 99 has two lanes in each direction and provides a connection to Arch Road, west of the project site.

Local Access

Austin Road is a north-south roadway east of the project site. Austin Road runs from East Mariposa Road to Caswell Memorial State Park (north of State Route 132). In the vicinity of the project site, there is one lane in each direction, and is classified as a local street. The roadway provides the only access to the site though a proposed project driveway.

Arch Road is an east-west roadway along the north frontage of the project site with posted speed limit of 45 mph. Arch Road runs from Quantas Lane to Austin Road. In the vicinity of the project site, there is one lane in each direction, and is classified as a minor arterial.

Newcastle Road is a north-south local roadway west of the project site. Newcastle Road runs from Arch Road to Northern California Youth Center. In the vicinity of the project site, there is one lane in each direction, and is classified as a local street.

Kingsley Road serves as a north-south two-lane frontage road of SR 99 on its east side. In the vicinity of Arch Road, Kingsley Road has one-lane in each direction with a center two-way-left-turn lane (TWLTL) to serve commercial traffic along the roadway.

Burnham Road is an east-west two-lane undivided rural road that connects Austin Road with Kaiser Road east of the project site.

Traffic Control

Four of the seven existing study intersections analyzed in the project area are stop controlled intersections, while the remaining three intersections (SR 99 SPUI/Arch Road, Kingsley Road/Arch Road, and Newcastle Road/Arch Road) are signalized intersections.

Surrounding Land Uses

Agricultural uses surround the site on the west, south, and east sides. The Burlington Northern and Santa Fe Railway Company (BNSF) is located on Arch Road, east of Austin Road is (private property), and generates a high percentage of truck traffic on Arch Road.

Transit

The project site is not currently served by public transit service.

2.1 Intersection Level of Service Methodology

This section evaluates the existing traffic conditions, and provides a basis for comparison of conditions before and after the trips related to the planned and approved projects are added to the street system. This analysis focuses on intersection level of service (LOS) at eight study intersections and includes the following:

1. SR 99 SPUI/Arch Road (signalized)
2. Kingsley Road (frontage road)/Arch Road (signalized)
3. Newcastle Road/Arch Road (signalized)
4. NCWF west driveway/Arch Road (one-way stop control)
5. NCWF east driveway/Arch Road (one-way stop control)
6. Austin Road/Arch Road (all-way stop control)
7. Newcastle Road/NCYCC driveway (one-way stop control)
8. Austin Road/proposed project driveway (does not exist)

In addition to the eight study intersections, the following roadway segments were also analyzed as part of the traffic impact analysis:

- Arch Road, between the NCWF west driveway and Newcastle Road
- Austin Road, between Burnham Road and the proposed project driveway

AM and PM peak hour vehicle turning movement counts and daily vehicle counts along Arch Road were collected in November, 2007 at the intersections of Arch Road at the SR 99 SPUI, the NCWF west driveway, the NCWF east driveway, and at Austin Road. Turning movement counts at the intersections of Arch Road at Kingsley Road and Newcastle Road were obtained from the Mariposa Lakes TIA (TJKM, 2007), and were adjusted to reflect conditions comparable to the collected traffic counts in 2007. Turning movement counts and daily vehicle counts were collected in April, 2008 at the intersection Newcastle Road/CPR south driveway, Newcastle Road (south of Arch Road), and Austin Road (south of Arch Road).

Level of Service (LOS) Definition

Traffic conditions at the study intersections were evaluated based on the analysis methodologies and assumptions used in the *Highway Capacity Manual* (HCM, Transportation Research Board, 2000). The Traffix level of service software was used to determine intersection LOS and 95th percentile queues. The Traffix software is consistent with the HCM 2000 methodology.

The level of service for one- or two-way stop controlled intersections is based on the delay at the worst approach. For signalized intersections and all-way stop controlled intersections, the average delay for all vehicles is used to determine the intersection's LOS. **Table 1** provides definitions of LOS for unsignalized and signalized intersections.

Table 1- Unsignalized and Signalized Intersection - LOS Thresholds

Level of Service	Expected Delay		Delay[1]
	Unsignalized Intersection	Signalized Intersection	
A	≤ 10	≤ 10	Little or no delay
B	>10 and ≤ 15	>10 and ≤ 20	Short traffic delay
C	>15 and ≤ 25	>20 and ≤ 35	Average traffic delays
D	>25 and ≤ 35	>35 and ≤ 55	Long traffic delays
E	>35 and ≤ 50	>55 and ≤ 80	Very long traffic delays
F	> 50	> 80	Extreme delays potentially affecting other traffic movements in the intersection

[1] Control Delay per vehicle (seconds per vehicle).
Source: Transportation Research Board, Special Report 209, Highway Capacity Manual, Chapter 17 – Unsignalized Intersections, 2000.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

A 95th percentile queuing analysis was conducted for Arch Road between the SR 99 SPUI and Kingsley Road. The 95th percentile queues on Arch Road were determined based on the intersection LOS analyses for the SR 99 SPUI/Arch Road and Kingsley Road/Arch Road intersections, as analyzed in Traffix. Traffix reports the 95th percentile queue in terms of the peak number of vehicles queued on the through movements between the intersections. Traffix assumes an average car length of 25 feet which is consistent with HCM methodology.

It should be noted that the City and Caltrans do not have specific criteria for determining whether a project would have a significant queuing impact. Since the segment of Arch Road under analysis is adjacent to a freeway ramp interchange, it is generally common to have vehicular queuing at the ramp intersections due to the heavy volumes of traffic entering and exiting the freeway during the peak hours.

For purposes of this TIA, a significant queuing impact would occur when the proposed project would create a queue that would block the upstream intersection. Therefore, for eastbound traffic on Arch Road, a significant queuing impact would occur if the eastbound queues at Kingsley Road/Arch Road would queue beyond the

SR 99 SPUI. Similarly, for westbound traffic on Arch Road, a significant queuing impact would occur if the westbound queues at SR 99 SPUI/Arch Road would queue beyond Kingsley Road/Arch Road. If there is already a significant queue in the baseline condition, the project would have a significant impact if it would add traffic to that queue and the blocked intersection would be forecast to operate at LOS E or F.

Roadway Segment Analysis

Arch Road and Austin Road are currently two-lane roadways, and levels of service are based on the traveling speeds compared to the desired free flow speed. An indicator of this delay is the capacity utilization, or the ratio of traffic volume to its functional capacity. The functional capacity of a roadway segment is influenced by many factors including lane width, shoulder width, grade line, and percentage of trucks, peaking characteristics, and terrain.

Arch Road was analyzed based on the methodology from Chapter 15 of the *Highway Capacity Manual* (HCM 2000). Exhibit 15-14, "Urban Street Worksheet", details all the variables and equations used to calculate level of service. The following assumptions were made in order to use the Urban Street Worksheet: cycle length of 120 seconds, lane capacity of 1700, Arrival Type 4 (from the City's guidelines), Urban Street Class 1 with a free flow Speed of 50 mph, and a Unit Extension of 3. Other factors, such as the signal control adjustment factor and the upstream filtering/metering adjustment factor were calculated using tables in Chapter 15. The Traffix intersection level of service output at intersections adjacent to the roadway segment, Newcastle Road/Arch Road and Austin Road/Arch Road, were used to determine the effective green-to-cycle (g/c) length ratios. The final output of the Urban Street Worksheet is a segment travel speed. Using Exhibit 15-2 the segment travel speed is equated with a level of service for urban street class 1. **Table 2** summarizes the HCM LOS criteria for various classes of roadway segments including arterial and collector streets.

Table 2- Level of Service Criteria for Two-Lane Arterial and Local Streets

Urban Street Class	I	II	III	IV
Range of free-flow speeds (FFS)	**55 to 45 mi/h**	**45 to 35 mi/h**	**35 to 30 mi/h**	**35 to 25 mi/h**
Typical FFS	**50 mi/h**	**40 mi/h**	**35 mi/h**	**30 mi/h**
LOS	Average Travel Speed (mi/h)			
A	> 42	> 35	> 30	> 25
B	> 34-42	> 28-35	> 24-30	> 19-25
C	> 27-34	> 22-28	> 18-24	> 13-19
D	> 21-27	> 17-22	> 14-18	> 9-13
E	> 16-21	> 13-17	> 10-14	> 7-9
F	≤ 16	≤ 13	≤ 16	≤ 7

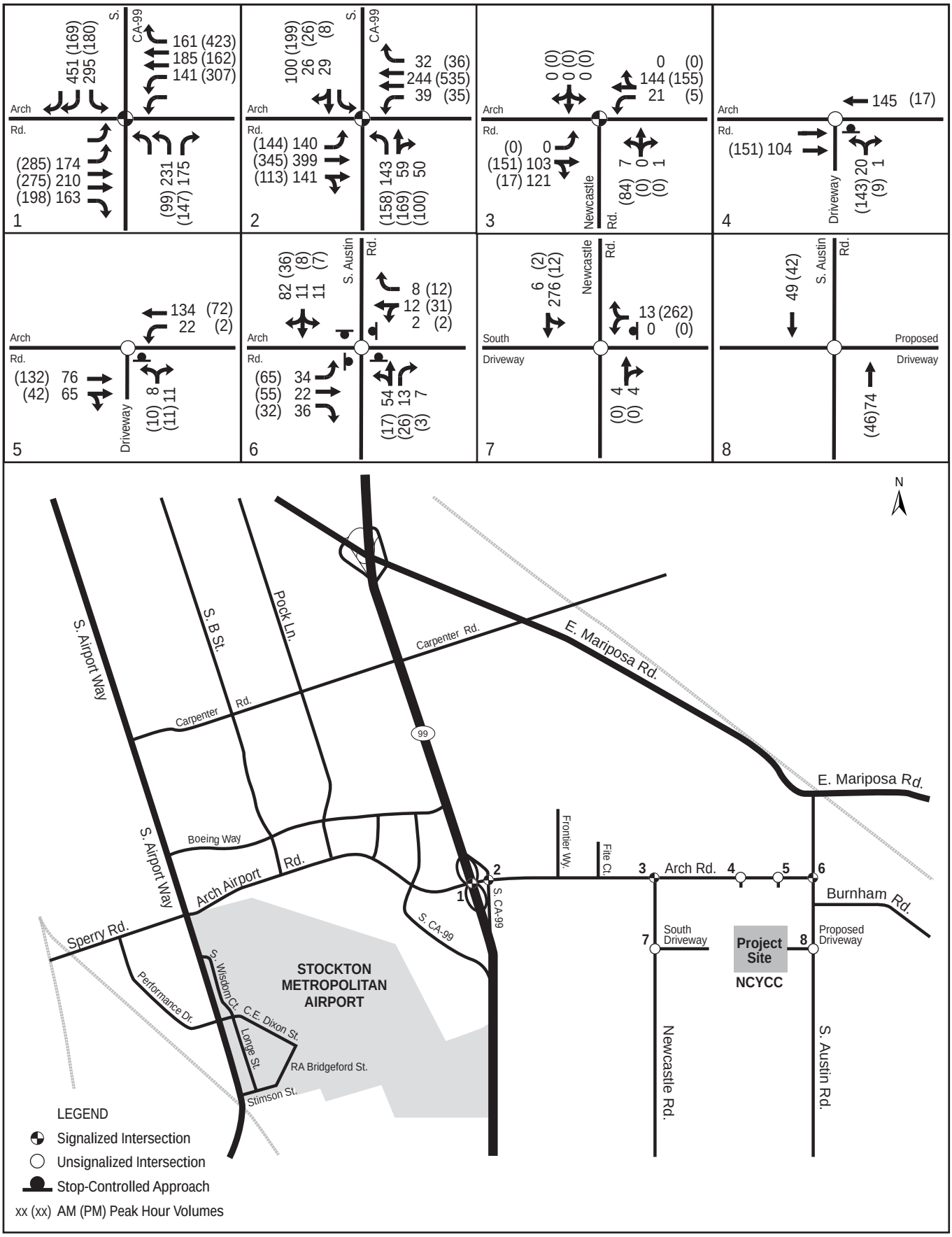
Source: Exhibit 15-2, Highway Capacity Manual, Transportation Research Board, 2000

The study segment of Austin Road, south of Burnham Road, would not contain unsignalized intersections on either end of the segment for a majority of the scenarios. Therefore, the HCM methodology could not be applied. Instead, the roadway segment LOS for Austin Road was determined based on the methodology and peak hour volume thresholds provided in the "Florida Tables", specifically in *Table 4-8 – Generalized Peak Hour Directional Volumes for Florida's Areas Transitioning into Urbanized Areas or Areas Over 5,000 not in Urbanized Areas* (Florida Department of Transportation – FDOT). Use of the Florida Tables for roadway segment analysis is an acceptable methodology for roadways throughout the US, and also serves as an alternative methodology to the HCM. Austin Road segment level of service thresholds were based on LOS D capacities for Non-State Roadways.

2.2 Existing Conditions Analysis

The existing lane geometry and configurations of the study intersections as well as the existing traffic volumes are presented in **Figure 1**.

The analysis was performed using the TRAFFIX software program. TRAFFIX evaluates intersection using the HCM analysis methodologies and determines an intersection's operating LOS. The intersections and their corresponding existing LOS are presented in **Table 3**. As shown in Table 3, each of the seven existing study intersections currently operate at LOS C or better during the AM & PM peak hour. None of the study intersections currently operate at deficient levels.



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 1
Existing Conditions – Intersection Lane Geometry and Peak Hour Traffic Volumes

Table 3- Intersection Capacity Analysis: Existing Conditions

#	Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay[1]	LOS[2]	Avg. Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	26.7	C	26.4	C
2	Kingsley Road (frontage road) and Arch Road	29.3	C	30.1	C
3	Newcastle Road and Arch Road	4.2	B	16.8	B
4	NCWF West Driveway and Arch Road	9.9	A	10.3	B
5	NCWF East Driveway and Arch Road	9.4	A	9.3	A
6	Austin Road and Arch Road	8.0	A	8.0	A
7	Newcastle Road and NCYCC driveway	8.4	A	10.6	B
8	Austin Road and proposed project driveway	N/A		N/A	

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections. n/a = not applicable under existing conditions.

To maintain consistency with recent analysis conducted for other projects in the vicinity of the project site, guidelines for operating standards of significance for intersections and roadway segment are based on the City of Stockton's Guidelines.

The City of Stockton's minimum acceptable level of service standard for intersections and roadway segments is LOS D. Therefore, this report uses LOS D as the minimum acceptable standard.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the existing AM and PM peak hours, the westbound queues on Arch Road between the SR 99 SPUI and Kingsley Road are 2 cars and 2 cars, respectively. The eastbound queues for the AM and PM peak hours are 6 cars and 5 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). The HCM methodology assumes an average car length as 25 feet therefore the queue of 2 cars on the westbound segment and 6 cars in the eastbound segment would not significantly interfere with the operation of either intersection.

Roadway Segment Operating Conditions

The roadway segment's peak hour volume and its corresponding level of service are presented in **Table 4**. According to this table, the roadway segments in this study operate at an acceptable level of service (LOS D or better) for the Existing Conditions.

Table 4- Roadway Segment Analysis: Existing Conditions

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	44 mph (WB)	A	45 mph (EB)	A
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	79 (SB)	C	46 (NB)	C

3.0 BACKGROUND CONDITIONS ANALYSIS

This section describes the traffic operating conditions at the study intersections under the background conditions. The Background Conditions scenario includes the traffic expected to be generated by approved and significantly planned projects prior to completion of the proposed project. Vehicular traffic that would be generated by approved and planned projects in the neighboring area was added to the existing turning movement volumes at the study intersections and roadway segment in order to evaluate the near-term Background Conditions scenario.

Scenario 2A (EPAP Developments): Intersection turning movement counts during the weekday AM and PM peak hours for the Existing plus EPAP scenario are based on the addition of EPAP volumes (extracted from approved/pending projects listed in the Mariposa Lakes Study and the NCWF Study) to the existing traffic volumes. In this scenario, no traffic volumes from the Mariposa Lakes (Phase 1) development were included. For this scenario, the existing roadway and intersection geometrics were assumed along Arch Road and Austin Road.

Per direction of the City of Stockton Public Works Department, EPAP peak hour traffic volumes were to be taken from the *Traffic Study for the Proposed Mariposa Lakes Development* (TJKM, 2007). The EPAP traffic volumes for the project study area were based on the City's EPAP Peak Hour Model as referenced in the TJKM study. Based on review of the EPAP peak hour traffic volumes and the list of approved projects analyzed in the EPAP model, it was determined that the use of the EPAP peak hour traffic volumes from the TJKM study would be appropriate for this TIA.

A total of 23 approved background projects were included in this analysis. These major projects are listed below:

- 29,581,000 square feet of non-residential development throughout the City of Stockton (including Arch Road Business Parks and the Opus West Logistics Center)
- 15,162 residential dwelling units throughout the City of Stockton
- Cannery Park (450 acres)
- North Stockton Projects Phase 3 (180 acres)
- Westlake Village (681 acres)
- Northern California Women's Facility (NCWF) conversion including 182 additional employees on 134 acres (per 2008 DKS Traffic Study)

A recently added background project in the vicinity is the California Conservation Corps' (CCC) Delta Service District Center Relocation located on the southeast corner of Newcastle Road/Arch Road. Based on the project's IS/MND, there would be nominal increases in daily and peak hour trips from this project.

The Background Conditions intersection configurations and traffic volumes are presented in **Figure 2**. The intersections and their corresponding levels of service are presented in **Table 5.** As this table illustrates, all study area intersections operate at acceptable LOS during the AM and PM peak hours, with the exception of Kingsley Road (frontage road) and Arch Road (PM peak hour).

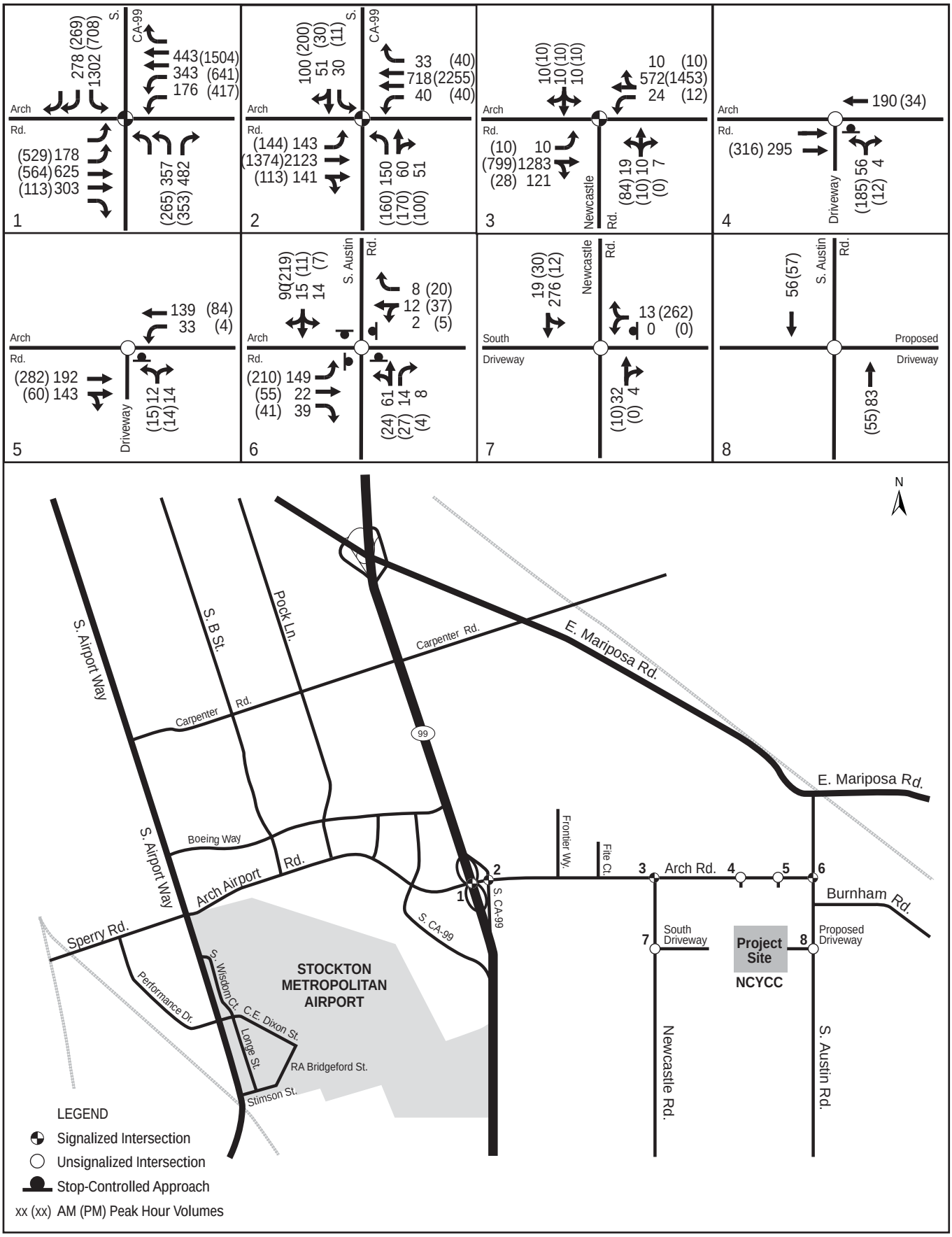
Table 5- Intersection Capacity Analysis: Background Conditions Scenario 2A (EPAP Developments)

#	Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay[1]	LOS[2]	Avg. Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	27.6	C	37.8	C
2	Kingsley Road (frontage road) and Arch Road	38.2	D	**61.8**	**E**
3	Newcastle Road and Arch Road	13.6	B	20.1	C
4	NCWF West Driveway and Arch Road	12.2	B	12.7	B
5	NCWF East Driveway and Arch Road	10.5	B	10.3	B
6	Austin Road and Arch Road	9.0	A	10.3	B
7	Newcastle Road and NCYCC driveway	8.5	A	9.4	A
8	Austin Road and proposed project driveway	N/A		N/A	

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
[a] Unsignalized Intersection.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queues on Arch Road between the SR 99 SPUI and Kingsley Road are forecast to be 5 cars and 10 cars, respectively. The eastbound queue for the AM and PM peak hours are forecast to be 43 cars and 17 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length of 25 feet therefore the queuing of 10 cars on the westbound segment would not significantly impact the operation of Kingsley Road/Arch Road. However, the eastbound queue of 43 cars (1,075 feet) would exceed the 670 foot distance between the intersections and would queue beyond the intersection at the SR 99 SPUI. Since both intersections are forecast to operate with satisfactory LOS, it is likely that the peak queues would occur for only a few signal cycles during the peak hour and would therefore not have a significant queuing impact.



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 2
Background Conditions Scenario 2A - EPAP
Intersection Lane Geometry and Peak Hour Traffic Volumes

Roadway Segment Operating Conditions

The roadway segment's peak hour volume and corresponding level of service is presented in **Table 6**. According to this table, the roadway segments in this study operate at an acceptable level of service (LOS D or better) for the Existing Conditions.

Table 6- Roadway Segment Analysis: Background Conditions Scenario 2A (EPAP Developments)

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	46 mph (EB)	A	44 mph (EB)	A
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	83 (NB)	C	57 (SB)	C

4.0 PROJECT CONDITIONS ANALYSIS

This section evaluates near-term future traffic conditions with project-generated traffic added to the Background Condition scenario.

The amount of traffic associated with a project is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. Trip generation is the process of predicting the number of peak hour trips a proposed development would contribute to the roadways, and whether these trips would be entering or exiting the site. After the number of trips is determined, the distribution process projects the direction these trips would use to approach and depart the site, from a regional perspective. Trip assignment involves determining which specific roadways a vehicle would use to travel between its origin and destination.

Trip Generation

The following methodology was followed to develop trip generation table:

- Daily Volumes were based on staff distribution by shift.
- Staff shifts considered for peak period analysis are as follows:
  - AM Peak Period: 8:00 AM—5:00 PM and 8:00 AM -8:00 PM (two shifts that begin at 8:00 AM)
  - PM Peak Period: 8:00 AM -5:00 PM
- Vehicle delivery trips and visitor trips were estimated based on 1,734 beds.

As shown in **Table 7**, the proposed project would generate approximately 492 AM peak hour vehicle trips (452 inbound and 40 outbound) and 433 additional PM peak hour vehicle trips (40 inbound, 393 outbound). Approximately 3,566 daily vehicle trips would be generated by the proposed project.

Table 7- Trip Generation – NCYCC Project

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Proposed NCYCC Facility							
-Staff	3,292	412	0	412	0	353	353
-Delivery	42	11	11	22	11	11	22
-Visitors	232	29	29	58	29	29	58
Total Trip Generation	***3,566***	***452***	***40***	***492***	***40***	***393***	***433***

Notes: Daily staff trips based on total of 1,646 staff distributed across the schedule at a 1.0 AVO.
Peak hour staff trips based on 8:00 AM - 5:00 PM shift of 353 staff and 8:00 AM - 8:00 PM shift of 57.
Delivery trips based on 21 deliveries per day, with 11 deliveries occurring during the AM peak hour, and 11 deliveries during the PM peak hour.
Visitor trips based on 116 visitors per day at a 1.0 AVO, with one quarter of the visits occurring during each peak hour.

Trip Distribution

The direction of project trips to and from the project site was based on the existing travel patterns. Existing travel patterns were derived from the data collection conducted at the study intersections in November 2007 and April 2008. **Figure 3** illustrates the trip distribution of the proposed project for the weekday AM, PM In general, during the AM and PM peak hours approximately 35 percent of trips would head south on SR 99, 28 percent of trips would come from Arch Airport Road, and 26 percent would travel from northbound SR 99. Approximately seven percent of trips would come from northbound Austin Road and 4 percent would come from southbound Austin Road.

Trip Assignment

Project-generated trips were assigned to the roadway network based on likely travel patterns to local and regional routes and existing traffic volumes in the vicinity of the project site. All the project trips were assumed to access the site using the proposed project driveway located on south-east corner of the site connecting Austin Road. **Figure 4 and 5** illustrate the Background plus Project peak hour volumes for scenarios **3A** and **3B**.

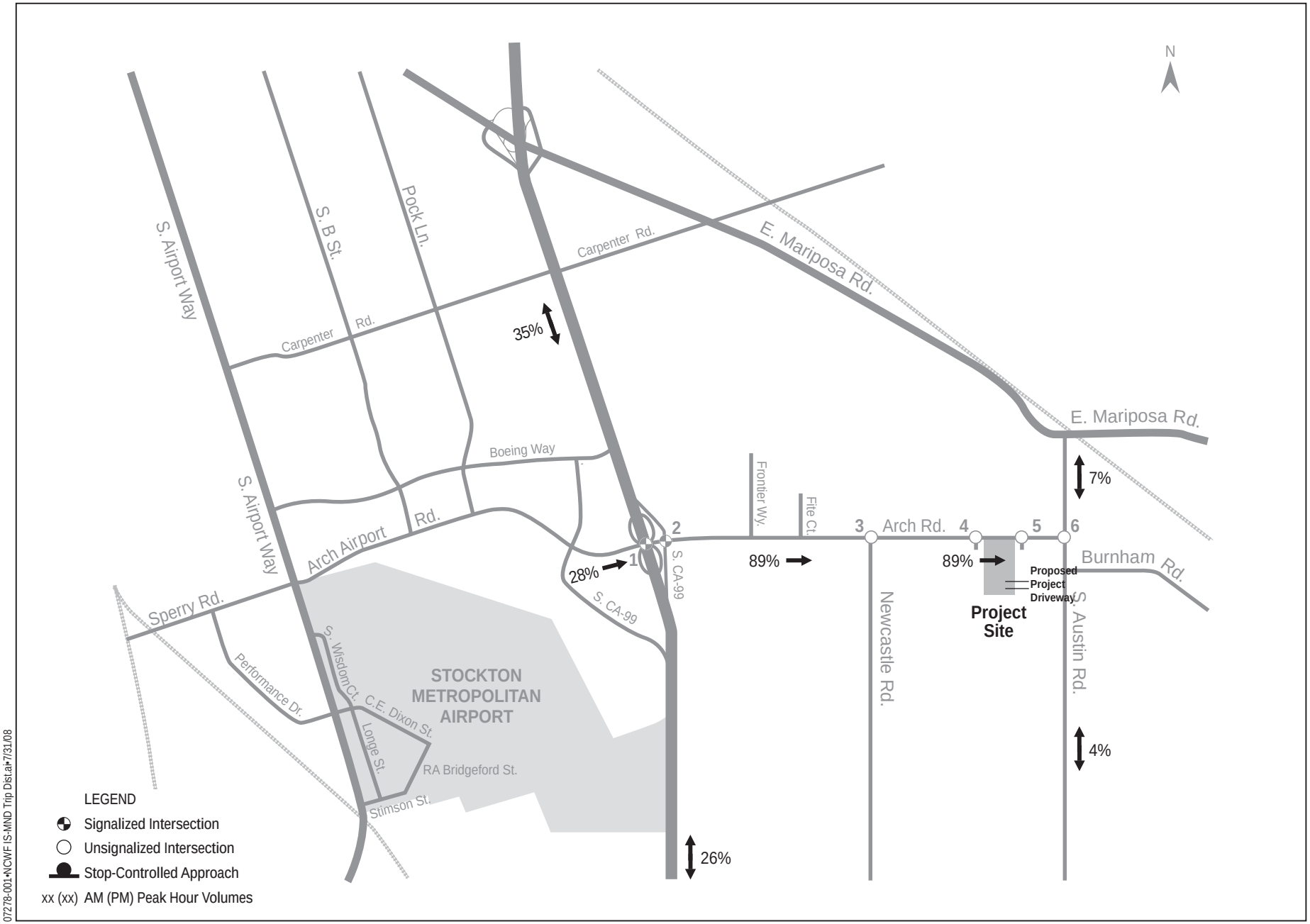
Intersection Level of Service Impact Threshold Criteria

Three of the eight study intersections are within the City of Stockton. The intersections of Arch Road at Austin Road and the two driveways at the NCWF site, the CRP south driveway on Newcastle Road, and the proposed project driveway on Austin Road are in San Joaquin County. However, to maintain consistency with other recently completed analyses in the vicinity, the City and County have directed DKS to use the City of Stockton's traffic analysis methodology and criteria for significant impacts.

As previously stated, under the City's TIA Guidelines, the minimum acceptable level of service standard for intersections and roadway segments is LOS D. Therefore, a potentially significant impact would occur if the addition of project-related traffic results in an intersection deteriorating from an acceptable LOS D or better to LOS E or F. For intersections with LOS worse than D (E or F), an impact is considered potentially significant if project traffic results in an increase of greater than five (5) seconds of delay.

The project condition analysis has been divided in three scenarios:

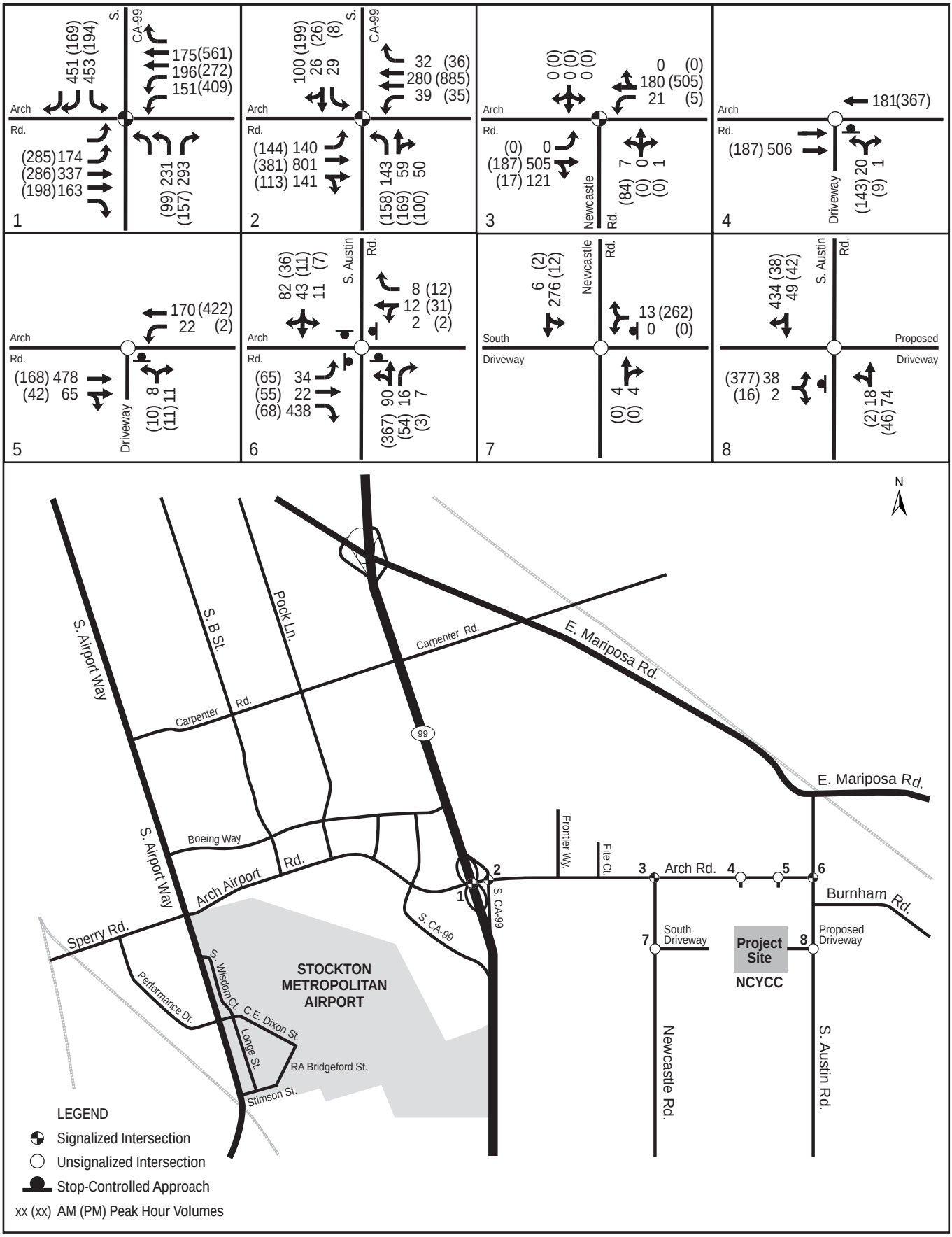
- **Scenario 3A: Existing plus Project Conditions.** This scenario analyzes existing conditions with the proposed project.
- **Scenario 3B: EPAP plus Project Conditions.** This scenario analyses existing conditions plus approved projects (EPAP) plus the proposed project.



07278-001•NCWF IS-MND Trip Dist.ai•7/31/08

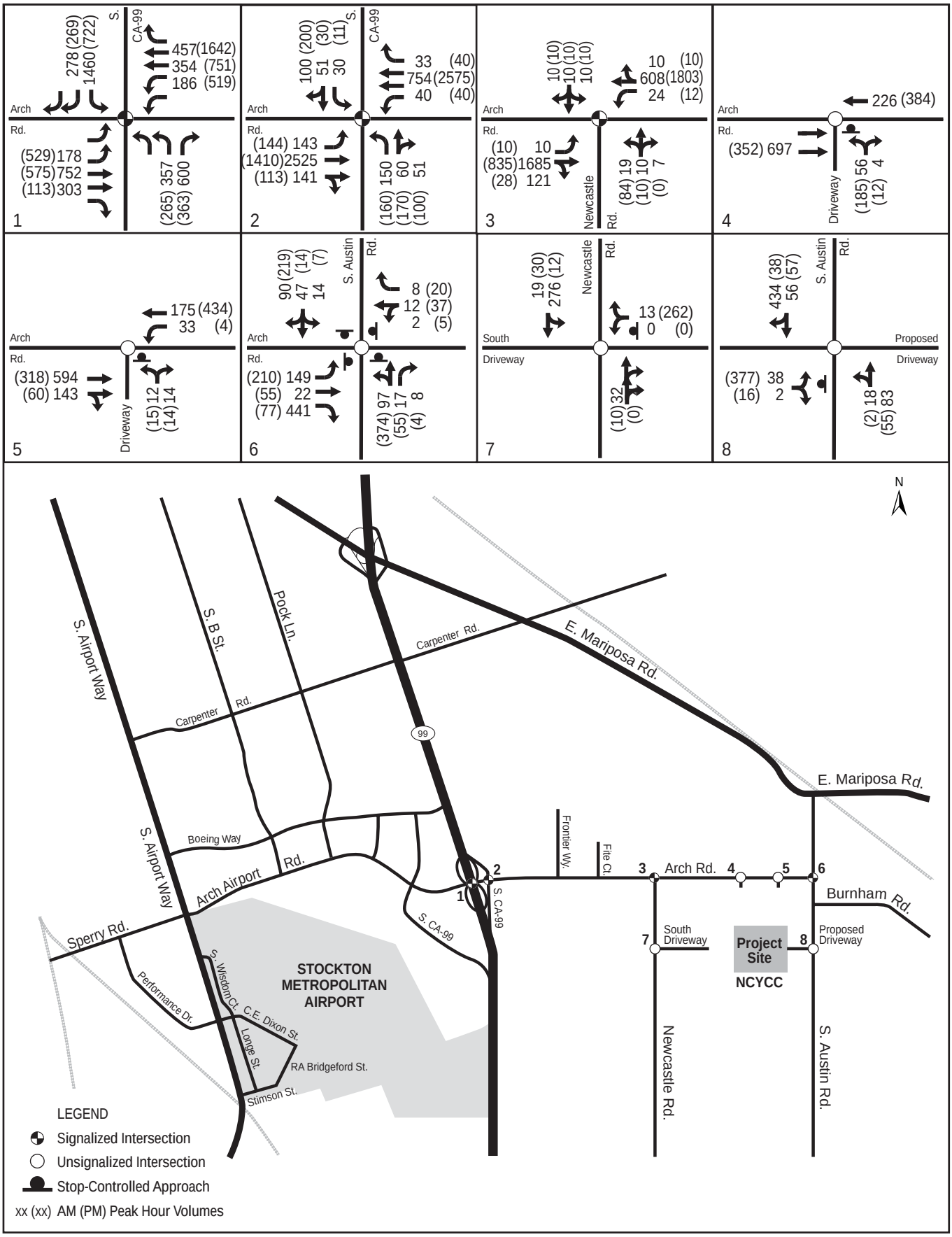
DKS Associates
TRANSPORTATION SOLUTIONS

Figure 3
Trip Distribution



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 4
Scenario 3A – Existing Plus Project Conditions
Intersection Lane Geometry and Peak Hour Traffic Volumes



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 5
Scenario 3B – EPAP Plus Project
Intersection Lane Geometry and Peak Hour Traffic Volumes

Scenario 3A: Existing plus Project Conditions

This scenario analyzes existing conditions with the proposed project.

Intersection Level of Service Analysis

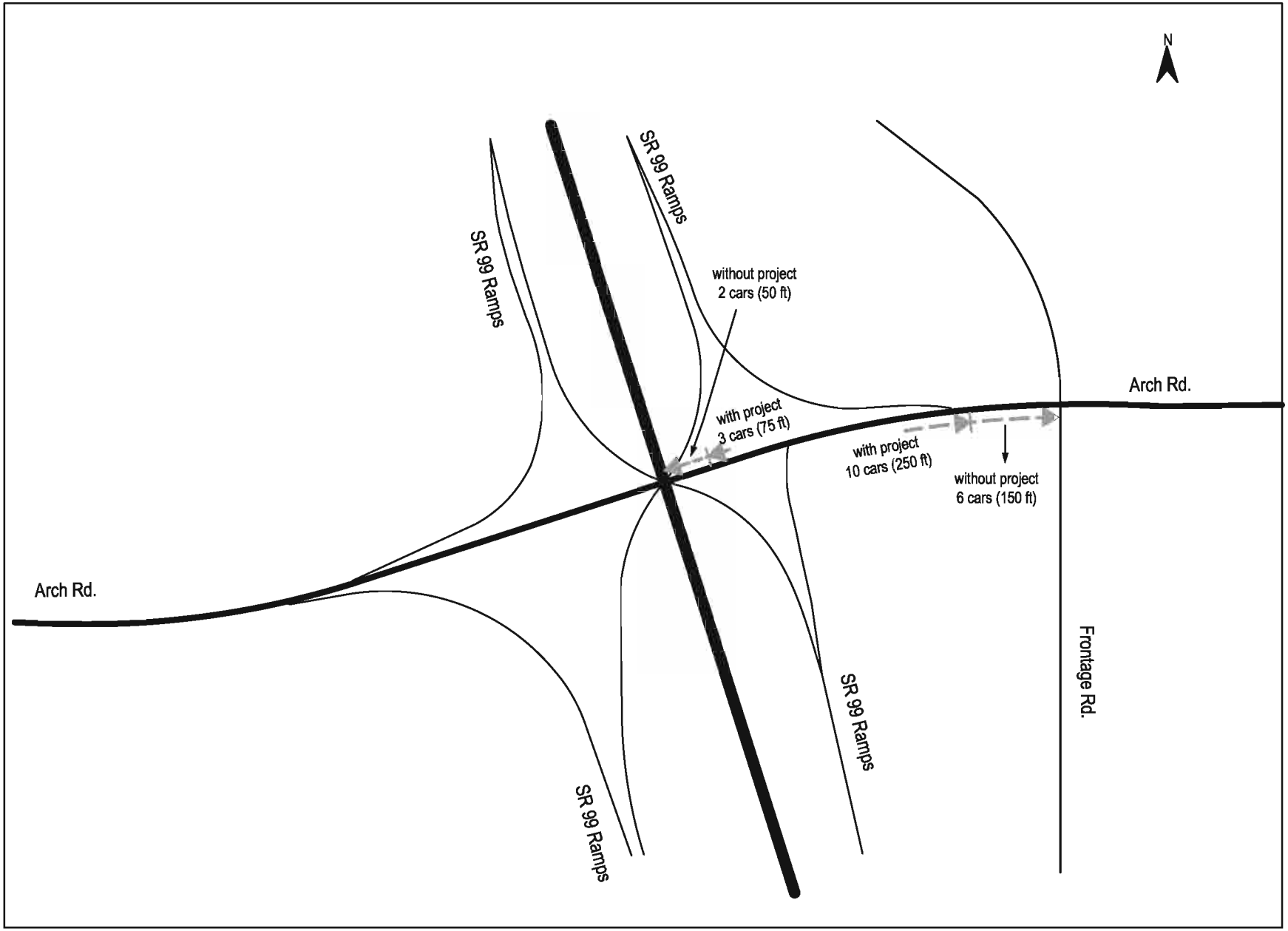
The study intersections and their corresponding levels of service with the addition of project-related traffic are presented in **Table 8.**

- The intersection of SR 99 SPUI and Arch Road would continue to operate at LOS C in both peak hours.
- During the AM and PM peak hours, the intersection of Kingsley Road (frontage road) and Arch Road, and Newcastle Road and Arch Road would operate at LOS C or better.
- The intersection of NCWF west driveway and Arch Road would deteriorate from LOS A to LOS B during AM peak hour. Similarly, the intersection of NCWF east driveway and Arch Road would deteriorate from LOS A to LOS B in the AM and PM peak hours.
- The intersection of Austin Road and Arch Road would be operating at LOS B during both the AM and PM peak hours.
- The intersection of Newcastle Road and the NCYCC driveway would continue to operate at LOS A and LOS B during the AM and PM peak hour, respectively.
- The intersection of Austin Road and the proposed project driveway would deteriorate from LOS A to LOS B.

In general, according to the City of Stockton intersection level of service standards, the study intersections would continue to operate at an acceptable LOS C or better under the Existing Plus Project Conditions.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queues on Arch Road between the SR 99 SPUI and Kingsley Road are forecast to be 3 cars for both peak hours. The eastbound queue for the AM and PM peak hours are 10 cars and 5 cars, respectively. The distance between SR 99 SPUI intersection and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet therefore the queue of 3 cars on the westbound segment and 10 cars on the eastbound segment wound not significantly impact the operations of either intersection. **Figure 6** illustrates the existing baseline and existing plus project queuing conditions.



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 6
Existing Baseline and Existing plus Project
Queuing Summary

Table 8- Intersection Capacity Analysis: Existing Plus Project Conditions

#	Intersection	Background Conditions				Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	26.7	C	26.4	C	26.4	C	26.6	C
2	Kingsley Road (frontage road) and Arch Road	29.3	C	30.1	C	25.5	C	29.7	C
3	Newcastle Road and Arch Road	4.2	B	16.8	B	3.0	A	10.1	B
4	NCWF West Driveway and Arch Road	9.9	A	10.3	B	13.9	B	15.0	B
5	NCWF East Driveway and Arch Road	9.4	A	9.3	A	11.8	B	10.9	B
6	Austin Road and Arch Road	8.0	A	8.0	A	11.7	B	14.8	B
7	Newcastle Road and NCYCC driveway	8.4	A	10.6	B	8.4	A	10.6	B
8	Austin Road and proposed project driveway	N/A		N/A		11.1	B	12.1	B

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
[a] Unsignalized Intersection.

Roadway Segment Level of Service Analysis

The addition of trips associated with the proposed project would result in an increase in peak hour traffic on Arch Road between Newcastle Road and the project site. However, the LOS of the roadway segment would remain at an acceptable LOS (LOS A) under the Existing plus Project Conditions. Austin Road between Arch Road and the project site will also experience an increase in volume; however the LOS on the roadway segment would remain at an acceptable LOS (LOS D). **Table 9** summarizes the estimated roadway segment LOS.

Table 9- Roadway Segment Analysis: Existing Plus Project Conditions

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	45 mph (EB)	A	42 mph (WB)	A
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	483 (SB)	D	424 (NB)	D

Scenario 3B: EPAP plus Project Conditions

This scenario analyses existing conditions plus approved projects (EPAP) plus the proposed project.

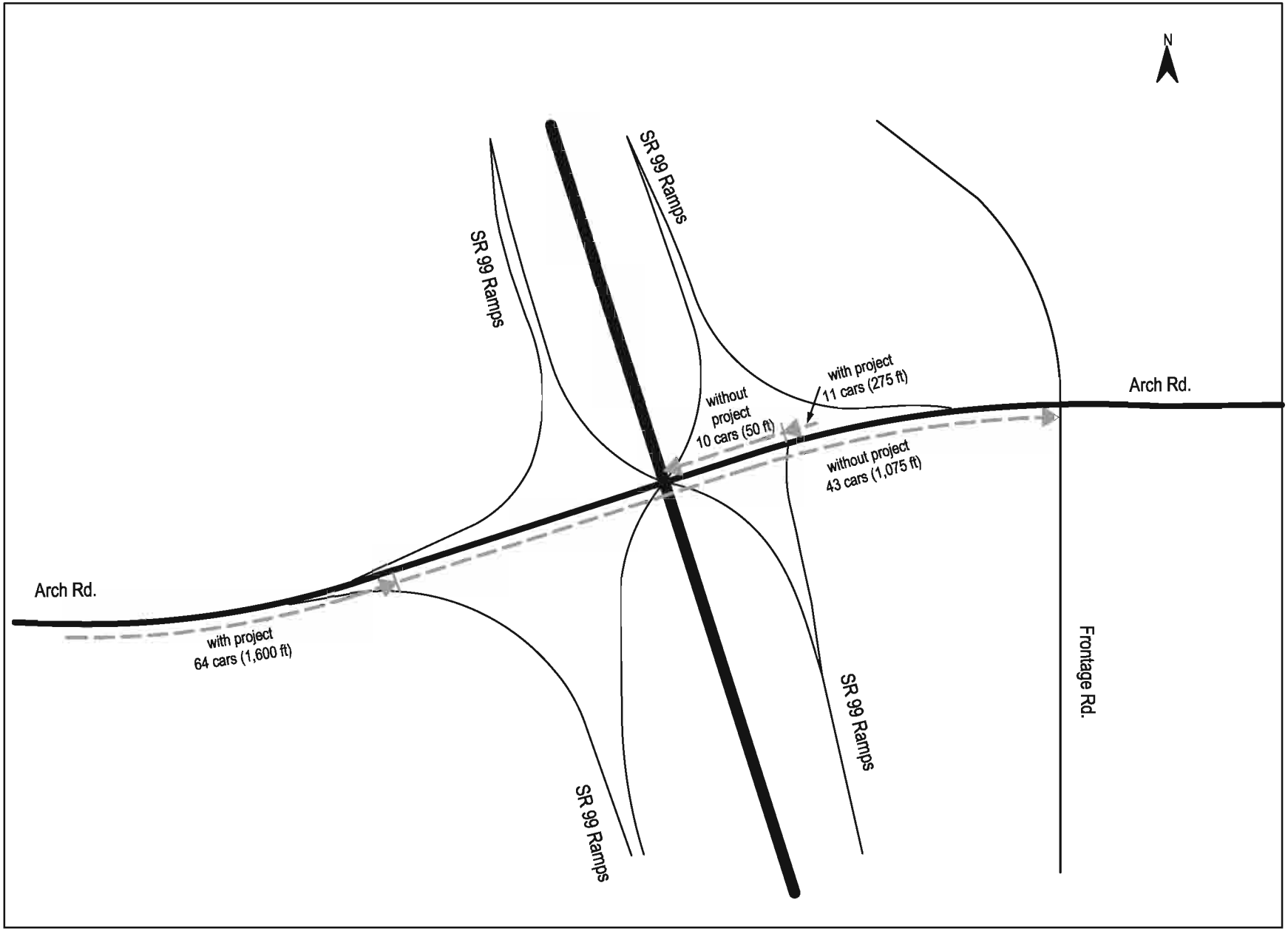
Intersection Level of Service Analysis

The study intersections and their corresponding levels of service with the addition of project-related traffic are presented in **Table 10.**

- The intersection of SR 99 SPUI and Arch Road would remain at LOS C in both AM and PM peak hours.
- The intersection of Kingsley Road (frontage road) and Arch Road would deteriorate from LOS D to LOS E in the AM peak hour and LOS E to LOS F in the PM peak hour, which is considered a potentially significant impact.
- Newcastle Road and Arch Road would deteriorate from LOS B to LOS D in the AM peak hour and LOS C to LOS E in the PM peak hour, which is considered a potentially significant impact.
- The NCWF west driveway and Arch Road would operate at LOS C during the AM and PM peak hours. The NCWF east driveway and Arch Road would operate at LOS B during the AM and PM peak hours.
- The intersection of Austin Road and Arch Road would continue to operate at LOS C or better during both the AM and PM peak hours.
- The intersection Newcastle Road and NCYCC driveway would continue to operate at LOS A during AM and PM peak hours.
- The intersection of Austin Road at the proposed project driveway would operate at LOS B in the AM and PM peak hours.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During both peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road is forecast to be 5 cars and 11 cars, respectively. The eastbound queue for the AM and PM peak hours are forecast to be 64 cars and 17 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queue of 11 cars on the westbound segment will not significantly impact Kingsley Road/Arch Road. However, the eastbound queue of 64 cars (1,600 feet) would exceed 670 feet and would queue beyond the SR 99 SPUI. Since the intersection of Kingsley Road (frontage road)/Arch Road is forecast to operate with unsatisfactory LOS (LOS D and LOS E in the AM peak hour), the project's contribution to the eastbound queue of 64 cars in the a.m. peak hour would create a significant queuing impact. **Figure 7** illustrates the EPAP baseline and EPAP plus project queuing conditions.



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 7
EPAP Baseline and EPAP plus Project
Queuing Summary

Table 10- Intersection Capacity Analysis: EPAP Plus Project

#	Intersection	Background Conditions				Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	27.6	C	37.8	C	30.5	C	32.6	C
2	Kingsley Road (frontage road) and Arch Road	38.2	D	**61.8**	**E**	**69.4**	**E**	**91.6**	**F**
3	Newcastle Road and Arch Road	13.6	B	20.1	C	**55.0**	**D**	**62.6**	**E**
4	NCWF West Driveway and Arch Road	12.2	B	12.7	B	19.2	C	22.2	C
5	NCWF East Driveway and Arch Road	10.5	B	10.3	B	13.9	B	12.6	B
6	Austin Road and Arch Road	9.0	A	10.3	B	12.1	B	19.2	C
7	Newcastle Road and NCYCC driveway	8.5	A	9.4	A	8.5	A	9.4	A
8	Austin Road and proposed project driveway	N/A		N/A		11.3	B	12.5	B

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
[a] Unsignalized Intersection.

Roadway Segment Level of Service Analysis

The addition of trips associated with the proposed project would result in an increase in peak hour traffic on Arch Road between Newcastle Road and the project site. However, the LOS of the roadway segment would remain at an acceptable LOS A under the EPAP plus Project Conditions. Austin Road between Arch Road and the project site will also experience an increase in volume; however the LOS on the roadway segment would remain at an acceptable LOS (LOS D). **Table 11** summarizes the estimated roadway segment LOS.

Table 11- Roadway Segment Analysis: EPAP Plus Project

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	45 mph (EB)	A	44 mph (WB)	A
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	490 (SB)	D	433 (NB)	D

Site Access and Circulation

Project access and circulation were analyzed for the proposed project based on the existing site configuration and access roadways. The proposed site plan (see **Figure 8**) shows one driveway: the proposed project driveway is a two-way, two-lane road that would provide direct access to the staff and visitor parking area located on the west side of the facility. Based on the driveway capacity and parking lot locations, no adverse circulation impacts are anticipated.

Parking Conditions Analysis

Parking Supply

The existing parking lot located within the project site currently has a capacity of approximately 951 parking spaces designated for employee parking. With the implementation of the proposed project, approximately 1,429 parking spaces would be provided on-site, an increase of 478 spaces.

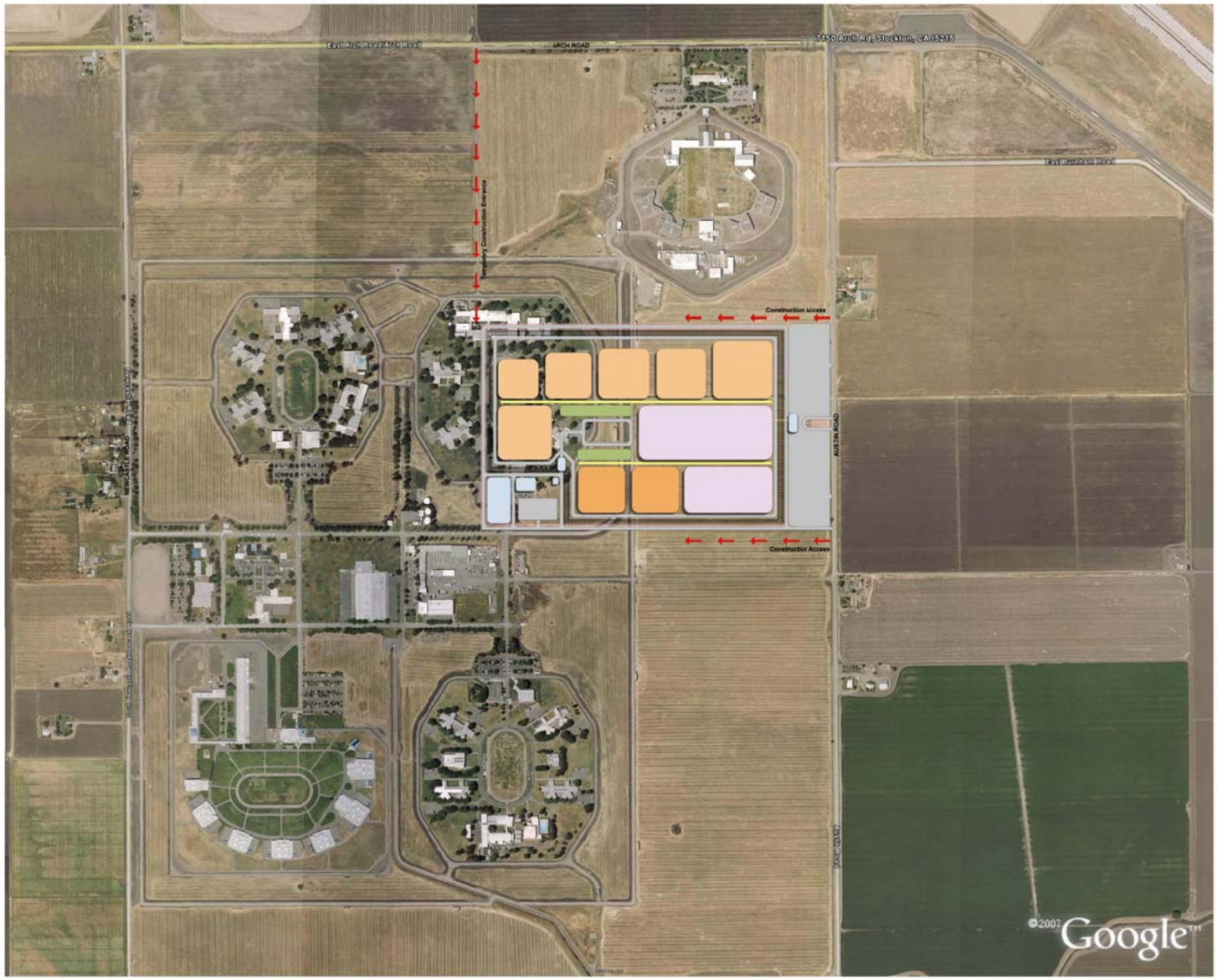
Parking Demand of Project

The parking demand on-site was determined by calculating the number of employees per shift, and the number of visitors/deliveries that would access the project site throughout the day. Approximately five employee shifts occur on-site throughout the day, with visitors/deliveries accessing the site between 8:00 AM to 8:00 PM. **Table 12** provides a summary of the parking demand for the project site.

Table 12- NCYCC Parking Demand

Time Period	8:00AM-2:00PM	2:00PM-5:00PM	5:00PM-8:00PM	8:00PM-10:00PM	10:00PM-6:00AM	6:00AM-8:00AM
Employee Shift 1 (8 AM- 5PM)	**353**	353				
Employee Shift 2 (10PM-6AM)					217	
Employee Shift 3(6AM-2PM)	**586**					586
Employee Shift 4(2PM-10PM)		431	431	431		
Employee Shift 5(8AM-8PM)	**59**	59	59			
Delivery	**42**	42	42	-	-	-
Visitors	**232**	232	232	-	-	-
Total Parking Demand	**1,272**	1,117	764	431	217	586

As shown in the table, the peak period at the project site would occur between 8:00 AM and 2:00 PM, with a peak parking demand of 1,272 parked vehicles. To provide a conservative estimate, it was assumed that the maximum number of visitors (232 vehicles) and deliveries (42 vehicles) would be on-site between the hours of 8:00 AM to 8:00 PM. Compared to the proposed parking supply (1,426 parking spaces), adequate parking would be provided on the project site with the implementation of the proposed project.



SITE PLAN COLOR LEGEND

- PROPERTY AREA
- DEVELOPED/ USED AREA
- SET BACK AREA
- PARKING & ROADS
- RECREATIONAL AREAS
- HOUSING
- WOMEN 'S
- DIAGNOSTIC & TREATMENT
- SUPPORT
- CONNECTING CORRIDORS
- EXISTING BUILDINGS

0' 300' 600' 1200'

Site Planning Studies

California Prison Receivership

05/12/08

G:\30700\000\Programming\Arch\Revit Site Models\Pres\080512\Stockton 08-05-12.rvt

DRAFT

Figure 8
Site Plan

5.0 CUMULATIVE 2035 GENERAL PLAN CONDITIONS

5.1 Cumulative 2035 General Plan: No Project Conditions

This section describes the traffic operating conditions at the study intersections for the future year of 2035 based on the City of Stockton's 2035 General Plan and buildout of the Mariposa Lakes project. Similar to the Background Conditions, traffic related to the Mariposa Lakes development full build out was added to the baseline traffic conditions. Based on the 2035 General Plan build out and the mitigation measures noted in the Mariposa Lakes Traffic Study, the following roadway improvements were assumed to be implemented, and thus were included in this analysis:

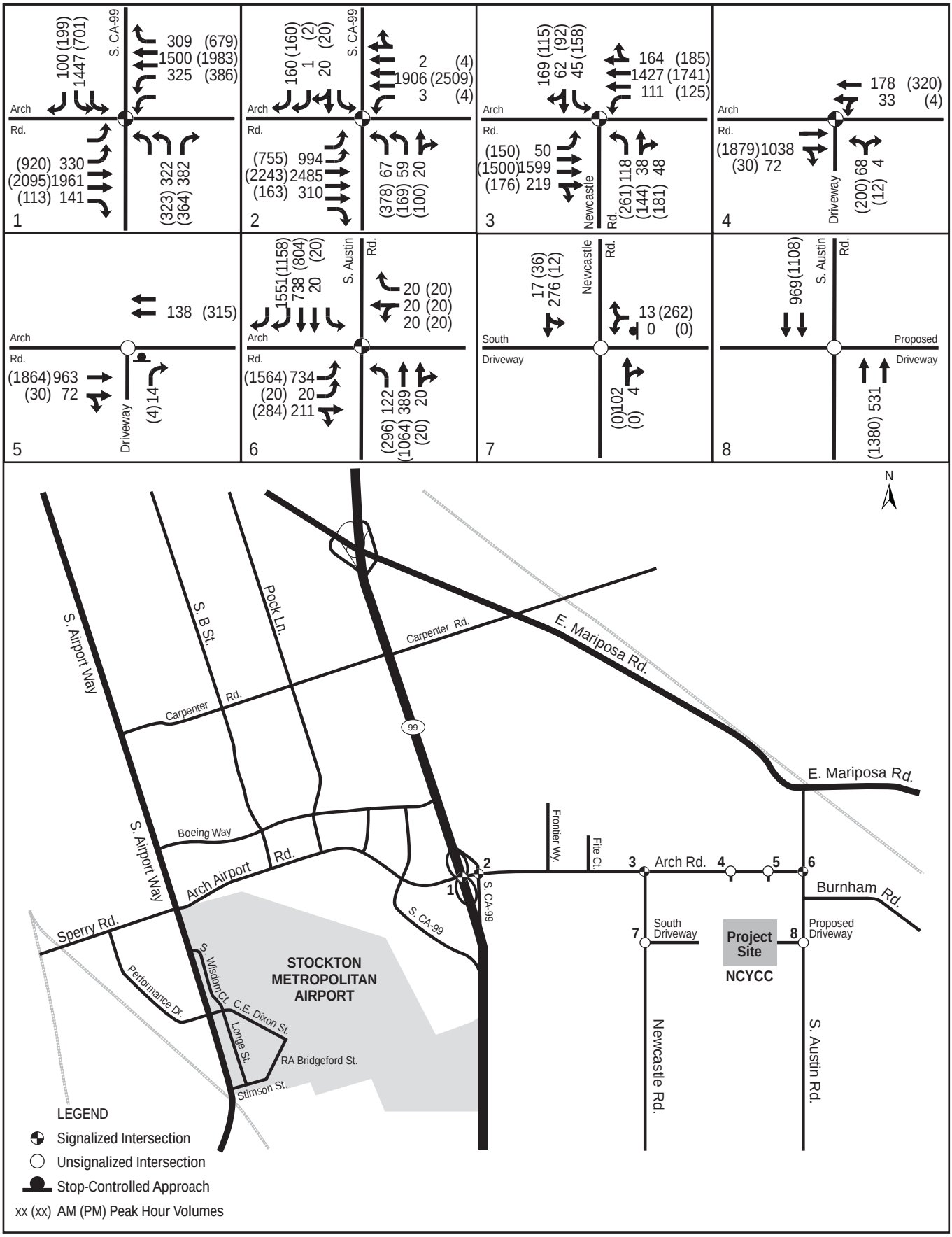
- Arch Road will be a six-lane road between SR 99 and Newcastle Road; and four-lanes between Newcastle Road and Austin Road.
- Lane configurations at intersections 3 and 6 will be modified as shown in Figure 7.

The future intersection configurations and traffic volumes are presented in **Figure 9**.

Per direction of the City of Stockton Public Works Department, 2035 General Plan plus Mariposa Lakes Development peak hour traffic volumes were to be taken from the *Traffic Study for the Proposed Mariposa Lakes Development* (TJKM, 2007). The 2035 traffic volumes for the project study area were based on the City's 2035 General Plan Model as referenced in the TJKM study. Based on review of the 2035 General Plan plus Mariposa Lakes Development peak hour traffic volumes analyzed in the General Plan model, it was determined that the use of those peak hour traffic volumes from the TJKM study would be appropriate for this TIA.

According to the City of Stockton intersection level of service standards, two study intersections would operate at deficient levels during the AM peak hour, and three study intersections would operate at a deficient level during the PM Peak Hour.

- The intersection of SR 99 SPUI and Arch Road would operate at LOS F during both the AM and PM peak hours. The intersection of Kingsley Road (frontage road) and Arch Road would operate at LOS B in the AM peak hour and at LOS C during the PM peak hour.
- The intersection of Newcastle Road and Arch Road would operate at LOS C or better during both the AM and PM peak hours.
- The NCWF west driveway and Arch Road would operate at LOS A during the AM peak hour and at LOS B during the PM peak hour.
- The NCWF east driveway and Arch Road would operate at LOS B during the AM peak hour and LOS C during the PM peak hour.



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 9
Cumulative 2035 General Plan (with Mariposa Lakes) – No Project
Intersection Lane Geometry and Peak Hour Traffic Volumes

- The intersection of Austin Road and Arch Road would operate at LOS D during the AM peak hour and at LOS E during the PM peak hour.
- The intersection of Newcastle Road and NCYCC driveway would operate at LOS A during the AM peak hour and LOS B during the PM peak hour.

The intersection LOS deterioration in this scenario is a result of the significant area-wide growth in the future, including the Mariposa Lakes development. The intersections and their corresponding levels of service for the 2035 General Plan build out scenario without Project are presented in **Table 13.**

Table 13- Intersection Capacity Analysis: 2035 General Plan No Project

#	Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
		Avg. Delay[1]	LOS[2]	Avg. Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	**116.6**	**F**	**99.4**	**F**
2	Kingsley Road (frontage road) and Arch Road	19.8	B	29.2	C
3	Newcastle Road and Arch Road	20.9	C	32.5	C
4	NCWF West Driveway and Arch Road	6.3	A	14.9	B
5	NCWF East Driveway and Arch Road	12.3	B	18.8	C
6	Austin Road and Arch Road	30.2	D	**67.0**	**E**
7	Newcastle Road and NCYCC driveway	8.8	A	10.6	B
8	Austin Road and proposed project driveway	N/A		N/A	

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road is forecast to be 32 cars and 56 cars, respectively. The eastbound queue for the AM and PM peak hours are 13 cars and 16 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queue of 16 cars on the eastbound segment would not significantly impact Kingsley Road/Arch Road. However, the westbound segment of 56 cars (1,400 feet) would exceed 670 feet and would queue beyond the SR 99 SPUI. Since the SR 99 SPUI/Arch Road intersection is forecast to operate at LOS F, the background queues would have a significant impact to the westbound direction in both peak hours.

Roadway Segment Operating Conditions

The roadway segment's peak hour volume and its corresponding level of service are presented in **Table 14.** According to this table, the roadway segments in this study operate at an acceptable level of service (LOS D or better) for the 2035 General Plan with No Project Conditions, with the exception of Arch Road during the PM peak hour. This roadway segment is forecast to operate at LOS F.

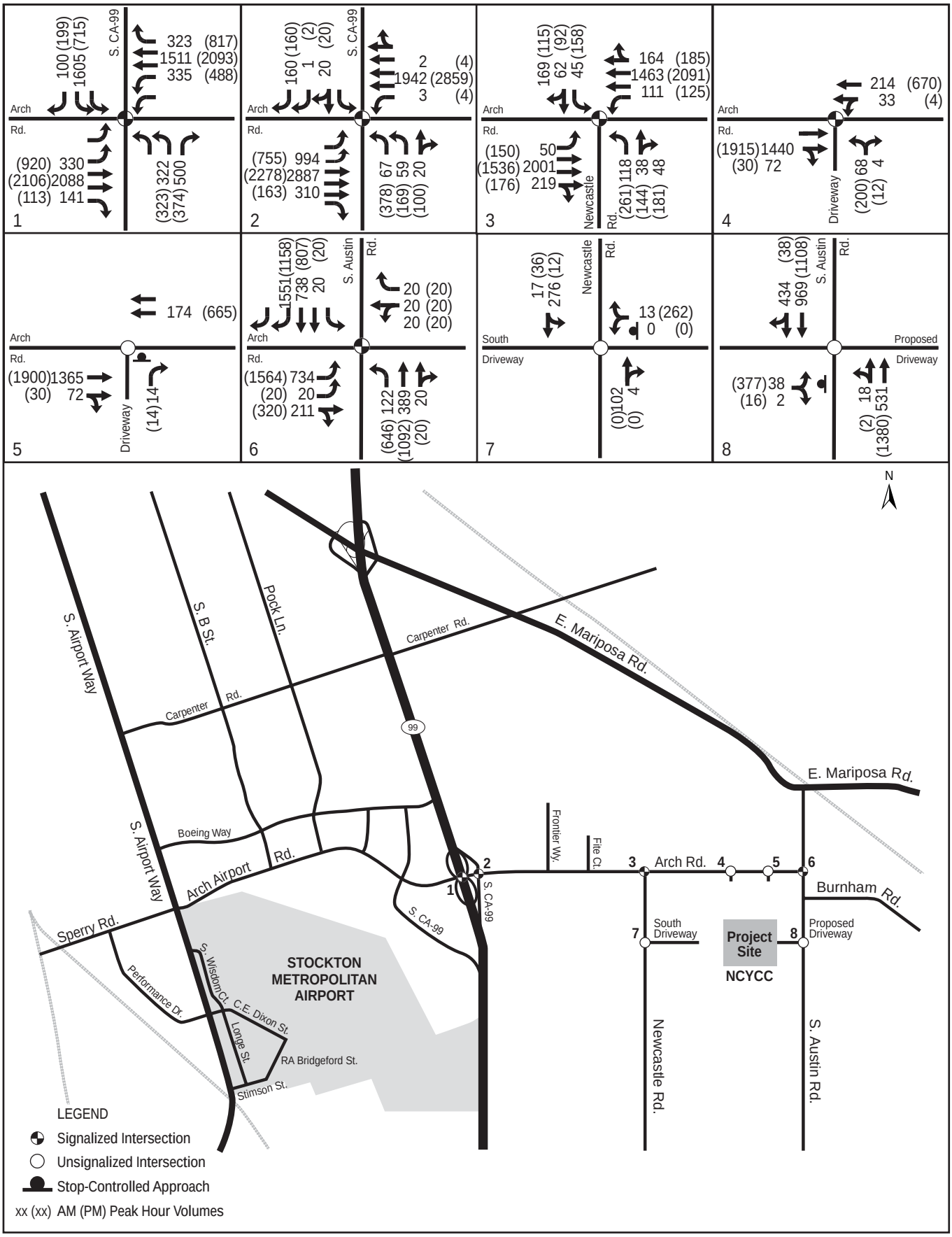
Table 14- Roadway Segment Analysis: 2035 General Plan No Project

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	4-Lane Arterial (w/ Center Left Turn Lane)	29 mph (WB)	C	**12 mph (EB)**	**F**
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	4-Lane Arterial (w/ Center Left Turn Lane)	969 (SB)	D	1,380 (NB)	D

5.2 Cumulative 2035 General Plan: With Project Conditions

This section describes the traffic operating conditions at the study intersections for the future year of 2035 with the addition of Project-related traffic. Vehicular traffic that would be generated by the project in the neighboring area was added to the future condition turning movement volumes at the study intersections in order to evaluate the overall 2035 General Plan plus Project Cumulative Scenario. Project-related traffic was added to the study intersections and roadway segment using similar methods described previously in Section 4.0. The intersection lane configurations and traffic volumes are presented in **Figure 10**.

- The intersection of SR 99 SPUI and Arch Road would continue to operate at LOS F during the AM and PM peak hours, with a maximum increase in delay of 31.6 seconds, which is considered a potentially significant impact.
- The intersection of Kingsley Road (frontage road) and Arch Road would operate at LOS B in the AM peak LOS C in the PM peak hour.
- The intersection of the NCWF west driveway and Arch Road would operate at LOS A and B during both the AM and PM peak hours, respectively.
- The intersection of the NCWF east driveway and Arch Road would operate at LOS C during both the AM and PM peak hours.
- The intersection of Austin Road and Arch Road would continue to operate at LOS D during AM peak hour and would deteriorate from LOS E to LOS F during PM peak hour. The increase in delay during PM peak hour would be 45.5 seconds which is a potentially significant impact.



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 10
Cumulative 2035 General Plan Plus Project (with Mariposa Lakes)
Intersection Lane Geometry and Peak Hour Traffic Volumes

- The proposed project would result in a potentially significant impact at the intersection of Austin Road and proposed project driveway as it would operate at LOS F during both the AM and PM peak hours.

The remaining study intersections would continue to operate at the same LOS as under the 2035 General Plan build out without Project scenario. The intersections operating at deficient levels would experience increases in delay of less than five seconds; therefore no additional significant cumulative impacts are anticipated.

- The intersection of Arch Road at Newcastle Road would operate at LOS C or better during both the AM and PM peaks.
- The intersection of Newcastle Road/NCYCC driveway would operate at LOS A during AM and PM peak hours. The study intersections and their corresponding levels of service are summarized in **Table 15.**

Table 15- Intersection Capacity Analysis 2035 General Plan Plus Project

#	Intersection	2035 G.P. Conditions				2035 G.P. +Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	**116.6**	**F**	**99.4**	**F**	**148.2**	**F**	**115.2**	**F**
2	Kingsley Road (frontage road) and Arch Road	19.8	B	29.2	C	19.7	B	32.6	C
3	Newcastle Road and Arch Road	20.9	C	32.5	C	21.0	C	34.6	C
4	NCWF West Driveway and Arch Road	6.3	A	14.9	B	5.8	A	14.4	B
5	NCWF East Driveway and Arch Road	12.3	B	18.8	C	15.0	C	19.1	C
6	Austin Road and Arch Road	30.2	D	**67.0**	**E**	40.5	D	**112.5**	**F**
7	Newcastle Road and NCYCC driveway	8.8	A	10.6	B	8.8	A	10.6	B
8	Austin Road and proposed project driveway	9.0	A	9.0	A	**50.4**	**F**	**ovrflw**	**F**

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
Ovrflw = overflow conditions, when predicted delay is over 200 seconds and beyond the limit of the analysis equation to accurately calculate a delay.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road are 33 cars and 62 cars, respectively. The eastbound queue for the AM and PM peak hours are 18 cars and 16 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queuing of 18 cars on the eastbound segment would not significantly impact SR 99 SPUI/ Arch Road. However, the westbound queue of 62 cars (1,550 feet) would exceed 670 feet and queue beyond Kingsley Road/Arch Road. Since the intersection of SR 99 SPUI and Arch Road is forecast to operate at LOS F in the p.m.

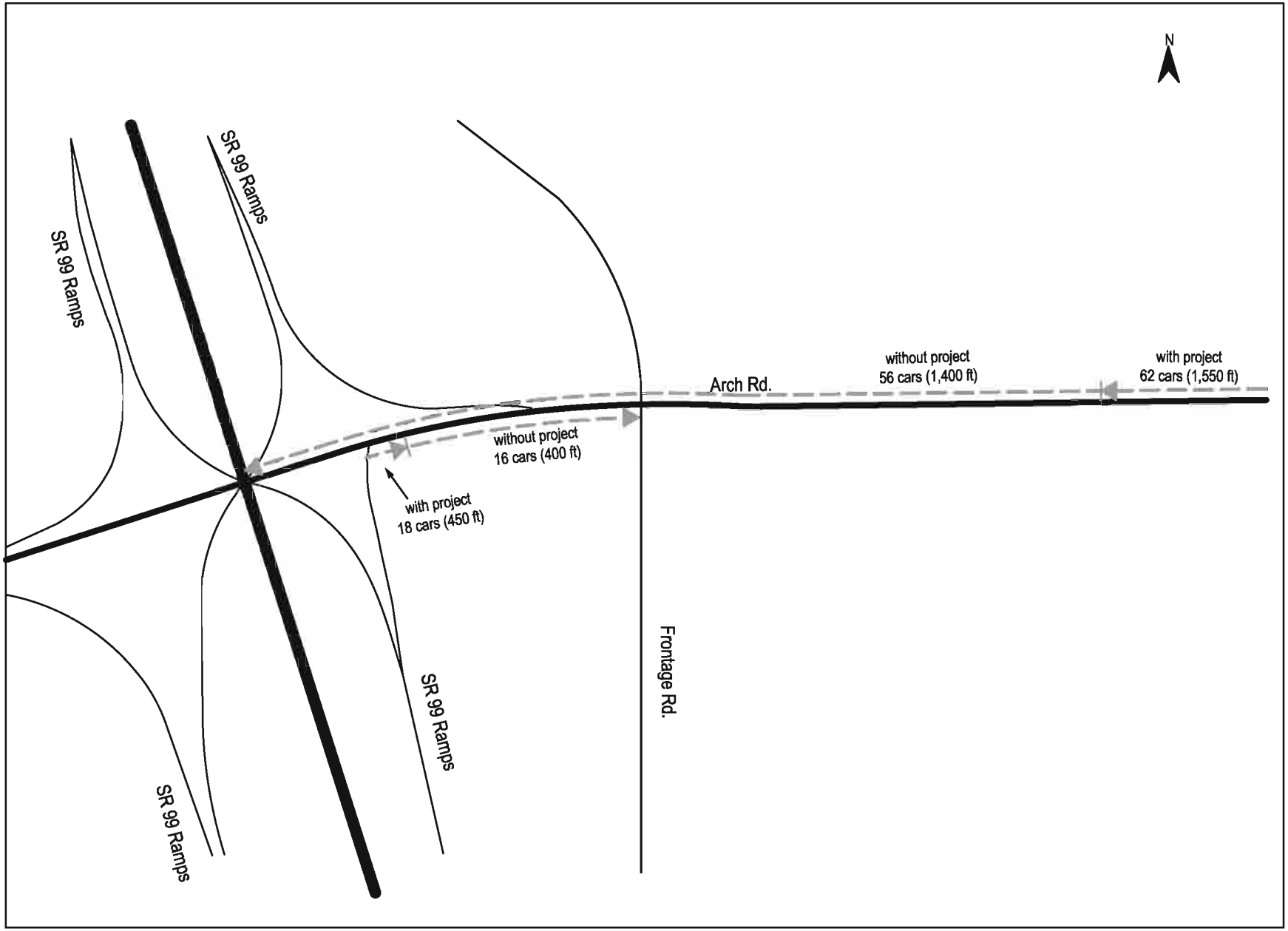
peak hour, the addition of project traffic to this queue would be a significant impact. **Figure 11** illustrates the 2035 No Project and 2035 plus project queuing conditions.

Roadway Segment Operating Conditions

The roadway segment's peak hour volume and its corresponding level of service are presented in **Table 16**. According to this table, the roadway segments in this study operate at unacceptable levels of service (LOS F) during the PM peak hour for the 2035 General Plan Build Out with Project Conditions, which results in a potentially significant impact.

Table 16- Roadway Segment Analysis: 2035 General Plan: With Project

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	4-Lane Arterial (w/ Center Left Turn Lane)	23 mph (WB)	D	**11 mph (EB)**	**F**
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	4-Lane Arterial (w/ Center Left Turn Lane)	1,403 (SB)	D	**1,758 (NB)**	**F**



DKS Associates
TRANSPORTATION SOLUTIONS

Figure 11
2035 Baseline and 2035 plus Project
Queuing Summary

6.0 FREEWAY MAINLINE ANALYSIS

In the capacity analysis of SR 99, the freeway was analyzed both in its current four lane configuration and the planned six lane configuration for the existing and EPAP scenarios. Since the City of Stockton General Plan is recommending a 10 lane cross-section for SR 99 by 2035, the 2035 General Plan scenario was analyzed under both a six lane and a ten lane configuration.

The freeway was analyzed along two basic segments - north of the Arch Road interchange and south of the Arch Road interchange. No weaving analysis was required due to spacing of ramps of more than 2,500 feet between Arch Road and French Camp Road, and Arch Road and Mariposa Road. Therefore, for all the scenarios the freeway segment was analyzed as a basic mainline section using the analysis methodologies of the 2000 Highway Capacity Manual and *Highway Capacity Software (HCS)*.

Facilities under the jurisdiction of Caltrans, including freeway segments, ramps, ramp terminals, signalized and unsignalized intersections and urban streets are required to utilize the current Caltrans standard to determine project impact. Caltrans standards strive to maintain acceptable freeway operations between LOS C and LOS D.

Table 17 shows the LOS criteria for freeway basic mainline and weaving segments. For this study, a freeway segment exceeding LOS D is considered impacted.

Table 17- Freeway Segments – LOS Thresholds

Level of Service	Maximum V/C Ratio	Maximum Density (pvpmpl)
A	0.32	11
B	0.53	18
C	0.74	26
D	0.90	35
E	1.00	45
F	Varies	Varies

Source: Transportation Research Board, Special Report 209, Highway Capacity Manual, Washington, D.C., pages 23-3 and 23-4
Notes: v/c=volume-to-capacity ratio; pvpmpl=passenger vehicles per mile

The results of freeway level of service analysis are summarized in **Tables 18** and **19.** As shown in the tables, under the Existing Conditions, SR 99 currently operates at an acceptable LOS during the peak hours, with the exception of southbound SR 99 south of Arch Road (LOS E during PM Peak Hour). Caltrans is currently planning

to widen SR 99 from four lanes to six lanes once funding has been secured. Therefore, all future scenarios were analyzed both under the current four lane configuration as well as the planned six lane configuration.

Under EPAP condition, with and without project, both northbound and southbound SR 99 (north and south of Arch Road) would operate at LOS E or F during the peak hours as a four-lane highway. With the widening of SR 99 from four lanes to six lanes, the freeway segments north and south of Arch Road would operate at an acceptable LOS (LOS D or better).

Under the 2035 with and without project conditions, SR 99 (north and south of Arch Road) is forecast to operate at LOS F as a six-lane highway. With the widening of SR 99 from a six-lane to a ten-lane highway, the freeway segments north and south of Arch Road would operate at an acceptable LOS (LOS D or better), with the exception of northbound SR 99 (north of Arch Road) during the PM peak hour. The addition of project traffic to this segment of SR 99 would create a significant cumulative impact.

Table 18- Freeway Segments LOS Summary – No Project Conditions

Scenario	SR 99 Freeway Segment Location	Total Lanes	Dir.	AM Peak Hour			PM Peak Hour		
				Volume	V/C	LOS	Volume	V/C	LOS
Existing Conditions	N. of Arch Road	4	SB	3335	0.90	D	3104	0.84	D
			NB	2600	0.70	C	2806	0.76	D
	S. of Arch Road	4	SB	2294	0.62	C	3623	0.98	**E**
			NB	2997	0.81	D	2692	0.73	C
EPAP Scenario	N. of Arch Road	4	SB	3942	1.07	**F**	3592	0.97	**E**
			NB	3251	0.88	D	3912	1.06	**F**
		6	SB	3942	0.71	C	3592	0.65	C
			NB	3251	0.59	C	3912	0.70	C
	S. of Arch Road	4	SB	2400	0.65	C	3190	0.86	D
			NB	3414	0.92	**E**	2671	0.72	C
		6	SB	2400	0.43	B	3190	0.57	C
			NB	3414	0.62	C	2671	0.48	B
2035 Cumulative Conditions No Project	N. of Arch Road	6	SB	7863	1.42	**F**	6128	1.10	**F**
			NB	5088	0.92	**E**	8358	1.51	**F**
		10	SB	7863	0.85	D	6128	0.66	C
			NB	5088	0.55	C	8358	0.90	**E**
	S. of Arch Road	6	SB	5765	1.04	**F**	5641	1.02	**F**
			NB	5242	0.94	**E**	6789	1.22	**F**
		10	SB	5765	0.62	C	5641	0.61	C
			NB	5242	0.57	C	6789	0.73	C

Table 19- Freeway Segments LOS Summary – With Project Conditions

Scenario	SR 99 Freeway Segment Location	Total Lanes	Dir.	AM Peak Hour Volume	AM Peak Hour V/C	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour V/C	PM Peak Hour LOS
Existing plus Project Conditions	N. of Arch Road	4	SB	3493	0.94	**E**	3118	0.84	D
			NB	2614	0.71	C	2944	0.80	D
	S. of Arch Road	4	SB	4071	1.10	**F**	3725	1.01	**F**
			NB	3668	0.99	**E**	2702	0.73	C
EPAP Plus Project	N. of Arch Road	4	SB	4100	1.11	**F**	3606	0.97	**E**
			NB	3265	0.88	D	4050	1.09	**F**
		6	SB	4100	0.74	C	3606	0.65	C
			NB	3265	0.59	C	4050	0.73	C
	S. of Arch Road	4	SB	2410	0.65	**C**	3292	0.89	D
			NB	3532	0.95	**E**	2681	0.72	C
		6	SB	2410	0.43	B	3292	0.59	C
			NB	3532	0.64	C	2681	0.48	B
2035 Cumulative Conditions Plus Project	N. of Arch Road	6	SB	8021	1.45	**F**	6142	1.11	**F**
			NB	5102	0.92	**E**	8496	1.53	**F**
		10	SB	8021	0.87	D	6142	0.66	C
			NB	5102	0.55	C	8496	0.92	**E**
	S. of Arch Road	6	SB	5775	1.04	**F**	5743	1.03	**F**
			NB	5360	0.97	**E**	6799	1.23	**F**
		10	SB	5775	0.62	C	5743	0.62	C
			NB	5360	0.58	C	6799	0.74	C

7.0 CONSTRUCTION IMPACT ANALYSIS

Construction of the proposed project is anticipated to start in March 2009, with a completion date of March 2011 (24 months). The construction phases for the proposed project include demolition, grading, foundation, utilities, and building construction. Construction trip generation estimates were based on the information provided by CPR staff. During the peak construction period (approximately 7 months), construction activities would require up to 1,700 construction workers that would commute to the site on a daily basis. Assuming an average vehicle occupancy rate of one person per vehicle (1.0 AVO), approximately 3,400 daily construction trips would occur on-site during the peak construction period. In addition, it is estimated that 55 daily truck trips (i.e. dozers, cranes, forklift, TLB - tractor/loader/backhoe, compressors, and welders) would access the project site during the peak construction period. For purposes of this analysis, a passenger car equivalency (PCE) ratio of 3.0 was applied to the truck trips to determine the total passenger vehicle trips.

Table 20 provides the trip generation estimates during, the peak construction period. It should be noted that the analysis assumed 50-percent of the daily construction related trips would access the site during the AM and PM peak hours, while the remaining 50-percent would access the site at other times during the day, before or after, the peak commute hours. As such, the construction traffic trip generation would be approximately 3,730 daily trips, including 933 AM peak hour trips, and 933 PM peak hour trips.

Table 20- Construction Phase Trip Generation Estimates NCYCC Project

		AM Peak Hour			PM Peak Hour		
Land Use	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Construction Phase-NCYCC Project							
-Construction Worker	3,400	850	0	850	0	850	850
-Heavy Vehicles	330	83	0	83	0	83	83
Total Construction Trip Generation	***3,730***	***933***	***0***	***933***	***0***	***933***	***933***

Notes:
Daily staff trips based on total of 1,700 construction workers at 1 A.V.O.
Daily Heavy Vehicle trips based on 55 one-way truck trips at 3.0 PCE (Passenger Car Equivalency).
Peak hour trips assume approximately 50 percent of daily trips would access the project site.

The construction trips would generate approximately twice the amount of vehicle trips than the "plus project" condition during the peak hours, resulting in changes to LOS at the study intersections. Therefore, the addition of construction trips would cause a temporary impact at intersections along Arch Road during the 7-month peak construction period.

The following scenario was analyzed with project construction trips (at 933 AM and PM peak hour trips):

- **Existing plus Project Construction Trips.** This scenario analyses existing conditions plus the proposed project construction trips.

Intersection Level of Service Analysis

Table 21 presents the level of service for the existing plus project construction trips. The following study intersections are forecast to operate with an unsatisfactory level of service (LOS E or F) with the addition of project-related construction traffic:

- The intersection of Austin Road and Arch Road (LOS F during both peak hours)
- The intersection of Austin Road and proposed project driveway (LOS F during the PM peak hour)

Table 21- Intersection Capacity Analysis: Existing plus Project Construction Trips

#	Intersection	Background Conditions				Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	26.7	C	26.4	C	26.0	C	25.2	C
2	Kingsley Road (frontage road) and Arch Road	29.3	C	30.1	C	24.2	C	32.3	C
3	Newcastle Road and Arch Road	4.2	A	16.8	B	4.1	A	9.2	A
4	NCWF West Driveway and Arch Road	9.9	A	10.3	B	20.6	C	31.2	D
5	NCWF East Driveway and Arch Road	9.4	A	9.3	A	15.8	C	14.2	B
6	Austin Road and Arch Road	8.0	A	8.0	A	**72.9**	**F**	**188.5**	**F**
7	Newcastle Road and NCYCC driveway	8.4	A	10.6	B	8.4	A	10.6	B
8	Austin Road and proposed project driveway	N/A		N/A		10.2	B	**53.9**	**F**

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road is forecast to be 3 cars and 6 cars, respectively. The eastbound queue for the AM and PM peak hours is 16 cars and 7 cars, respectively. The distance between SR 99 SPUI intersection and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queue of 6 cars on the westbound segment 16 cars on eastbound segment would not significantly impact the SR 99 SPUI. Therefore, there would be significant queuing impact.

Roadway Segment Level of Service Analysis

Table 22 summarizes the estimated roadway segment LOS. According to the City of Stockton roadway level of service standards, the Austin Road study roadway segment would operate at unacceptable level of service (LOS F) for the Existing plus Project Construction Trips condition in both peak hours, which results in a potentially significant impact.

Table 22- Roadway Segment Analysis: Existing plus Project Construction Trips

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	43 mph (EB)	A	41 mph (WB)	B
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	**953 (SB)**	**F**	**951 (NB)**	**F**

Freeway Mainline Level of Service Analysis

The freeway was analyzed along two basic segments - north of the Arch Road interchange and south of the Arch Road interchange. No weaving analysis was required due to spacing of ramps of more than 2,500 feet between Arch Road and French Camp Road, and Arch Road and Mariposa Road. The results of freeway level of service analysis for Existing plus Project Construction Trips Condition are summarized in **Table 23.**

Table 23- Freeway Mainline Analysis: Existing plus Project Construction Condition

Scenario	SR 99 Freeway Segment Location	2-Way Total Lanes	Dir.	AM Peak Hour			PM Peak Hour		
				Volume	V/C	LOS	Volume	V/C	LOS
Existing plus Project Construction Trips	N. of Arch Road	4	SB	3662	0.99	**E**	3104	0.84	D
			NB	2600	0.70	C	3133	0.85	D
	S. of Arch Road	4	SB	2294	0.62	C	3866	1.04	**F**
			NB	3240	0.88	D	2692	0.73	C

According to the table, both northbound and southbound SR 99 (north and south of Arch Road) would operate at LOS E or F during the peak hours as a four-lane highway.

Mitigation Measures

A Construction Traffic Mitigation Plan (CTMP) should be prepared that identifies the arrival and departure of construction employees and vehicles. The plan would establish a maximum threshold of vehicles per peak-hour for construction-related

traffic trips, taking into account additional thresholds such as queue spillback and route restrictions. The plan could also encourage carpooling between construction workers with a target Average Vehicle Occupancy (AVO) of 1.75 persons per car; consider a revised construction schedule that allows no more than 50 percent of construction employees to arrive and depart at the site during the peak hours; encourage the use of multiple access routes to the project site; and the implementation of shuttle buses with remote stops for construction workers.

As part of the Existing plus Project Construction trips analysis, the following measures are recommended to be included in the CTMP. The CTMP measures to be implemented are:

- Encourage construction workers carpooling and have a goal of 1.75 AVO at all times during the construction period.
- Encourage the arrivals and departures of construction traffic to be no more than 50 percent during the peak hours.
- Encourage construction traffic to (equally) utilize three separate east-west routes to the project site, via Austin Road: 1) Mariposa Road; 2) Arch Road; and 3) French Camp Road. This would disperse construction trips from Arch Road and SR 99 north and south of Arch Road.
- Recommend four shuttle buses (seating capacity = 40) be used to pick up construction workers from four remote locations. These four pick up locations would ideally be located in north Stockton, two in central Stockton and one in the south towards the City of Modesto.

The implementation of revised construction worker shifts would revise the project construction peak hour trip generation as shown in **Table 24**.

Table 24- Construction Phase Trip Generation Estimates NCYCC Project (Per Shift)

		AM Peak Hour			PM Peak Hour		
Land Use	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Construction Phase-NCYCC Project							
-Construction Worker (1.75 AVO)	1,944	486	0	486	0	486	486
-Heavy Vehicles	330	83	0	83	0	83	83
Total Construction Trip Generation	***2,274***	***569***	***0***	***569***	***0***	***569***	***569***

Notes:
Daily staff trips based on total of 1,700 construction workers at 1.75 A.V.O.
Daily Heavy Vehicle trips based on 55 one-way truck trips at 3.0 PCE (Passenger Car Equivalency).

With the implementation of the CTMP, the study intersections would operate at satisfactory LOS (LOS D or better), as shown in **Table 25**.

Table 25- Intersection Capacity Analysis: Existing Plus Condition Plus Project Construction Trips using CTMP

#	Intersection	Project Conditions (933 Peak hour trips)				Project Conditions (569 Peak hour trips)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	26.0	C	25.2	C	26.1	C	26.0	C
2	Kingsley Road (frontage road) and Arch Road	24.2	C	32.3	C	25.0	C	30.1	C
3	Newcastle Road and Arch Road	4.1	A	9.2	A	3.0	A	9.3	A
4	NCWF West Driveway and Arch Road	20.6	C	31.2	D	14.8	B	17.5	C
5	NCWF East Driveway and Arch Road	15.8	C	14.2	B	12.4	B	11.6	B
6	Austin Road and Arch Road	**72.9**	**F**	**188.5**	**F**	14.2	B	32.1	D
7	Newcastle Road and NCYCC driveway	8.4	A	10.6	B	8.4	A	10.6	B
8	Austin Road and proposed project driveway	10.2	B	**53.9**	**F**	8.7	A	15.0	B

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

After implementation of recommended mitigation measures, the eastbound and westbound queues at the intersection of SR 99 and Frontage Road would continue to be less than the 670 foot distance between the intersections. Therefore, there would be no significant queuing impact.

Roadway Segment Level of Service Analysis

After implementation of recommended mitigation measures, the roadway segments in this study would operate at acceptable LOS (LOS D or better). Arch Road, from Newcastle Avenue to the NCWF West Driveway, would operate at LOS A (45 mph) in the a.m. peak hour in the peak eastbound direction, and LOS B (42 mph) in the p.m. peak hour in the peak westbound direction. Austin Road, from Arch Road to the Proposed Project Driveway, would operate at LOS D (601 vehicles) in the a.m. peak hour in the peak southbound direction, and LOS D (598 vehicles) in the p.m. peak hour in the peak northbound direction.

Freeway Mainline Level of Service Analysis

With implementation of recommended measures in the CTMP, the freeway segments north and south of Arch Road would be mitigated back to their existing baseline levels of service. The SR 99 southbound mainline segment north of Arch Road would continue to operate at LOS E at 0.92 V/C (existing baseline is LOS E at 0.90 V/C). The SR 99 southbound mainline segment south of Arch Road would also continue to operate at LOS E at 0.99 V/C (existing baseline is LOS E at 0.98 V/C). All other mainline segments are forecast to operate at LOS D or better. However,

since enforcement and measurement of some of the recommended measures of the CTMP may be hard to quantify, the Existing plus Project Construction Trips traffic volumes to the impacted mainline segments of SR 99, north and south of Arch Road, would create a significant and unavoidable impact.

8.0 PROJECT ALTERNATIVE 1

An alternative project is proposed with a 25 percent reduction in total trips. The revised trip generation table is shown in **Table 26**.

The following scenarios were analyzed with reduced project trips:

- **Scenario 3A: Existing plus Alternative Project Conditions.** This scenario analyzes existing conditions with the proposed project alternative.
- **Scenario 3B: EPAP plus Alternative Project Conditions.** This scenario analyses existing conditions plus approved projects (EPAP) plus the proposed project alternative.
- **Cumulative 2035 General Plan Scenario with Alternative Project Conditions** This scenario analyzes the traffic operating conditions at the study intersections for the future year of 2035 with the addition of the proposed project alternative traffic.

Table 26- Trip Generation – NCYCC Project (25 Percent Total Reduction in Staff Compared to Proposed Project)

		AM Peak Hour			PM Peak Hour		
Land Use	**Daily**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed NCYCC Facility							
-Staff	2,469	309	0	309	0	265	265
-Delivery	32	8	8	16	8	8	16
-Visitors	174	22	22	44	22	22	44
Total Trip Generation	***2,675***	***339***	***30***	***368***	***30***	***294***	***324***

Scenario 3A: Existing plus Alternative Project Condition

This scenario analyzes existing conditions with the proposed project alternative.

Intersection Level of Service Analysis

The study intersections and their corresponding levels of service with the addition of alternative project-related traffic are presented in **Table 27.** The proposed alternative condition with a 25 percent reduction in staff would not result in intersection LOS changes compared to the proposed project analysis.

Table 27- Intersection Capacity Analysis: Existing plus Alternative Project Conditions

#	Intersection	Background Conditions				Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	26.7	C	26.4	C	26.5	C	26.6	C
2	Kingsley Road (frontage road) and Arch Road	29.3	C	30.1	C	26.2	C	29.7	C
3	Newcastle Road and Arch Road	4.2	B	16.8	B	3.1	A	11.1	C
4	NCWF West Driveway and Arch Road	9.9	A	10.3	B	12.7	B	13.4	B
5	NCWF East Driveway and Arch Road	9.4	A	9.3	A	11.1	B	10.4	B
6	Austin Road and Arch Road	8.0	A	8.0	A	10.1	B	11.6	B
7	Newcastle Road and NCYCC driveway	8.4	A	10.6	B	8.4	A	10.6	B
8	Austin Road and proposed project driveway	N/A		N/A		10.5	B	10.9	B

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
[a] Unsignalized Intersection.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road are forecast to be 3 cars in both peak hours. The eastbound queue for the AM and PM peak hours are 9 cars and 5 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queuing of 3 cars on the westbound segment and 9 cars on the eastbound segment will not significantly impact either intersection.

Roadway Segment Level of Service Analysis

According to the City of Stockton roadway level of service standards, the roadway segments would operate at an acceptable level of service (LOS D or better) for the Existing plus Project Conditions. **Table 28** summarizes the estimated roadway segment LOS.

Table 28- Roadway Segment Analysis: Existing plus Alternative Project Conditions

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	45 mph (EB)	A	41 mph (WB)	B
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	483 (SB)	D	424 (NB)	D

Scenario 3B: EPAP plus Alternative Project Conditions

This scenario analyses existing conditions plus approved projects (EPAP), and the proposed project alternative.

Intersection Level of Service Analysis

The study intersections and their corresponding levels of service with the addition of alternative project-related traffic are presented in **Table 29.** The intersection of Kingsley Road (frontage road) and Arch Road would deteriorate from LOS D to LOS E in the AM peak hour, and LOS E to LOS F in the PM peak hour. The LOS at the remaining seven intersections would remain at acceptable LOS (LOS D or better) under the alternative project conditions, compared to the proposed project analysis.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road is forecast to be 5 cars and 11 cars, respectively. The eastbound queue for the AM and PM peak hours is 64 cars and 17 cars, respectively. The distance between SR 99 SPUI intersection and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queue of 11 cars on the westbound segment would not significantly impact the SR 99 SPUI. However, the eastbound queue of 64 cars (1,600 feet) would exceed 670 feet and would queue beyond Kingsley Road/Arch Road. Since the intersection of Kingsley Road (frontage road)/Arch Road is forecast to operate with unsatisfactory LOS (LOS D and LOS E in the AM peak hour), the project's contribution to the eastbound queue of 64 cars in the a.m. peak hour would create a significant queuing impact.

Table 29- Intersection Capacity Analysis: EPAP plus Alternative Project Conditions

#	Intersection	Background Conditions				Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	27.6	C	37.8	C	29.6	C	32.4	C
2	Kingsley Road (frontage road) and Arch Road	38.2	D	**61.8**	**E**	**59.9**	**E**	**83.6**	**F**
3	Newcastle Road and Arch Road	13.6	B	20.1	C	39.1	D	48.7	D
4	NCWF West Driveway and Arch Road	12.2	B	12.7	B	16.9	C	18.7	C
5	NCWF East Driveway and Arch Road	10.5	B	10.3	B	12.9	B	11.9	B
6	Austin Road and Arch Road	9.0	A	10.3	B	10.5	B	14.2	B
7	Newcastle Road and NCYCC driveway	8.5	A	9.4	A	8.5	A	9.4	A
8	Austin Road and proposed project driveway	N/A		N/A		10.6	B	11.2	B

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
[a] Unsignalized Intersection.

Roadway Segment Level of Service Analysis

According to the City of Stockton roadway level of service standards, the roadway segments would operate at an acceptable level of service (LOS D or better) for the EPAP plus Project Alternative Project Conditions. **Table 30** summarizes the estimated roadway segment LOS.

Table 30- Roadway Segment Analysis: EPAP plus Alternative Project Conditions

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	45 mph (EB)	A	44 mph (WB)	A
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	2-Lane Arterial (w/o Center Left Turn Lane)	382 (SB)	D	338 (NB)	C

Cumulative 2035 General Plan Scenario with Alternative Project Conditions

This scenario analyzes the traffic operating conditions at the study intersections for the future year of 2035 with the addition of alternative project traffic.

Intersection Level of Service Analysis

The study intersections and their corresponding levels of service with the addition of alternative project-related traffic are presented in **Table 31.** All intersections would operate at the same LOS as the full project, even after applying a staff reduction of 25 percent.

Table 31- Intersection Capacity Analysis: Cumulative 2035 General Plan Scenario with Alternative Project Conditions

#	Intersection	Background Conditions				Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1	SR 99 SPUI and Arch Road	**116.6**	**F**	**99.4**	**F**	**140.2**	**F**	**111.2**	**F**
2	Kingsley Road (frontage road) and Arch Road	19.8	B	29.2	C	19.7	B	31.5	C
3	Newcastle Road and Arch Road	20.9	C	32.5	C	20.9	C	33.7	C
4	NCWF West Driveway and Arch Road	6.3	A	14.9	B	5.8	A	14.3	B
5	NCWF East Driveway and Arch Road	12.3	B	18.8	C	14.2	B	19.0	C
6	Austin Road and Arch Road	30.2	D	**67.0**	**E**	35.1	D	**100.4**	**F**
7	Newcastle Road and NCYCC driveway	8.8	A	10.6	B	8.8	A	10.6	A
8	Austin Road and proposed project driveway	9.0	A	9.0	A	**41.4**	**E**	**overflow**	**F**

[1] Average Delay – per vehicle, in seconds.
[2] LOS: Level of service based on worst approach delay for two-way stop controlled intersections and average delay for all-way stop controlled intersections.
[a] Unsignalized Intersection.

95th Percentile Queues on Arch Road between SR 99 and Kingsley Road

During the AM and PM peak hours the westbound queue on Arch Road between the SR 99 SPUI and Kingsley Road is forecast to be 33 cars and 61 cars, respectively. The eastbound queue for the AM and PM peak hours are 17 cars and 16 cars, respectively. The distance between SR 99 SPUI and Kingsley Road is approximately 670 feet (27 cars). HCM assumes an average car length as 25 feet and therefore the queue of 20 cars on the eastbound segment will not significantly impact the SR 99 SPUI/Arch Road intersection. However, the westbound queue of 61 cars (1,525 feet) would exceed 670 feet and queue beyond Kingsley Road/Arch Road. Since the intersection of Kingsley Road/Arch Road is forecast to operate at LOS F in p.m. peak hours, the addition of project traffic to this queue would be a significant impact.

Roadway Segment Level of Service Analysis

According to the City of Stockton roadway level of service standards, the roadway segments would operate at unacceptable level of service (LOS F) for the 2035 General Plan with Project Conditions. **Table 32** summarizes the estimated roadway segment LOS.

Table 32- Roadway Segment Analysis: Cumulative 2035 General Plan Scenario with Alternative Project Conditions

		AM Peak Hour		PM Peak Hour	
Roadway Segment (Location)	**Segment Description**	**Speed (Direction)**	**LOS**	**Speed (Direction)**	**LOS**
Arch Road (Newcastle-NCWF West Dwy)	4-Lane Arterial (w/ Center Left Turn Lane)	25 mph (WB)	D	**11 mph (EB)**	**F**
		Volume (Direction)	**LOS**	**Volume (Direction)**	**LOS**
Austin Road (Arch-Proposed Project Dwy)	4-Lane Arterial (w/ Center Left Turn Lane)	1,295 (SB)	D	**1,663 (NB)**	**F**

9.0 MITIGATION MEASURES

As part of this analysis, mitigation measures are recommended for the study intersections and roadway segments where potentially significant impacts may occur. This section describes the potential impact, recommended mitigation measure, and the resulting level of significance after implementation of the mitigation.

For significant traffic impacts created by the proposed project as determined by the City's significant criteria, the project applicant would be required to fully construct and implement the mitigation measure(s). For cumulatively impacted intersections (without the project) where the proposed project would contribute to a cumulative impact, the project applicant would be required to pay their fair-share contribution based on the following formula:

$$\textbf{Project's Fair-Share} = \frac{\textbf{Project Traffic}}{\textbf{Future New Traffic: (Baseline + Project) – (Existing)}}$$

The project's fair-share fees would be assessed per the City of Stockton's 2008 – 2009 Fee Schedule (adopted May 2008). Per the fee schedule, the following are the Public Facility Fees that would pertain to the proposed project:

- Regional Transportation Impact Fee (RTIF): Office/High Density/Guest Rooms = $1,430 per 1,000 square feet
- Street Improvements (includes the Mainline Fee): Office/High Density = $4,567 to $7,197 (for Fee Areas 1 – 6A) per 1,000 square feet
- Traffic Signals: Government Offices per 1,000 square feet at 68.9 trips per unit = $714

These fees would need to be determined and confirmed with the City Public Works Department before building and/or encroachment permits could be issued.

Scenario 3A: Existing Plus Project Conditions

All the study intersections are forecast to operate at an acceptable LOS (LOS C or better) under the Existing plus Project Conditions. Therefore, no mitigation measures are required.

Scenario 3B: EPAP plus Project Conditions

All the study intersections are forecast to operate at an acceptable LOS (LOS C or better) under the EPAP plus Project Conditions, with the exception of Kingsley Road (frontage road) and Arch Road, and Newcastle Road and Arch Road.

Intersection #2 – Arch Road at Frontage Road/Kingsley Road

The addition of project-related trips would result in the increase in LOS from LOS D to LOS E in the AM peak hour and LOS E to LOS F in the PM peak hour, which would be a significant impact. To offset this impact, it is recommended that the

intersection change the north-south signal phasing from protected left-turn phasing to permissive phasing, convert the southbound left-turn lane to a shared left-through lane, and convert the southbound shared through-right-turn lane to a dedicated right-turn lane. This mitigation measure would improve the LOS at the intersection from LOS E to LOS D (44.2 seconds) in the AM peak hour, and decrease the delay from 91.6 seconds (LOS F) to 63.1 seconds (LOS E) in the PM peak hour. The delay increase between the baseline condition and the mitigated plus project condition would be less than 5.0 seconds, resulting in a less than significant impact. The project's maximum fair-share contribution to this intersection would be 16.4 percent.

Intersection #3 – Newcastle Road and Arch Road

The addition of project-related trips would result in the increase in LOS from LOS C to LOS E in the PM peak hour, which results in a significant impact. To offset this impact, it is recommended that a westbound through-lane be added to the approach and return of the intersection. This mitigation measure would improve the operation of this intersection from LOS E to LOS A in the PM peak hour. The impact would be less than significant with the implementation of this mitigation measure. Furthermore, with this mitigation measure, the project's queuing impact would be reduced to a level of insignificance since the intersection's LOS would improve to satisfactory conditions. The project's maximum fair-share contribution to this intersection would be 20.6 percent.

Scenario 4B: 2035 Cumulative Plus Project Conditions

The following intersections are forecast to experience a significant impact with the implementation of the proposed project in the year 2035.

Intersection #1 – Arch Road at SR 99 Northbound/Southbound Access

The addition of project-related trips in the year 2035 would result the intersection delay increasing greater than 5.0 seconds, which would be a significant impact. Due to right-of-way constraints, infrastructure and utilities, additional improvements are not feasible. Therefore, the project would create a significant and unavoidable cumulative impact at this location in the year 2035. Since the intersection would have a significant and unavoidable impact due to unavailable right-of-way for improvements, the queuing impact in the westbound direction during the p.m. peak hour would also be a significant and unavoidable impact. The project's maximum fair-share contribution to this intersection would be 5.6 percent.

Intersection #6 – Arch Road/Austin Road

Under the 2035 Future Conditions with No Project, the intersection of Arch Road/Austin Road would operate at LOS E with approximately 67.0 seconds of average delay during the PM peak hour. The addition of project-related trips would result in approximately a 45.5 second increase in average delay (112.5 seconds total) to this intersection, which results in a significant impact.

The addition of an additional eastbound left-turn lane (to create triple eastbound left-turn lanes) and an additional southbound right-turn lane (triple southbound right-turn

lanes) would offset the project's impact in the year 2035. Due to right-of-way constraints and the design standards of the City, these improvements would not be feasible. Therefore, the proposed project would result in a significant and unavoidable cumulative impact in the year 2035. The project's maximum fair-share contribution to this intersection would be 11.7 percent.

Intersection #8 – Proposed Project Driveway at Austin Road

Under the 2035 Future Conditions with No Project, the intersection of Austin Road at Proposed Project Driveway would operate at LOS F during the AM and PM peak hour. The addition of project-related trips would result increase in delay over five seconds, which results in a significant impact.

A traffic signal is recommended at the proposed project driveway to offset the project's impact. Since this is a significant project impact, the project applicant would be required to fully implement this mitigation measure. Application of this mitigation measure to the year 2035 condition would result in the proposed project driveway operating at an acceptable LOS A and C in the AM and PM peak hours, respectively. The impact would be less than significant with the implementation of this mitigation measure.

Roadway Segment – Arch Road (Newcastle Road to NCWF West Driveway)

Under the 2035 Future Conditions with No Project, the eastbound direction of the segment of Arch Road between Newcastle Road and NCWF West Driveway was forecast to operate at LOS Fin the PM peak hour with the General Plan buildout. With addition of traffic from the proposed project, this roadway segment was forecast to continue to operate with unsatisfactory LOS at LOS F. Since this roadway segment would be constructed to its ultimate width of 4 lanes, the proposed project would contribute to this significant unavoidable cumulative impact.

Roadway Segment – Austin Road (Arch Road to Proposed Project Driveway)

Under the 2035 Future Conditions with No Project, the northbound direction of the segment of Austin Road between Arch Road and NCWF South Driveway was forecast to operate at LOS D in the PM peak hour with the General Plan buildout. With addition of traffic from the proposed project, this roadway segment was forecast to increase from LOS D to LOS F. Since this roadway segment would be constructed to its ultimate width of 4 lanes, the proposed project would contribute to this significant unavoidable cumulative impact.

Freeway Mainline Segment – SR 99, north of Arch Road

Under the 2035 Future Conditions with No Project, the northbound direction of the segment of SR 99, north of Arch Road was forecast to operate at LOS E (0.90 V/C) in the p.m. peak hour with the General Plan buildout of mainline freeway lanes (i.e., 10 lane freeway, or 5 lanes in each direction – 1 HOV plus 4 mixed-flow lanes). With addition of traffic from the proposed project, this mainline segment was forecast to continue to operate with unsatisfactory LOS at LOS E (0.92 V/C). Since this mainline segment would be constructed to its ultimate width of 10 lanes, the proposed project would contribute to this significant unavoidable impact.

10.0 CONCLUSION

The proposed project is a proposed health facility at the Northern California Youth Correction Center (NCYCC). The project site is located south of the intersection of Arch Road and Austin Road in San Joaquin County, California. This site is approximately one and a half miles east of State Route 99 and approximately one mile southeast of the City of Stockton. The proposed project is designed as a 1,734 bed Health Care Center. There would be 3,030 full-time employees working at the facility, including correctional officers, physicians, nurses, miscellaneous medical staff, therapists (Medical), support staff, clerical and program staff. The facility's medical treatment program is to stabilize non-mobile and seriously ill or injured patients and rehabilitate them to a state of health that is appropriate for re-introduction into the general prison population.

The proposed project would generate approximately 492 AM peak hour vehicle trips (452 inbound and 40 outbound) and 433 additional PM peak hour vehicle trips (40 inbound, 393 outbound). Approximately 3,566 daily vehicle trips would be generated by the proposed project. The addition of project-related traffic to the existing traffic would result in increases in average delay at each of the study intersections.

The addition of daily traffic generated by planned and approved projects to the roadway segment of Arch Road between Newcastle Road and the NCWF West Driveway would not result deficient service levels. The study roadway segment would remain at an acceptable LOS under all scenarios with the planned roadway improvements.

Under the City of Stockton impact criteria and LOS guidelines, the proposed project would result in significant traffic impacts at the following locations:

- Kingsley Road (frontage road) and Arch Road (EPAP plus Project)
- Newcastle Road and Arch Road (EPAP plus Proposed Project)
- SR 99 SPUI and Arch Road (2035 plus Project)
- Austin Road and Arch Road (2035 plus Project)
- Austin Road and Proposed Project Driveway (2035 plus Project)
- Arch Road between Newcastle Road and NCWF West Driveway (2035 plus Project)
- Austin Road between Arch Road and NCWF South Driveway (2035 plus Project)

Mitigation measures include recommendations to change signal phasing, restriping of travel lanes, construction of new lanes, installation of a traffic signal at the proposed project driveway on Austin Road.

Under the 2035 General Plan with Project Scenario, all improvements recommended in the Mariposa Lakes traffic study would offset the project's potential impacts at the

study intersections, with the exception of the SR 99 SPUI and Arch Road intersection, and at the Austin Road and Arch Road intersection. These intersections are forecast to operate at an unacceptable LOS F under the 2035 General Plan plus Project, even with the recommended improvements. Additional improvements at these locations are not feasible due to right-of-way constraints, utilities, infrastructure, and inconsistency with City of Stockton standards. Therefore, there would be two significant and unavoidable cumulative impacts.

A Construction Impact Analysis was conducted for the peak construction period on-site. The construction trips would generate approximately twice the amount of vehicle trips than the "plus project" condition during the peak hours, resulting in changes to LOS at the study intersections. Therefore, the addition of construction trips would cause a temporary impact at the intersections along Arch Road during the 7-month peak construction period. A construction traffic control plan (CTMP) is recommended that identifies the arrival and departure of construction employees and vehicles. The plan would establish a maximum threshold of vehicles per peak-hour for construction-related traffic trips, taking into account additional thresholds such as queue spillback and route restrictions.

Based on the parking analysis, the peak period at the project site would occur between 8:00 AM and 2:00 PM, with a peak parking demand of 1,272 parked vehicles. Compared to the proposed parking supply (1,426 parking spaces), adequate parking would be provided on the project site with the implementation of the proposed project.

As shown in the Alternative Project analysis, a 25 percent staff reduction would result in virtually the same project impacts as with the proposed project scenario, with the exception at the intersection of Frontage Road/Kingsley Road and Arch Road.

Under the 2035 with and without project conditions, SR 99 (north and south of Arch Road) is forecast to operate at LOS F as a six-lane highway. With the widening of SR 99 from a six-lane to a ten-lane highway, the freeway segments north and south of Arch Road would operate at an acceptable LOS (LOS D or better), with the exception of northbound SR 99 (north of Arch Road) during the PM Peak hour. Since this mainline segment would be constructed to its ultimate width of 10 lanes, the proposed project would contribute to this significant unavoidable impact.

APPENDIX A

NCYCC Health Care Facility TIA

Intersection Turning Movement

and Roadway Segment Counts

Existing Turning Movement Counts
AM Peak Hour

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH/SR-99 S.BOUND OFF RAMP
NORTH/SOUTH ST.:SR-99 S.BOUND OFF RAMP
EAST/WEST ST.:ARCH RD.

File Name : S01AM
Site Code : 00000001
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	SR-99 SOUTHBOUND OFF RAMP Southbound				Westbound				Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	78	0	95	173	0	0	0	0	0	0	0	0	30	37	18	85	258
07:15 AM	86	0	85	171	0	0	0	0	0	0	0	0	43	38	38	119	290
07:30 AM	155	0	86	241	0	0	0	0	0	0	0	0	33	41	39	113	354
07:45 AM	124	0	59	183	0	0	0	0	0	0	0	0	37	58	37	132	315
Total	443	0	325	768	0	0	0	0	0	0	0	0	143	174	132	449	1217
08:00 AM	86	0	53	139	0	0	0	0	0	0	0	0	50	59	60	169	308
08:15 AM	58	0	53	111	0	0	0	0	0	0	0	0	33	35	42	110	221
08:30 AM	38	0	40	78	0	0	0	0	0	0	0	0	29	36	41	106	184
08:45 AM	40	0	39	79	0	0	0	0	0	0	0	0	24	17	28	69	148
Total	222	0	185	407	0	0	0	0	0	0	0	0	136	147	171	454	861
Grand Total	665	0	510	1175	0	0	0	0	0	0	0	0	279	321	303	903	2078
Apprch %	56.6	0.0	43.4		0.0	0.0	0.0		0.0	0.0	0.0		30.9	35.5	33.6		
Total %	32.0	0.0	24.5	56.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.4	15.4	14.6	43.5	

	SR-99 SOUTHBOUND OFF RAMP Southbound				Westbound				Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	451	0	283	734	0	0	0	0	0	0	0	0	163	196	174	533	1267
Percent	61.4	0.0	38.6		0.0	0.0	0.0		0.0	0.0	0.0		30.6	36.8	32.6		
07:30 Volume	155	0	86	241	0	0	0	0	0	0	0	0	33	41	39	113	354
Peak Factor																	0.895
High Int.	07:30 AM				6:45:00 AM				6:45:00 AM				08:00 AM				
Volume	155	0	86	241	0	0	0	0	0	0	0	0	50	59	60	169	
Peak Factor				0.761												0.788	

11/19/2007 13:09 9253557303 MULTITRANS PAGE 02

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH/SR-99 N.BOUND OFF RAMP
NORTH/SOUTH ST.:SR-99 N.BOUND OFF RAMP
EAST/WEST ST.:ARCH RD.

File Name : S02AM
Site Code : 00000002
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD. Westbound				SR-99 NORTHBOUND OFF RAMP Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	0	0	34	32	36	102	42	0	42	84	0	0	0	0	186
07:15 AM	0	0	0	0	33	26	17	76	43	0	52	95	0	0	0	0	171
07:30 AM	0	0	0	0	49	51	37	137	41	0	55	96	0	0	0	0	233
07:45 AM	0	0	0	0	39	52	39	130	47	0	57	104	0	0	0	0	234
Total	0	0	0	0	155	161	129	445	173	0	206	379	0	0	0	0	824
08:00 AM	0	0	0	0	30	42	24	96	32	0	62	94	0	0	0	0	190
08:15 AM	0	0	0	0	37	33	36	106	45	0	57	102	0	0	0	0	208
08:30 AM	0	0	0	0	33	33	31	97	44	0	36	80	0	0	0	0	177
08:45 AM	0	0	0	0	52	38	28	118	39	0	27	66	0	0	0	0	184
Total	0	0	0	0	152	146	119	417	160	0	182	342	0	0	0	0	759
Grand Total	0	0	0	0	307	307	248	862	333	0	388	721	0	0	0	0	1583
Apprch %	0.0	0.0	0.0		35.6	35.6	28.8		46.2	0.0	53.8		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	19.4	19.4	15.7	54.5	21.0	0.0	24.5	45.5	0.0	0.0	0.0	0.0	

	Southbound				ARCH RD. Westbound				SR-99 NORTHBOUND OFF RAMP Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	0	0	0	0	155	178	136	469	165	0	231	396	0	0	0	0	865
Percent	0.0	0.0	0.0		33.0	38.0	29.0		41.7	0.0	58.3		0.0	0.0	0.0		
07:45 Volume	0	0	0	0	39	52	39	130	47	0	57	104	0	0	0	0	234
Peak Factor																	0.924
High Int.	6:45:00 AM				07:30 AM				07:45 AM				6:45:00 AM				
Volume	0	0	0	0	49	51	37	137	47	0	57	104					
Peak Factor								0.856				0.952					

11/15/2007 13:09 9253557303 MULTITRANS PAGE

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH RD./NCWF WEST DRIVEWAY
NORTH/SOUTH ST.:NCWF WEST DRIVEWAY
EAST/WEST ST.:ARCH RD.

File Name : S03AM
Site Code : 00000003
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD. Westbound				NCWF WEST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	30	0	30	0	0	4	4	0	37	0	37	71
07:15 AM	0	0	0	0	0	27	13	40	0	0	0	0	0	0	0	0	40
07:30 AM	0	0	0	0	0	41	12	53	0	0	0	0	0	9	0	9	62
07:45 AM	0	0	0	0	0	45	5	50	1	0	0	1	0	23	0	23	74
Total	0	0	0	0	0	143	30	173	1	0	4	5	0	69	0	69	247
08:00 AM	0	0	0	0	0	24	6	30	0	0	1	1	0	16	0	16	47
08:15 AM	0	0	0	0	0	24	0	24	0	0	4	4	2	25	0	27	55
08:30 AM	0	0	0	0	0	13	1	14	0	0	0	0	0	20	0	20	34
08:45 AM	0	0	0	0	0	22	3	25	0	0	2	2	0	14	0	14	41
Total	0	0	0	0	0	83	10	93	0	0	7	7	2	75	0	77	177
Grand Total	0	0	0	0	0	226	40	266	1	0	11	12	2	144	0	146	424
Apprch %	0.0	0.0	0.0		0.0	85.0	15.0		8.3	0.0	91.7		1.4	98.6	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	53.3	9.4	62.7	0.2	0.0	2.6	2.8	0.5	34.0	0.0	34.4	

	Southbound				ARCH RD. Westbound				NCWF WEST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:00 AM																
Volume	0	0	0	0	0	143	30	173	1	0	4	5	0	69	0	69	247
Percent	0.0	0.0	0.0		0.0	82.7	17.3		20.0	0.0	80.0		0.0	100.0	0.0		
07:45 Volume	0	0	0	0	0	45	5	50	1	0	0	1	0	23	0	23	74
Peak Factor																	0.834
High Int.	6:45:00 AM				07.30 AM				07:00 AM				07:00 AM				
Volume	0	0	0	0	0	41	12	53	0	0	4	4	0	37	0	37	
Peak Factor								0.816				0.313				0.466	

11/15/2007 13:09 9253557303 MULTITRANS PAGE 06

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH RD./NCWF WEST DRIVEWAY
NORTH/SOUTH ST.:NCWF WEST DRIVEWAY
EAST/WEST ST.:ARCH RD.

File Name : S04AM
Site Code : 00000004
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD. Westbound				NCWF EAST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	28	2	30	2	0	1	3	12	24	0	36	69
07:15 AM	0	0	0	0	0	32	4	36	0	0	3	3	11	18	0	29	68
07:30 AM	0	0	0	0	0	43	1	44	1	0	2	3	3	17	0	20	67
07:45 AM	0	0	0	0	0	31	0	31	0	0	0	0	4	17	0	21	52
Total	0	0	0	0	0	134	7	141	3	0	6	9	30	76	0	106	256
08:00 AM	0	0	0	0	0	19	0	19	1	0	2	3	2	22	0	24	46
08:15 AM	0	0	0	0	0	12	3	15	1	0	1	2	3	18	0	21	38
08:30 AM	0	0	0	0	0	11	0	11	0	0	0	0	2	15	0	17	28
08:45 AM	0	0	0	0	0	14	0	14	0	0	0	0	1	4	0	5	19
Total	0	0	0	0	0	56	3	59	2	0	3	5	8	59	0	67	131
Grand Total	0	0	0	0	0	190	10	200	5	0	9	14	38	135	0	173	387
Apprch %	0.0	0.0	0.0		0.0	95.0	5.0		35.7	0.0	64.3		22.0	78.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	49.1	2.6	51.7	1.3	0.0	2.3	3.6	9.8	34.9	0.0	44.7	

	Southbound				ARCH RD. Westbound				NCWF EAST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:00 AM																
Volume	0	0	0	0	0	134	7	141	3	0	6	9	30	76	0	106	256
Percent	0.0	0.0	0.0		0.0	95.0	5.0		33.3	0.0	66.7		28.3	71.7	0.0		
07:00 Volume	0	0	0	0	0	28	2	30	2	0	1	3	12	24	0	36	69
Peak Factor																	0.928
High Int.	6:45:00 AM				07:30 AM				07:00 AM				07:00 AM				
Volume	0	0	0	0	0	43	1	44	2	0	1	3	12	24	0	36	
Peak Factor								0.801				0.750				0.736	

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH RD. / AUSTIN RD.
NORTH/SOUTH ST.:AUSTIN RD.
EAST/WEST ST.:ARCH RD.

File Name : S05AM
Site Code : 00000005
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
07:00 AM	12	3	4	19	0	3	0	3	0	4	2	6	12	10	4	26	54
07:15 AM	19	2	3	24	0	4	1	5	0	7	7	14	10	3	4	17	60
07:30 AM	18	2	5	25	6	0	1	7	1	1	19	21	10	9	8	27	80
07:45 AM	19	2	1	22	2	7	0	9	0	3	12	15	7	1	12	20	66
Total	68	9	13	90	8	14	2	24	1	15	40	56	39	23	28	90	260
08:00 AM	19	5	2	26	0	1	0	1	0	2	8	10	5	9	6	20	57
08:15 AM	9	3	4	16	0	1	0	1	0	3	1	4	11	6	6	23	44
08:30 AM	7	5	3	15	1	1	0	2	0	1	0	1	8	10	5	23	41
08:45 AM	7	3	0	10	0	2	0	2	0	0	0	0	6	3	3	12	24
Total	42	16	9	67	1	5	0	6	0	6	9	15	30	28	20	78	166
Grand Total	110	25	22	157	9	19	2	30	1	21	49	71	69	51	48	168	426
Apprch %	70.1	15.9	14.0		30.0	63.3	6.7		1.4	29.6	69.0		41.1	30.4	28.6		
Total %	25.8	5.9	5.2	36.9	2.1	4.5	0.5	7.0	0.2	4.9	11.5	16.7	16.2	12.0	11.3	39.4	

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Intersection	07:15 AM																
Volume	75	11	11	97	8	12	2	22	1	13	46	60	32	22	30	84	263
Percent	77.3	11.3	11.3		36.4	54.5	9.1		1.7	21.7	76.7		38.1	26.2	35.7		
07:30 Volume	18	2	5	25	6	0	1	7	1	1	19	21	10	9	8	27	80
Peak Factor																	0.822
High Int.	08:00 AM				07:45 AM				07:30 AM				07:30 AM				
Volume	19	5	2	26	2	7	0	9	1	1	19	21	10	9	8	27	
Peak Factor				0.933				0.611				0.714				0.778	

MULTITRANS Transportation Consultants

(925) 355-7300

Intersection Turning Movement Summary

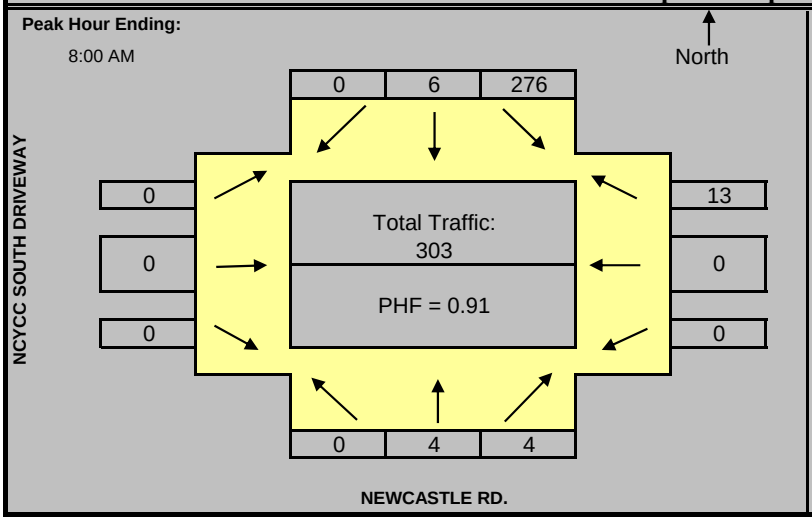
Count Information

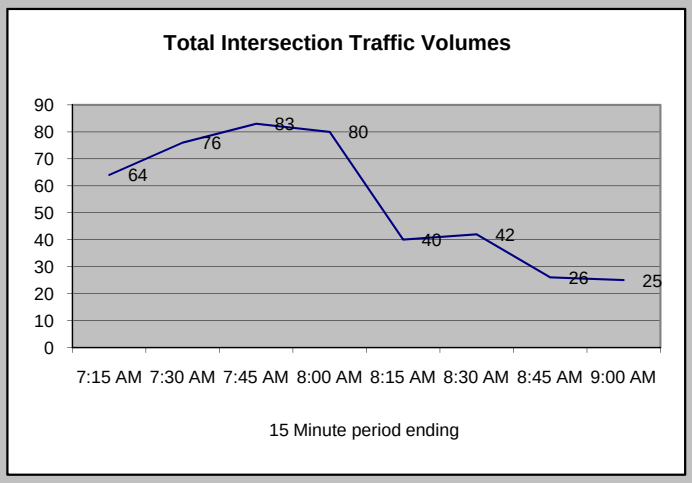
Jurisdiction:	STOCKTON	Count Date:	Wednesday, April 16, 2008
N-S Street:	NEWCASTLE RD.	Count Start Time:	7:00 AM
E-W Street:	NCYCC SOUTH DRIVEWAY	File Name:	TM01 - AM

Graphical Representations

Peak Hour Ending:

8:00 AM





Survey Data

Time		Southbound			Westbound			Northbound			Eastbound			Interval Total	Hourly Max
From	to	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	7:15 AM	0	0	57	6	0	0	0	1	0	0	0	0	64	
7:15 AM	7:30 AM	0	1	73	1	0	0	1	0	0	0	0	0	76	
7:30 AM	7:45 AM	0	2	77	3	0	0	0	1	0	0	0	0	83	
7:45 AM	8:00 AM	0	3	69	3	0	0	3	2	0	0	0	0	80	83
8:00 AM	8:15 AM	0	0	31	6	0	0	0	3	0	0	0	0	40	83
8:15 AM	8:30 AM	0	1	27	14	0	0	0	0	0	0	0	0	42	83
8:30 AM	8:45 AM	0	1	18	4	0	0	1	2	0	0	0	0	26	80
8:45 AM	9:00 AM	0	1	21	3	0	0	0	0	0	0	0	0	25	42
Totals:		**0**	**9**	**373**	**40**	**0**	**0**	**5**	**9**	**0**	**0**	**0**	**0**	**436**	

Hourly Totals

Time		Southbound			Westbound			Northbound			Eastbound			Total	PHF
From	to	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	7:15 AM	0	0	57	6	0	0	0	1	0	0	0	0	64	*
7:15 AM	7:30 AM	0	1	130	7	0	0	1	1	0	0	0	0	140	*
7:30 AM	7:45 AM	0	3	207	10	0	0	1	2	0	0	0	0	223	*
7:45 AM	8:00 AM	0	6	276	13	0	0	4	4	0	0	0	0	303	0.91
8:00 AM	8:15 AM	0	6	250	13	0	0	4	6	0	0	0	0	279	0.84
8:15 AM	8:30 AM	0	6	204	26	0	0	3	6	0	0	0	0	245	0.74
8:30 AM	8:45 AM	0	5	145	27	0	0	4	7	0	0	0	0	188	0.59
8:45 AM	9:00 AM	0	3	97	27	0	0	1	5	0	0	0	0	133	0.79

* Denotes partial hour. Maximum: 303

Existing Turning Movement Counts
PM Peak Hour

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH/SR-99 S.BOUND OFF RAMP
NORTH/SOUTH ST.:SR-99 S.BOUND OFF RAMP
EAST/WEST ST.:ARCH RD.

File Name : S01PM
Site Code : 00000001
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	SR-99 SOUTHBOUND OFF RAMP Southbound				Westbound				Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	54	0	33	87	0	0	0	0	0	0	0	0	0	74	53	127	214
04:15 PM	44	0	45	89	0	0	0	0	0	0	0	0	0	68	41	109	198
04:30 PM	45	0	31	76	0	0	0	0	0	0	0	0	0	62	69	131	207
04:45 PM	44	0	51	95	0	0	0	0	0	0	0	0	0	71	66	137	232
Total	187	0	160	347	0	0	0	0	0	0	0	0	0	275	229	504	851
05:00 PM	34	0	47	81	0	0	0	0	0	0	0	0	0	69	80	149	230
05:15 PM	46	0	46	92	0	0	0	0	0	0	0	0	0	71	70	141	233
05:30 PM	32	0	42	74	0	0	0	0	0	0	0	0	0	43	60	103	177
05:45 PM	36	0	37	73	0	0	0	0	0	0	0	0	0	60	35	95	168
Total	148	0	172	320	0	0	0	0	0	0	0	0	0	243	245	488	808
Grand Total	335	0	332	667	0	0	0	0	0	0	0	0	0	518	474	992	1659
Apprch %	50.2	0.0	49.8		0.0	0.0	0.0		0.0	0.0	0.0		0.0	52.2	47.8		
Total %	20.2	0.0	20.0	40.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.2	28.6	59.8	

	SR-99 SOUTHBOUND OFF RAMP Southbound				Westbound				Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	169	0	175	344	0	0	0	0	0	0	0	0	0	273	285	558	902
Percent	49.1	0.0	50.9		0.0	0.0	0.0		0.0	0.0	0.0		0.0	48.9	51.1		
05:15 Volume	46	0	46	92	0	0	0	0	0	0	0	0	0	71	70	141	233
Peak Factor																	0.968
High Int.	04:45 PM				3:45:00 PM				3:45:00 PM				05:00 PM				
Volume	44	0	51	95	0	0	0	0	0	0	0	0	0	69	80	149	
Peak Factor				0.905												0.936	

11/19/2007 13:09 9253557303 MULTITRANS PAGE 03

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH/SR-99 N.BOUND OFF RAMP
NORTH/SOUTH ST.:SR-99 N.BOUND OFF RAMP
EAST/WEST ST.:ARCH RD.

File Name : S02PM
Site Code : 00000002
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD. Westbound				SR-99 NORTHBOUND OFF RAMP Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	0	0	0	0	86	44	52	182	32	0	27	59	0	0	0	0	241
04:15 PM	0	0	0	0	65	34	52	151	26	0	19	45	0	0	0	0	196
04:30 PM	0	0	0	0	111	36	69	216	29	0	23	52	0	0	0	0	268
04:45 PM	0	0	0	0	99	44	70	213	44	0	22	66	0	0	0	0	279
Total	0	0	0	0	361	158	243	762	131	0	91	222	0	0	0	0	984
05:00 PM	0	0	0	0	123	41	79	243	40	0	26	66	0	0	0	0	309
05:15 PM	0	0	0	0	77	36	70	183	30	0	28	58	0	0	0	0	241
05:30 PM	0	0	0	0	78	23	54	155	34	0	17	51	0	0	0	0	206
05:45 PM	0	0	0	0	50	37	36	123	27	0	25	52	0	0	0	0	175
Total	0	0	0	0	328	137	239	704	131	0	86	227	0	0	0	0	931
Grand Total	0	0	0	0	689	295	482	1466	262	0	187	449	0	0	0	0	1915
Apprch %	0.0	0.0	0.0		47.0	20.1	32.9		58.4	0.0	41.6		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	36.0	15.4	25.2	76.6	13.7	0.0	9.8	23.4	0.0	0.0	0.0	0.0	

	Southbound				ARCH RD. Westbound				SR-99 NORTHBOUND OFF RAMP Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	0	0	0	410	157	288	855	143	0	99	242	0	0	0	0	1097
Percent	0.0	0.0	0.0		48.0	18.4	33.7		59.1	0.0	40.9		0.0	0.0	0.0		
05:00 Volume	0	0	0	0	123	41	79	243	40	0	26	66	0	0	0	0	309
Peak Factor																	0.888
High Int.	3:45:00 PM				05:00 PM				04:45 PM				3:45:00 PM				
Volume	0	0	0	0	123	41	79	243	44	0	22	66					
Peak Factor								0.880				0.917					

11/19/2007 13:09 9253557303 MULTITRANS PAGE 00

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH RD./NCWF WEST DRIVEWAY
NORTH/SOUTH ST.:NCWF WEST DRIVEWAY
EAST/WEST ST.:ARCH RD.

File Name : S03PM
Site Code : 00000003
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD. Westbound				NCWF WEST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	0	0	0	0	0	13	0	13	2	0	9	11	0	37	0	37	61
04:15 PM	0	0	0	0	0	5	0	5	4	0	14	18	0	45	0	45	68
04:30 PM	0	0	0	0	0	5	0	5	1	0	34	35	0	38	0	38	78
04:45 PM	0	0	0	0	0	4	0	4	3	0	37	40	0	26	0	26	70
Total	0	0	0	0	0	27	0	27	10	0	94	104	0	146	0	146	277
05:00 PM	0	0	0	0	0	0	0	0	1	0	34	35	0	31	0	31	66
05:15 PM	0	0	0	0	0	3	0	3	2	0	32	34	0	15	0	15	52
05:30 PM	0	0	0	0	0	4	0	4	0	0	9	9	0	13	0	13	26
05:45 PM	0	0	0	0	0	0	0	0	1	0	9	10	0	6	0	6	16
Total	0	0	0	0	0	7	0	7	4	0	84	88	0	65	0	65	160
Grand Total	0	0	0	0	0	34	0	34	14	0	178	192	0	211	0	211	437
Apprch %	0.0	0.0	0.0		0.0	100.0	0.0		7.3	0.0	92.7		0.0	100.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	7.8	0.0	7.8	3.2	0.0	40.7	43.9	0.0	48.3	0.0	48.3	

	Southbound				ARCH RD. Westbound				NCWF WEST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	0	0	0	0	0	14	0	14	9	0	119	128	0	140	0	140	282
Percent	0.0	0.0	0.0		0.0	100.0	0.0		7.0	0.0	93.0		0.0	100.0	0.0		
04:30 Volume	0	0	0	0	0	5	0	5	1	0	34	35	0	38	0	38	78
Peak Factor																	0.904
High Int.	3:45:00 PM				04 15 PM				04:45 PM				04:15 PM				
Volume	0	0	0	0	0	5	0	5	3	0	37	40	0	45	0	45	
Peak Factor								0.700				0 800				0.778	

11/19/2007 13:09 9253557303 MULTITRANS PAGE 07

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH R./NCWF EAST DRIVEWAY
NORTH/SOUTH ST.:NCWF EAST DRIVEWAY
EAST/WEST ST.:ARCH RD.

File Name : S04PM
Site Code : 00000004
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	Southbound				ARCH RD. Westbound				NCWF EAST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	0	0	0	0	0	22	3	25	1	0	1	2	5	34	0	39	66
04:15 PM	0	0	0	0	0	19	1	20	1	0	1	2	5	37	0	42	64
04:30 PM	0	0	0	0	0	15	0	15	3	0	3	6	1	30	0	31	52
04:45 PM	0	0	0	0	0	21	0	21	1	0	3	4	15	25	0	40	65
Total	0	0	0	0	0	77	4	81	6	0	8	14	26	126	0	152	247
05:00 PM	0	0	0	0	0	17	0	17	3	0	0	3	10	40	0	50	70
05:15 PM	0	0	0	0	0	7	0	7	0	0	1	1	6	23	0	29	37
05:30 PM	0	0	0	0	0	12	0	12	0	0	0	0	4	21	0	25	37
05:45 PM	0	0	0	0	0	7	0	7	0	0	1	1	3	18	0	21	29
Total	0	0	0	0	0	43	0	43	3	0	2	5	23	102	0	125	173
Grand Total	0	0	0	0	0	120	4	124	9	0	10	19	49	228	0	277	420
Apprch %	0.0	0.0	0.0		0.0	96.8	3.2		47.4	0.0	52.6		17.7	82.3	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	28.6	1.0	29.5	2.1	0.0	2.4	4.5	11.7	54.3	0.0	66.0	

	Southbound				ARCH RD. Westbound				NCWF EAST DRIVEWAY Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	0	0	0	0	0	72	1	73	6	0	7	15	31	132	0	163	251
Percent	0.0	0.0	0.0		0.0	98.6	1.4		53.3	0.0	46.7		19.0	81.0	0.0		
05:00 Volume	0	0	0	0	0	17	0	17	3	0	0	3	10	40	0	50	70
Peak Factor																	0.896
High Int.	3:45:00 PM				04:45 PM				04.30 PM				05:00 PM				
Volume	0	0	0	0	0	21	0	21	3	0	3	6	10	40	0	50	
Peak Factor								0.869				0.625				0.815	

MULTITRANS

Transportation Consultants, Inc.

(925) 930-0500

JURISDICTION:STOCKTON
INTERSECTION:ARCH RD. / AUSTIN RD.
NORTH/SOUTH ST.:AUSTIN RD.
EAST/WEST ST.:ARCH RD.

File Name : S05PM
Site Code : 00000005
Start Date : 11/15/2007
Page No : 1

Groups Printed- Unshifted

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		1.0	1.0	1.0		
04:00 PM	13	2	1	16	2	5	1	8	0	5	6	11	7	17	12	36	71
04:15 PM	6	0	0	6	1	8	1	10	0	6	5	11	13	15	17	45	72
04:30 PM	8	2	5	15	4	6	0	10	1	10	1	12	4	12	19	35	72
04:45 PM	8	4	1	13	5	12	0	17	2	5	5	12	7	11	15	33	75
Total	35	8	7	50	12	31	2	45	3	26	17	46	31	55	63	149	290
05:00 PM	5	2	0	7	3	16	0	19	0	0	0	0	10	11	22	43	69
05:15 PM	0	0	1	1	3	6	3	12	0	0	2	2	5	6	20	33	48
05:30 PM	7	3	3	13	4	6	0	10	0	0	0	0	6	10	10	26	49
05:45 PM	0	0	1	1	1	6	0	7	0	0	0	0	3	11	6	20	28
Total	12	5	5	22	11	34	3	48	0	0	2	2	24	40	58	122	194
Grand Total	47	13	12	72	23	65	5	93	3	26	19	48	55	95	121	271	484
Apprch %	65.3	18.1	16.7		24.7	69.9	5.4		6.3	54.2	39.6		20.3	35.1	44.6		
Total %	9.7	2.7	2.5	14.9	4.8	13.4	1.0	19.2	0.6	5.4	3.9	9.9	11.4	19.6	25.0	56.0	

	AUSTIN RD. Southbound				ARCH RD. Westbound				AUSTIN RD. Northbound				ARCH RD. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:00 PM																
Volume	35	8	7	50	12	31	2	45	3	26	17	46	31	55	63	149	290
Percent	70.0	16.0	14.0		26.7	68.9	4.4		6.5	56.5	37.0		20.8	36.9	42.3		
04:45 Volume	8	4	1	13	5	12	0	17	2	5	5	12	7	11	15	33	75
Peak Factor																	0.967
High Int.	04:00 PM				04:45 PM				04:30 PM				04:15 PM				
Volume	13	2	1	16	5	12	0	17	1	10	1	12	13	15	17	45	
Peak Factor				0.781				0.662				0.958				0.828	

MULTITRANS Transportation Consultants

(925) 355-7300

Intersection Turning Movement Summary

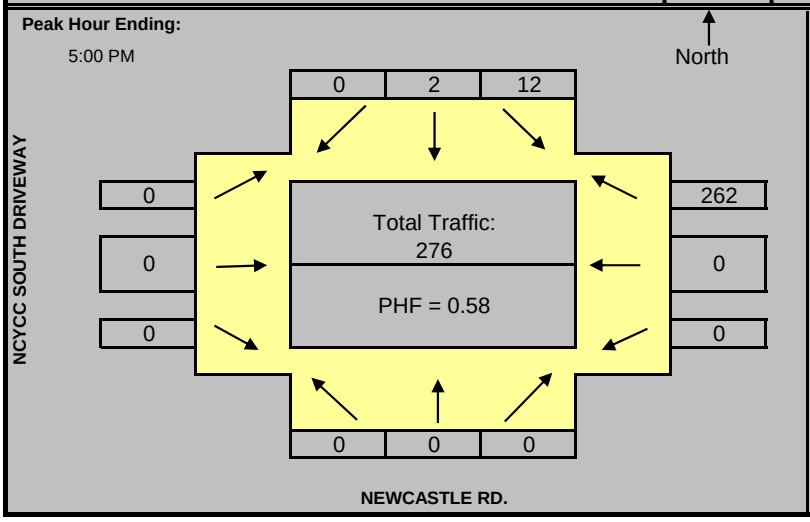
Count Information

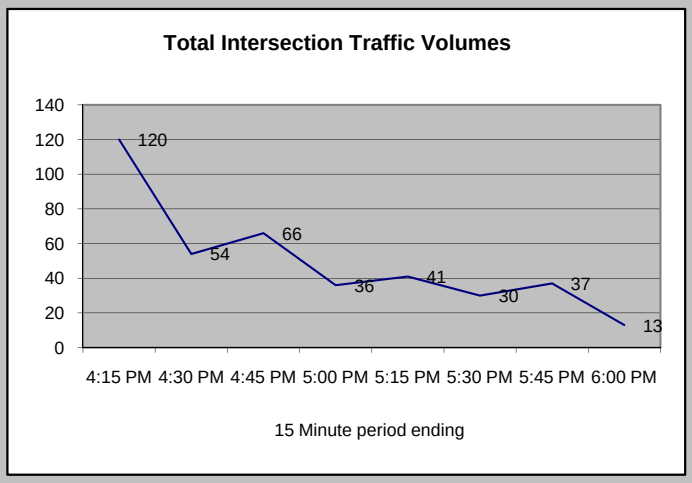
Jurisdiction:	STOCKTON	Count Date:	Wednesday, April 16, 2008
N-S Street:	NEWCASTLE RD.	Count Start Time:	4:00 PM
E-W Street:	NCYCC SOUTH DRIVEWAY	File Name:	TM01 - PM

Graphical Representations

Peak Hour Ending:

5:00 PM





Survey Data

Time		Southbound			Westbound			Northbound			Eastbound			Interval Total	Hourly Max
From	to	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
4:00 PM	4:15 PM	0	1	1	118	0	0	0	0	0	0	0	0	120	
4:15 PM	4:30 PM	0	1	4	49	0	0	0	0	0	0	0	0	54	
4:30 PM	4:45 PM	0	0	5	61	0	0	0	0	0	0	0	0	66	
4:45 PM	5:00 PM	0	0	2	34	0	0	0	0	0	0	0	0	36	120
5:00 PM	5:15 PM	0	1	0	40	0	0	0	0	0	0	0	0	41	66
5:15 PM	5:30 PM	0	1	5	21	0	0	0	3	0	0	0	0	30	66
5:30 PM	5:45 PM	0	0	6	29	0	0	0	2	0	0	0	0	37	41
5:45 PM	6:00 PM	0	0	3	9	0	0	0	1	0	0	0	0	13	41
Totals:		**0**	**4**	**26**	**361**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**397**	

Hourly Totals

Time		Southbound			Westbound			Northbound			Eastbound			Total	PHF
From	to	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
4:00 PM	4:15 PM	0	1	1	118	0	0	0	0	0	0	0	0	120	*
4:15 PM	4:30 PM	0	2	5	167	0	0	0	0	0	0	0	0	174	*
4:30 PM	4:45 PM	0	2	10	228	0	0	0	0	0	0	0	0	240	*
4:45 PM	5:00 PM	0	2	12	262	0	0	0	0	0	0	0	0	276	0.58
5:00 PM	5:15 PM	0	2	11	184	0	0	0	0	0	0	0	0	197	0.75
5:15 PM	5:30 PM	0	2	12	156	0	0	0	3	0	0	0	0	173	0.66
5:30 PM	5:45 PM	0	2	13	124	0	0	0	5	0	0	0	0	144	0.88
5:45 PM	6:00 PM	0	2	14	99	0	0	0	6	0	0	0	0	121	0.74

* Denotes partial hour. Maximum: 276

Existing Roadway Segment Counts

MULTITRANS
TRANSPORTATION CONSULTANTS
925-355-7300

CO - JUR STOCKTON
LOCATION : ARCH ROAD
LIMITS : E/O NEWCASTLE RD.

Site: S01
Date: 11/14/2007
Day: WEDNESDAY

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	14	30	71	211	13	23	35	164	27	53	106	375
12:15	7	31	45	179	1	16	39	166	8	47	84	345
12:30	2	29	67	198	5	23	41	172	7	52	108	370
12:45	7	45	28	175	4	19	49	181	11	64	77	338
1:00	15	43	39	197	6	26	37	144	21	69	76	341
1:15	5	32	64	225	8	28	45	149	13	58	109	377
1:30	18	35	44	208	1	23	30	140	19	58	74	348
1:45	5	24	50	202	11	30	32	144	16	54	82	346
2:00	4	27	70	204	6	27	42	149	10	54	112	353
2:15	8	28	44	194	5	26	36	130	13	54	80	324
2:30	7	24	38	189	8	37	34	125	15	61	72	314
2:45	8	28	52	215	8	32	37	128	16	60	89	344
3:00	6	29	60	244	5	26	23	121	10	55	83	365
3:15	4	38	39	255	16	30	31	140	20	68	70	395
3:30	11	37	65	273	3	30	37	172	14	67	102	445
3:45	9	28	80	248	2	37	30	183	11	65	110	431
4:00	14	21	71	222	9	49	42	214	23	70	113	436
4:15	3	12	57	196	16	45	63	212	19	57	120	408
4:30	2	18	40	193	10	35	48	190	12	54	88	383
4:45	2	22	54	206	14	38	61	193	16	60	115	399
5:00	5	42	45	212	6	37	40	203	10	79	85	415
5:15	9	62	54	226	7	42	41	254	16	104	95	480
5:30	6	94	53	224	12	57	61	271	18	151	104	495
5:45	22	139	60	228	13	72	71	274	35	211	131	502
6:00	25	161	59	195	10	94	91	233	35	256	150	429
6:15	41	169	52	182	22	109	58	185	63	278	110	347
6:30	51	160	57	151	27	114	54	157	78	274	111	308
6:45	44	140	28	123	35	125	30	137	79	265	58	260
7:00	33	136	25	128	25	125	43	129	58	261	68	257
7:15	32	139	41	144	27	145	30	105	59	284	71	250
7:30	31	142	29	128	38	151	34	91	69	293	63	217
7:45	40	148	33	127	35	155	22	83	75	303	55	210
8:00	36	144	41	126	45	165	20	93	81	309	61	218
8:15	35	145	23	113	33	174	16	90	68	319	38	203
8:30	37	148	30	124	42	180	26	99	79	328	56	223
8:45	36	157	31	126	45	173	32	91	81	330	63	217
9:00	37	150	29	120	54	162	17	72	91	312	46	192
9:15	38	159	34	123	39	129	24	80	77	288	58	203
9:30	46	169	32	118	35	129	18	73	81	288	50	191
9:45	29	153	25	107	34	120	13	63	63	273	38	170
10:00	46	153	32	99	21	116	25	57	67	269	57	156
10:15	38	154	29	82	39	116	17	55	77	270	46	137
10:30	40	152	21	76	26	108	8	51	66	260	29	127
10:45	29	162	17	66	30	115	7	59	59	277	24	125
11:00	47	195	15	63	21	112	23	74	68	307	38	137
11:15	36		23		31		13		67		36	
11:30	50		11		33		16		83		27	
11:45	52		14		27		22		89		36	
Totals	1131		2021		962		1653		2093		3674	
Day Totals		3152				2615				5767		
Peak Hour	11:00		3:30		8:30		5:45		8:45		5:45	
Volume	195		273		180		274		330		502	

MULTITRANS
TRANSPORTATION CONSULTANTS
925-355-7300

CO - JUR : STOCKTON
LOCATION : NEWCASTLE RD.
LIMITS : S/O ARCH RD.

Site: R1
Date: 4/15/2008
Day: TUESDAY

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	0	0	44	106	0	0	17	97	0	0	61	203
12:15	0	0	21	72	0	0	24	95	0	0	45	167
12:30	0	0	24	59	0	0	24	89	0	0	48	148
12:45	0	0	17	50	0	0	32	99	0	0	49	149
1:00	0	0	10	43	0	0	15	102	0	0	25	145
1:15	0	0	8	80	0	0	18	94	0	0	26	174
1:30	0	0	15	118	0	0	34	88	0	0	49	206
1:45	0	0	10	126	0	0	35	67	0	0	45	193
2:00	0	1	47	156	0	1	7	42	0	2	54	198
2:15	0	1	46	170	0	1	12	40	0	2	58	210
2:30	0	2	23	157	0	3	13	33	0	5	36	190
2:45	1	4	40	196	1	4	10	30	2	8	50	226
3:00	0	4	61	197	0	6	5	25	0	10	66	222
3:15	1	7	33	180	2	8	5	26	3	15	38	206
3:30	2	8	62	198	1	21	10	26	3	29	72	224
3:45	1	10	41	195	3	24	5	25	4	34	46	220
4:00	3	12	44	195	2	27	6	22	5	39	50	217
4:15	2	10	51	204	15	26	5	18	17	36	56	222
4:30	4	8	59	173	4	22	9	18	8	30	68	191
4:45	3	12	41	133	6	67	2	15	9	79	43	148
5:00	1	15	53	111	1	129	2	19	2	144	55	130
5:15	0	39	20	76	11	145	5	20	11	184	25	96
5:30	8	53	19	70	49	159	6	18	57	212	25	88
5:45	6	55	19	60	68	144	6	16	74	199	25	76
6:00	25	55	18	48	17	159	3	13	42	214	21	61
6:15	14	41	14	38	25	200	3	14	39	241	17	52
6:30	10	31	9	27	34	248	4	14	44	279	13	41
6:45	6	25	7	23	83	291	3	13	89	316	10	36
7:00	11	29	8	20	58	277	4	12	69	306	12	32
7:15	4	26	3	16	73	250	3	10	77	276	6	26
7:30	4	40	5	16	77	205	3	9	81	245	8	25
7:45	10	44	4	14	69	147	2	8	79	191	6	22
8:00	8	36	4	11	31	103	2	8	39	139	6	19
8:15	18	39	3	9	28	89	2	9	46	128	5	18
8:30	8	26	3	9	19	82	2	17	27	108	5	26
8:45	2	25	1	10	25	77	2	41	27	102	3	51
9:00	11	27	2	16	17	61	3	43	28	88	5	59
9:15	5	19	3	69	21	50	10	42	26	69	13	111
9:30	7	23	4	86	14	36	26	33	21	59	30	119
9:45	4	23	7	83	9	39	4	8	13	62	11	91
10:00	3	33	55	85	6	41	2	7	9	74	57	92
10:15	9	46	20	35	7	48	1	7	16	94	21	42
10:30	7	53	1	19	17	59	1	7	24	112	2	26
10:45	14	63	9	18	11	62	3	7	25	125	12	25
11:00	16	76	5	9	13	65	2	4	29	141	7	13
11:15	16		4		18		1		34		5	
11:30	17		0		20		1		37		1	
11:45	27		0		14		0		41		0	
Totals	288		997		869		394		1157		1391	
Day Totals	1285				1263				2548			
Peak Hour	11:00		4:15		6:45		1:00		6:45		2:45	
Volume	76		204		291		102		316		226	

MULTITRANS
TRANSPORTATION CONSULTANTS
925-355-7300

CO - JUR : STOCKTON
LOCATION : AUSTIN RD.
LIMITS : S/O ARCH RD.

Site: R2
Date: 4/15/2008
Day: TUESDAY

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	0	2	10	56	0	2	4	59	0	4	14	115
12:15	0	2	11	63	0	2	27	67	0	4	38	130
12:30	0	2	16	64	2	2	17	57	2	4	33	121
12:45	2	5	19	64	0	0	11	56	2	5	30	120
1:00	0	4	17	60	0	1	12	66	0	5	29	126
1:15	0	6	12	75	0	1	17	76	0	7	29	151
1:30	3	6	16	82	0	1	16	77	3	7	32	159
1:45	1	3	15	99	1	1	21	76	2	4	36	175
2:00	2	4	32	99	0	0	22	76	2	4	54	175
2:15	0	2	19	80	0	0	18	75	0	2	37	155
2:30	0	5	33	76	0	0	15	66	0	5	48	142
2:45	2	5	15	51	0	3	21	70	2	8	36	121
3:00	0	5	13	53	0	5	21	72	0	10	34	125
3:15	3	7	15	52	0	7	9	63	3	14	24	115
3:30	0	6	8	50	3	8	19	67	3	14	27	117
3:45	2	9	17	58	2	6	23	57	4	15	40	115
4:00	2	10	12	58	2	4	12	44	4	14	24	102
4:15	2	9	13	50	1	4	13	42	3	13	26	92
4:30	3	10	16	48	1	9	9	38	4	19	25	86
4:45	3	8	17	48	0	11	10	36	3	19	27	84
5:00	1	12	4	33	2	15	10	30	3	27	14	63
5:15	3	12	11	32	6	16	9	27	9	28	20	59
5:30	1	19	16	29	3	17	7	22	4	36	23	51
5:45	7	36	2	19	4	30	4	17	11	66	6	36
6:00	1	40	3	17	3	45	7	16	4	85	10	33
6:15	10	66	8	16	7	57	4	11	17	123	12	27
6:30	18	76	6	13	16	58	2	11	34	134	8	24
6:45	11	75	0	9	19	52	3	11	30	127	3	20
7:00	27	82	2	13	15	43	2	10	42	125	4	23
7:15	20	73	5	13	8	41	4	8	28	114	9	21
7:30	17	64	2	10	10	49	2	5	27	113	4	15
7:45	18	70	4	8	10	58	2	4	28	128	6	12
8:00	18	74	2	5	13	62	0	3	31	136	2	8
8:15	11	71	2	3	16	74	1	5	27	145	3	8
8:30	23	72	0	3	19	81	1	9	42	153	1	12
8:45	22	70	1	3	14	80	1	10	36	150	2	13
9:00	15	76	0	4	25	96	2	10	40	172	2	14
9:15	12	82	2	5	23	84	5	11	35	166	7	16
9:30	21	89	0	8	18	75	2	8	39	164	2	16
9:45	28	91	2	9	30	79	1	7	58	170	3	16
10:00	21	83	1	8	13	76	3	8	34	159	4	16
10:15	19	86	5	8	14	91	2	7	33	177	7	15
10:30	23	79	1	3	22	101	1	5	45	180	2	8
10:45	20	75	1	2	27	106	2	7	47	181	3	9
11:00	24	70	1	3	28	100	2	7	52	170	3	10
11:15	12		0		24		0		36		0	
11:30	19		0		27		3		46		3	
11:45	15		2		21		2		36		4	
Totals	462		409		449		401		911		810	
Day Totals	871				850				1721			
Peak Hour	9:45		1:45		10:45		1:30		10:45		1:45	
Volume	91		99		106		77		181		175	

APPENDIX B

NCYCC Health Care Facility
TRAFFIX Level of Service Calculations Counts

Existing Traffic Volumes

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.220
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.7
Optimal Cycle:	35	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	231	0	175		295	0	451		174	210	163		141	185	161	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	231	0	175		295	0	451		174	210	163		141	185	161	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	231	0	0		295	0	0		174	210	0		141	185	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	231	0	0		295	0	0		174	210	0		141	185	0	
PCE Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	231	0	0		295	0	0		174	210	0		141	185	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	1.00	1.00		0.92	1.00	1.00		0.92	0.95	1.00		0.92	0.95	1.00	
Lanes:	2.00	0.00	1.00		2.00	0.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3502	0	1900		3502	0	1900		3502	3610	1900		3502	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.00	0.00		0.08	0.00	0.00		0.05	0.06	0.00		0.04	0.05	0.00	
Crit Moves:		****			****				****					****		
Green/Cycle:	0.38	0.00	0.00		0.38	0.00	0.00		0.23	0.27	0.00		0.19	0.23	0.00	
Volume/Cap:	0.17	0.00	0.00		0.22	0.00	0.00		0.22	0.21	0.00		0.21	0.22	0.00	
Uniform Del:	20.4	0.0	0.0		20.8	0.0	0.0		31.6	28.2	0.0		34.4	31.0	0.0	
IncremntDel:	0.1	0.0	0.0		0.1	0.0	0.0		0.1	0.1	0.0		0.2	0.1	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	0.00		1.00	0.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
Delay/Veh:	20.5	0.0	0.0		20.9	0.0	0.0		31.7	28.4	0.0		34.6	31.2	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	20.5	0.0	0.0		20.9	0.0	0.0		31.7	28.4	0.0		34.6	31.2	0.0	
LOS by Move:	C	A	A		C	A	A		C	C	A		C	C	A	
HCM2kAvgQ:	2	0	0		3	0	0		2	3	0		2	2	0	

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.395
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	29.3
Optimal Cycle:	42	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	143	59	50	29	26	100	140	399	141	39	244	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	143	59	50	29	26	100	140	399	141	39	244	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	143	59	50	29	26	100	140	399	141	39	244	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	59	50	29	26	100	140	399	141	39	244	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	143	59	50	29	26	100	140	399	141	39	244	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.88	0.88	0.95	0.91	0.91	0.95	0.95	0.85
Lanes:	1.00	0.54	0.46	1.00	0.21	0.79	1.00	1.48	0.52	1.00	2.00	1.00
Final Sat.:	1805	957	811	1805	345	1328	1805	2563	906	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.06	0.02	0.08	0.08	0.08	0.16	0.16	0.02	0.07	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.20	0.31	0.31	0.08	0.19	0.19	0.24	0.39	0.39	0.05	0.21	0.21
Volume/Cap:	0.39	0.20	0.20	0.20	0.39	0.39	0.32	0.39	0.39	0.39	0.32	0.09
Uniform Del:	34.7	25.3	25.3	42.9	35.4	35.4	31.3	21.7	21.7	45.7	33.6	31.9
IncremntDel:	0.7	0.2	0.2	0.7	0.8	0.8	0.4	0.2	0.2	2.6	0.3	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	35.4	25.5	25.5	43.6	36.2	36.2	31.8	21.9	21.9	48.3	33.8	32.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.4	25.5	25.5	43.6	36.2	36.2	31.8	21.9	21.9	48.3	33.8	32.0
LOS by Move:	D	C	C	D	D	D	C	C	C	D	C	C
HCM2kAvgQ:	4	2	2	1	4	4	4	6	6	2	3	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.155
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	4.2
Optimal Cycle:	27	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	7	0	1	0	0	0	0	103	121	21	144	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	0	1	0	0	0	0	103	121	21	144	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	0	1	0	0	0	0	103	121	21	144	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	0	1	0	0	0	0	103	121	21	144	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	0	1	0	0	0	0	103	121	21	144	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.92	0.92	0.95	1.00	1.00
Lanes:	0.87	0.00	0.13	0.00	1.00	0.00	1.00	0.46	0.54	1.00	1.00	0.00
Final Sat.:	1634	0	233	0	1900	0	1900	803	943	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.01	0.08	0.00
Crit Moves:								****		****		
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.83	0.07	0.90	0.00
Volume/Cap:	xxxx	0.00	xxxx	0.00	0.00	0.00	0.00	0.16	0.16	0.16	0.08	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.1	52.0	0.6	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	52.5	0.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	2.2	52.5	0.7	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	D	A	A
HCM2kAvgQ:	2	0	2	0	0	0	0	2	2	1	1	0

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 West Driveway / Arch
********************************************************************************
Average Delay (sec/veh):      0.8       Worst Case Level Of Service: A[  9.9]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20    0     1     0    0     0     0  104     0     0  145     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20    0     1     0    0     0     0  104     0     0  145     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    20    0     1     0    0     0     0  104     0     0  145     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   20    0     1     0    0     0     0  104     0     0  145     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  249  249    52  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  744  657  1021  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    744  657  1021  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.03 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  754 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  9.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     *    *     *
ApproachDel:       9.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 East Driveway / Arch
********************************************************************************
Average Delay (sec/veh):      1.1       Worst Case Level Of Service: A[  9.4]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8    0    11     0    0     0     0   76    65    22  134     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    8    0    11     0    0     0     0   76    65    22  134     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     8    0    11     0    0     0     0   76    65    22  134     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    8    0    11     0    0     0     0   76    65    22  134     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  287  287    71  xxxx xxxx xxxxx  xxxx xxxx xxxxx   141 xxxx xxxxx
Potent Cap.:  708  626   998  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1455 xxxx xxxxx
Move Cap.:    700  617   998  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1455 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  846 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  9.4 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     *    *     *
ApproachDel:       9.4           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	100	Critical Vol./Cap.(X):	0.131
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	8.0
Optimal Cycle:	0	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	54	13	7	11	11	82	34	22	36	2	12	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	13	7	11	11	82	34	22	36	2	12	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	54	13	7	11	11	82	34	22	36	2	12	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	54	13	7	11	11	82	34	22	36	2	12	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	54	13	7	11	11	82	34	22	36	2	12	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.81	0.19	1.00	0.10	0.11	0.79	1.00	1.00	1.00	0.14	0.86	1.00
Final Sat.:	541	130	844	84	84	628	634	694	802	98	586	801
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.01	0.13	0.13	0.13	0.05	0.03	0.04	0.02	0.02	0.01
Crit Moves:	****			****			****			****		
Delay/Veh:	8.5	8.5	6.9	8.1	8.1	8.1	8.5	7.9	7.2	7.9	7.9	7.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.5	8.5	6.9	8.1	8.1	8.1	8.5	7.9	7.2	7.9	7.9	7.0
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.4			8.1			7.8			7.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.4			8.1			7.8			7.6		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 South Driveway/Newcastle Road

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[8.4]

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	4	4	276	6	0	0	0	0	0	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4	4	276	6	0	0	0	0	0	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	4	4	303	7	0	0	0	0	0	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	4	4	303	7	0	0	0	0	0	0	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	9	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	7
Potent Cap.:	xxxx	xxxx	xxxxx	1624	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1082
Move Cap.:	xxxx	xxxx	xxxxx	1624	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1082
Volume/Cap:	xxxx	xxxx	xxxx	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.4
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.4		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Project Driveway
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   74     0     0   49     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   74     0     0   49     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   74     0     0   49     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   74     0     0   49     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx   123  123    49  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   877  771  1025  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   877  771  1025  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.256
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.4
Optimal Cycle:	36	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	99	0	147	180	0	169	285	275	0	307	162	423				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	99	0	147	180	0	169	285	275	0	307	162	423				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Volume:	99	0	0	180	0	0	285	275	0	307	162	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	99	0	0	180	0	0	285	275	0	307	162	0				
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
FinalVolume:	99	0	0	180	0	0	285	275	0	307	162	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00				
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00				
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.03	0.00	0.00	0.05	0.00	0.00	0.08	0.08	0.00	0.09	0.04	0.00				
Crit Moves:		****		****				****		****						
Green/Cycle:	0.20	0.00	0.00	0.20	0.00	0.00	0.41	0.30	0.00	0.34	0.23	0.00				
Volume/Cap:	0.14	0.00	0.00	0.26	0.00	0.00	0.20	0.26	0.00	0.26	0.20	0.00				
Uniform Del:	32.9	0.0	0.0	33.7	0.0	0.0	18.8	26.7	0.0	23.7	31.3	0.0				
IncremntDel:	0.1	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
Delay/Veh:	33.0	0.0	0.0	33.9	0.0	0.0	18.9	26.9	0.0	23.8	31.4	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	33.0	0.0	0.0	33.9	0.0	0.0	18.9	26.9	0.0	23.8	31.4	0.0				
LOS by Move:	C	A	A	C	A	A	B	C	A	C	C	A				
HCM2kAvgQ:	1	0	0	3	0	0	3	3	0	4	2	0				

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.538
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	30.1
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	158	169	100	8	26	199	144	345	113	35	535	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	169	100	8	26	199	144	345	113	35	535	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	169	100	8	26	199	144	345	113	35	535	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	169	100	8	26	199	144	345	113	35	535	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	169	100	8	26	199	144	345	113	35	535	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.87	0.87	0.95	0.91	0.91	0.95	0.95	0.85
Lanes:	1.00	0.63	0.37	1.00	0.12	0.88	1.00	1.51	0.49	1.00	2.00	1.00
Final Sat.:	1805	1127	667	1805	190	1457	1805	2619	858	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.15	0.00	0.14	0.14	0.08	0.13	0.13	0.02	0.15	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.16	0.40	0.40	0.01	0.25	0.25	0.15	0.37	0.37	0.05	0.28	0.28
Volume/Cap:	0.54	0.37	0.37	0.37	0.54	0.54	0.54	0.36	0.36	0.36	0.54	0.08
Uniform Del:	38.4	20.9	20.9	49.0	32.2	32.2	39.4	22.9	22.9	45.6	30.8	26.9
IncremntDel:	2.0	0.3	0.3	10.4	1.4	1.4	2.2	0.2	0.2	2.2	0.6	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	40.4	21.2	21.2	59.5	33.6	33.6	41.6	23.1	23.1	47.8	31.4	26.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	40.4	21.2	21.2	59.5	33.6	33.6	41.6	23.1	23.1	47.8	31.4	26.9
LOS by Move:	D	C	C	E	C	C	D	C	C	D	C	C
HCM2kAvgQ:	5	6	6	1	7	7	5	5	5	1	8	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.165
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	16.8
Optimal Cycle:	27	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	0 0		0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	84	0	0	0	0	0	0	151	17	5	155	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	0	0	0	0	0	0	151	17	5	155	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	0	0	0	0	0	0	151	17	5	155	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	0	0	0	0	0	0	151	17	5	155	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	0	0	0	0	0	0	151	17	5	155	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.79	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.95	1.00	1.00
Lanes:	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.90	0.10	1.00	1.00	0.00
Final Sat.:	1503	0	0	0	1900	0	1900	1682	189	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.00	0.08	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.54	0.02	0.56	0.00
Volume/Cap:	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.16	0.15	0.00
Uniform Del:	27.8	0.0	0.0	0.0	0.0	0.0	0.0	13.7	13.7	58.2	12.6	0.0
IncremntDel:	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	2.6	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	27.9	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8	60.7	12.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	27.9	0.0	0.0	0.0	0.0	0.0	0.0	13.8	13.8	60.7	12.6	0.0
LOS by Move:	C	A	A	A	A	A	A	B	B	E	B	A
HCM2kAvgQ:	2	0	0	0	0	0	0	3	3	0	3	0

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 West Driveway / Arch
********************************************************************************
Average Delay (sec/veh):      4.9       Worst Case Level Of Service: B[ 10.3]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     143    0     9     0    0     0     0  151     0     0   17     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  143    0     9     0    0     0     0  151     0     0   17     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   143    0     9     0    0     0     0  151     0     0   17     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  143    0     9     0    0     0     0  151     0     0   17     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  168  168    76  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  827  728   991  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    827  728   991  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.17 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  835 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 East Driveway / Arch
********************************************************************************
Average Delay (sec/veh):      0.8       Worst Case Level Of Service: A[  9.3]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10    0    11     0    0     0     0  132    42     2   72     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   10    0    11     0    0     0     0  132    42     2   72     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    10    0    11     0    0     0     0  132    42     2   72     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   10    0    11     0    0     0     0  132    42     2   72     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  229  229    87  xxxx xxxx xxxxx  xxxx xxxx xxxxx   174 xxxx xxxxx
Potent Cap.:  764  674   977  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1415 xxxx xxxxx
Move Cap.:    763  673   977  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1415 xxxx xxxxx
Volume/Cap:  0.01 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  862 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx  9.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    *     *     *    *     *     *    *     *
ApproachDel:       9.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec): 100 Critical Vol./Cap.(X): 0.098
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 8.0
Optimal Cycle: 0 Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	17	26	3	7	8	36	65	55	32	2	31	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	26	3	7	8	36	65	55	32	2	31	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	17	26	3	7	8	36	65	55	32	2	31	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	17	26	3	7	8	36	65	55	32	2	31	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	17	26	3	7	8	36	65	55	32	2	31	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.40	0.60	1.00	0.14	0.16	0.70	1.00	1.00	1.00	0.06	0.94	1.00
Final Sat.:	264	404	802	103	118	530	661	727	848	43	673	838
Capacity Analysis Module:												
Vol/Sat:	0.06	0.06	0.00	0.07	0.07	0.07	0.10	0.08	0.04	0.05	0.05	0.01
Crit Moves:	****				****		****			****		
Delay/Veh:	8.2	8.2	7.0	7.9	7.9	7.9	8.6	7.9	7.0	7.8	7.8	6.9
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.2	8.2	7.0	7.9	7.9	7.9	8.6	7.9	7.0	7.8	7.8	6.9
LOS by Move:	A	A	A	A	A	A	A	A	A	A	A	A
ApproachDel:	8.2			7.9			8.0			7.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.2			7.9			8.0			7.6		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 South Driveway/Newcastle Road
********************************************************************************
Average Delay (sec/veh):     10.5       Worst Case Level Of Service: B[ 10.6]
********************************************************************************
Street Name:          Newcastle Road                 NCYCC South Driveway
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    12    2     0     0    0     0     0    0   262
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    12    2     0     0    0     0     0    0   262
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0    12    2     0     0    0     0     0    0   262
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    12    2     0     0    0     0     0    0   262
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx     0
Potent Cap.: xxxx xxxx xxxxx   900 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   900
Move Cap.:   xxxx xxxx xxxxx   900 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   900
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.29
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   1.2
Control Del:xxxxx xxxx xxxxx   9.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.6
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   9.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.6
ApproachLOS:         *                *                *                B
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Project Driveway
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   46     0     0   42     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   46     0     0   42     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   46     0     0   42     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   46     0     0   42     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx    88   88    42  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   918  806  1034  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   918  806  1034  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Scenario 2 B: EPAP without Mariposa Lakes Development

I

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #1 SR 99 / Arch - SPUI

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.709
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	27.6
Optimal Cycle:	70	Level Of Service:	C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 0	1	2 0	0 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	357	0	482	1302	0	278	178	625	303	176	343	443
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	357	0	482	1302	0	278	178	625	303	176	343	443
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	357	0	482	1302	0	278	178	625	303	176	343	443
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	357	0	0	1302	0	0	178	625	0	176	343	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	357	0	0	1302	0	0	178	625	0	176	343	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	357	0	0	1302	0	0	178	625	0	176	343	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.10	0.00	0.00	0.37	0.00	0.00	0.05	0.17	0.00	0.05	0.10	0.00
Crit Moves:		****		****				****		****		
Green/Cycle:	0.52	0.00	0.00	0.52	0.00	0.00	0.11	0.24	0.00	0.07	0.21	0.00
Volume/Cap:	0.19	0.00	0.00	0.71	0.00	0.00	0.46	0.71	0.00	0.71	0.46	0.00
Uniform Del:	12.6	0.0	0.0	18.0	0.0	0.0	41.7	34.5	0.0	45.4	34.9	0.0
IncremntDel:	0.1	0.0	0.0	1.3	0.0	0.0	0.9	2.7	0.0	9.1	0.5	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Delay/Veh:	12.6	0.0	0.0	19.3	0.0	0.0	42.6	37.2	0.0	54.5	35.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	12.6	0.0	0.0	19.3	0.0	0.0	42.6	37.2	0.0	54.5	35.3	0.0
LOS by Move:	B	A	A	B	A	A	D	D	A	D	D	A
HCM2kAvgQ:	3	0	0	16	0	0	3	11	0	4	5	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #2 Arch / Frontage Road

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.984
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	38.2
Optimal Cycle:	164	Level Of Service:	D

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	150	60	51	30	51	100	143	2123	141	40	718	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	60	51	30	51	100	143	2123	141	40	718	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	60	51	30	51	100	143	2123	141	40	718	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	60	51	30	51	100	143	2123	141	40	718	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	60	51	30	51	100	143	2123	141	40	718	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	60	51	30	51	100	143	2123	141	40	718	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.90	0.90	0.95	0.94	0.94	0.95	0.95	0.85
Lanes:	1.00	0.54	0.46	1.00	0.34	0.66	1.00	1.88	0.12	1.00	2.00	1.00
Final Sat.:	1805	956	813	1805	578	1134	1805	3355	223	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.06	0.02	0.09	0.09	0.08	0.63	0.63	0.02	0.20	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.08	0.14	0.14	0.04	0.09	0.09	0.19	0.64	0.64	0.02	0.48	0.48
Volume/Cap:	0.98	0.46	0.46	0.46	0.98	0.98	0.42	0.98	0.98	0.98	0.42	0.04
Uniform Del:	45.7	39.7	39.7	47.2	45.4	45.4	35.7	17.3	17.3	48.9	17.1	14.0
IncremntDel:	67.8	1.4	1.4	4.9	67.5	67.5	0.8	15.1	15.1	134.5	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	113.5	41.0	41.0	52.1	113	113.0	36.5	32.4	32.4	183.4	17.3	14.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	113.5	41.0	41.0	52.1	113	113.0	36.5	32.4	32.4	183.4	17.3	14.0
LOS by Move:	F	D	D	D	F	F	D	C	C	F	B	B
HCM2kAvgQ:	8	4	4	2	8	8	4	43	43	3	8	1

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.868
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	13.6
Optimal Cycle:	104	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	19	10	7	10	10	10	10	1283	121	24	572	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	10	7	10	10	10	10	1283	121	24	572	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	10	7	10	10	10	10	1283	121	24	572	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	10	7	10	10	10	10	1283	121	24	572	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	10	7	10	10	10	10	1283	121	24	572	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	10	7	10	10	10	10	1283	121	24	572	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.97	0.97	0.97	0.95	0.95	0.95	0.95	0.99	0.99	0.95	1.00	1.00
Lanes:	0.53	0.28	0.19	0.34	0.33	0.33	1.00	0.91	0.09	1.00	0.98	0.02
Final Sat.:	977	514	360	599	599	599	1805	1714	162	1805	1862	33
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.75	0.75	0.01	0.31	0.31
Crit Moves:		****						****		****		
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.86	0.86	0.02	0.86	0.86
Volume/Cap:	0.87	0.87	0.87	0.74	0.74	0.74	0.36	0.87	0.87	0.87	0.36	0.36
Uniform Del:	58.5	58.5	58.5	58.3	58.3	58.3	58.5	4.5	4.5	59.0	1.6	1.6
IncremntDel:	89.8	89.8	89.8	53.5	53.5	53.5	7.6	5.3	5.3	115.1	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	148.3	148	148.3	111.9	112	111.9	66.1	9.8	9.8	174.1	1.8	1.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	148.3	148	148.3	111.9	112	111.9	66.1	9.8	9.8	174.1	1.8	1.8
LOS by Move:	F	F	F	F	F	F	E	A	A	F	A	A
HCM2kAvgQ:	3	3	3	2	2	2	1	31	31	2	4	4

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 West Driveway / Arch

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[12.2]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	1!	0	0		0	0	0	0	0		0	0	1	1	0		0	0	1	0	0	
Volume Module:																								
Base Vol:	56		0		4		0		0		0		0		295		0		0		190		0	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	56		0		4		0		0		0		0		295		0		0		190		0	
Added Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	56		0		4		0		0		0		0		295		0		0		190		0	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	56		0		4		0		0		0		0		295		0		0		190		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
FinalVolume:	56		0		4		0		0		0		0		295		0		0		190		0	
Critical Gap Module:																								
Critical Gp:	6.4		6.5		6.2		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
FollowUpTim:	3.5		4.0		3.3		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
Capacity Module:																								
Cnflict Vol:	485		485		148		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Potent Cap.:	545		485		905		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Move Cap.:	545		485		905		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Volume/Cap:	0.10		0.00		0.00		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx		xxxx	
Level Of Service Module:																								
2Way95thQ:	xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
Control Del:	xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
LOS by Move:	*		*		*		*		*		*		*		*		*		*		*		*	
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx		560		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx		xxxx		xxxx		xxxxx	
SharedQueue:	xxxxx		0.4		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
Shrd ConDel:	xxxxx		12.2		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx		xxxxx		xxxx		xxxxx	
Shared LOS:	*		B		*		*		*		*		*		*		*		*		*		*	
ApproachDel:			12.2				xxxxxx						xxxxxx						xxxxxx					
ApproachLOS:			B						*						*						*			

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      1.0       Worst Case Level Of Service: B[ 10.5]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12    0    14     0    0     0     0  192   143    33  139     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12    0    14     0    0     0     0  192   143    33  139     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   12    0    14     0    0     0     0  192   143    33  139     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    12    0    14     0    0     0     0  192   143    33  139     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   12    0    14     0    0     0     0  192   143    33  139     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  469  469   168  xxxx xxxx xxxxx  xxxx xxxx xxxxx   335 xxxx xxxxx
Potent Cap.:  557  495   882  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1236 xxxx xxxxx
Move Cap.:    545  482   882  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1236 xxxx xxxxx
Volume/Cap:  0.02 0.00  0.02  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.03 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  686 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.5 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.5           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

****

Intersection #6 Arch / Austin

****

Cycle (sec): 100 Critical Vol./Cap.(X): 0.239
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 0 Level Of Service: A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 1			0 0 1! 0 0			1 0 1 0 1			0 1 0 0 1		
Volume Module:												
Base Vol:	61	14	8	14	15	90	149	22	39	2	12	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	14	8	14	15	90	149	22	39	2	12	8
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	61	14	8	14	15	90	149	22	39	2	12	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	61	14	8	14	15	90	149	22	39	2	12	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	14	8	14	15	90	149	22	39	2	12	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	61	14	8	14	15	90	149	22	39	2	12	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.81	0.19	1.00	0.12	0.12	0.76	1.00	1.00	1.00	0.14	0.86	1.00
Final Sat.:	502	115	760	85	91	549	624	682	787	93	555	753
Capacity Analysis Module:												
Vol/Sat:	0.12	0.12	0.01	0.16	0.16	0.16	0.24	0.03	0.05	0.02	0.02	0.01
Crit Moves:	****			****			****				****	
Delay/Veh:	9.1	9.1	7.3	8.7	8.7	8.7	10.0	8.0	7.3	8.1	8.1	7.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.1	9.1	7.3	8.7	8.7	8.7	10.0	8.0	7.3	8.1	8.1	7.3
LOS by Move:	A	A	A	A	A	A	B	A	A	A	A	A
ApproachDel:	8.9			8.7			9.3			7.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	8.9			8.7			9.3			7.8		
LOS by Appr:	A			A			A			A		
AllWayAvgQ:	0.1	0.1	0.0	0.2	0.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #7 South Driveway/Newcastle Road

****

Average Delay (sec/veh): 6.5 Worst Case Level Of Service: A[8.5]

****

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	32	4	276	19	0	0	0	0	0	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	32	4	276	19	0	0	0	0	0	0	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	32	4	276	19	0	0	0	0	0	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	32	4	276	19	0	0	0	0	0	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	32	4	276	19	0	0	0	0	0	0	13
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	36	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	34
Potent Cap.:	xxxx	xxxx	xxxxx	1588	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1045
Move Cap.:	xxxx	xxxx	xxxxx	1588	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1045
Volume/Cap:	xxxx	xxxx	xxxx	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.5
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.5		
ApproachLOS:	*			*			*			A		

****

Note: Queue reported is the number of cars per lane.

****

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Project Driveway
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   83     0     0   56     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   83     0     0   56     0     0    0     0     0    0     0
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0   83     0     0   56     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   83     0     0   56     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   83     0     0   56     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx   139  139    56  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   859  756  1016  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   859  756  1016  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.632
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	31.8
Optimal Cycle:	61	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0	0 1	2 0	0	0 1	2 0	2	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	265	0	353	708	0	269	529	564	113	417	641	1504
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	265	0	353	708	0	269	529	564	113	417	641	1504
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	265	0	0	708	0	0	529	564	0	417	641	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	0	0	708	0	0	529	564	0	417	641	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	265	0	0	708	0	0	529	564	0	417	641	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.00	0.20	0.00	0.00	0.15	0.16	0.00	0.12	0.18	0.00
Crit Moves:		****		****			****				****	
Green/Cycle:	0.32	0.00	0.00	0.32	0.00	0.00	0.24	0.30	0.00	0.22	0.28	0.00
Volume/Cap:	0.24	0.00	0.00	0.63	0.00	0.00	0.63	0.53	0.00	0.53	0.63	0.00
Uniform Del:	25.0	0.0	0.0	29.0	0.0	0.0	34.1	29.4	0.0	34.1	31.4	0.0
IncremntDel:	0.1	0.0	0.0	1.2	0.0	0.0	1.6	0.5	0.0	0.7	1.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Delay/Veh:	25.1	0.0	0.0	30.2	0.0	0.0	35.7	30.0	0.0	34.8	32.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	25.1	0.0	0.0	30.2	0.0	0.0	35.7	30.0	0.0	34.8	32.7	0.0
LOS by Move:	C	A	A	C	A	A	D	C	A	C	C	A
HCM2kAvgQ:	3	0	0	10	0	0	8	8	0	6	10	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.100
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	61.8
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	160	170	100	11	30	200	144	1374	113	40	2225	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	170	100	11	30	200	144	1374	113	40	2225	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	170	100	11	30	200	144	1374	113	40	2225	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	170	100	11	30	200	144	1374	113	40	2225	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	170	100	11	30	200	144	1374	113	40	2225	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.87	0.87	0.95	0.94	0.94	0.95	0.95	0.85
Lanes:	1.00	0.63	0.37	1.00	0.13	0.87	1.00	1.85	0.15	1.00	2.00	1.00
Final Sat.:	1805	1131	665	1805	215	1436	1805	3299	271	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.15	0.01	0.14	0.14	0.08	0.42	0.42	0.02	0.62	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.20	0.20	0.01	0.13	0.13	0.07	0.60	0.60	0.03	0.56	0.56
Volume/Cap:	1.10	0.76	0.76	0.76	1.10	1.10	1.10	0.69	0.69	0.69	1.10	0.04
Uniform Del:	46.0	37.7	37.7	49.5	43.7	43.7	46.4	13.7	13.7	47.9	22.0	9.9
IncremntDel:	104.0	8.9	8.9	115.1	91.6	91.6	108.0	1.0	1.0	30.5	53.3	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	149.9	46.6	46.6	164.6	135	135.2	154.4	14.6	14.6	78.5	75.3	9.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	149.9	46.6	46.6	164.6	135	135.2	154.4	14.6	14.6	78.5	75.3	9.9
LOS by Move:	F	D	D	F	F	F	F	B	B	E	E	A
HCM2kAvgQ:	10	10	10	1	13	13	9	17	17	2	53	1

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.937
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	20.1
Optimal Cycle:	146	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1 0	0	0	0	0	1!	0	0	1	0	0	1	0	1	0
Volume Module:																
Base Vol:	84	10	0	10	10	10	10	10	799	28	12	1453	10			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	84	10	0	10	10	10	10	799	28	12	1453	10				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	84	10	0	10	10	10	10	799	28	12	1453	10				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	84	10	0	10	10	10	10	799	28	12	1453	10				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	84	10	0	10	10	10	10	799	28	12	1453	10				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.73	0.73	1.00	0.90	0.90	0.90	0.95	1.00	1.00	0.95	1.00	1.00				
Lanes:	0.89	0.11	0.00	0.34	0.33	0.33	1.00	0.97	0.03	1.00	0.99	0.01				
Final Sat.:	1246	148	0	573	573	573	1805	1826	64	1805	1885	13				
Capacity Analysis Module:																
Vol/Sat:	0.07	0.07	0.00	0.02	0.02	0.02	0.01	0.44	0.44	0.01	0.77	0.77				
Crit Moves:		****					****				****					
Green/Cycle:	0.07	0.07	0.00	0.07	0.07	0.07	0.01	0.82	0.82	0.01	0.82	0.82				
Volume/Cap:	0.94	0.94	0.00	0.24	0.24	0.24	0.94	0.54	0.54	0.54	0.94	0.94				
Uniform Del:	55.4	55.4	0.0	52.6	52.6	52.6	59.6	3.6	3.6	58.9	8.3	8.3				
IncremntDel:	69.7	69.7	0.0	1.0	1.0	1.0	239.4	0.4	0.4	23.3	11.1	11.1				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Delay/Veh:	125.1	125	0.0	53.6	53.6	53.6	299.0	4.0	4.0	82.2	19.4	19.4				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	125.1	125	0.0	53.6	53.6	53.6	299.0	4.0	4.0	82.2	19.4	19.4				
LOS by Move:	F	F	A	D	D	D	F	A	A	F	B	B				
HCM2kAvgQ:	6	6	0	1	1	1	1	10	10	1	47	47				

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #4 West Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      4.6       Worst Case Level Of Service: B[ 12.7]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     185    0    12     0    0     0     0  316     0     0   34     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  185    0    12     0    0     0     0  316     0     0   34     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   185    0    12     0    0     0     0  316     0     0   34     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  185    0    12     0    0     0     0  316     0     0   34     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  350  350   158  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  651  577   893  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    651  577   893  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.28 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  662 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 12.7 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      12.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.7       Worst Case Level Of Service: B[ 10.3]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      15    0    14     0    0     0     0  282    60     4   84     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   15    0    14     0    0     0     0  282    60     4   84     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    15    0    14     0    0     0     0  282    60     4   84     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   15    0    14     0    0     0     0  282    60     4   84     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  404  404   171  xxxx xxxx xxxxx  xxxx xxxx xxxxx   342 xxxx xxxxx
Potent Cap.:  606  539   878  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1228 xxxx xxxxx
Move Cap.:    605  537   878  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1228 xxxx xxxxx
Volume/Cap:  0.02 0.00  0.02  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  712 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	100	Critical Vol./Cap.(X):	0.359
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	10.3
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T	- R		L - T	- R		L - T	- R		L - T	- R	
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	24	27	4	7	11	219	210	55	41	5	37	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	27	4	7	11	219	210	55	41	5	37	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	24	27	4	7	11	219	210	55	41	5	37	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	24	27	4	7	11	219	210	55	41	5	37	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	24	27	4	7	11	219	210	55	41	5	37	20
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.47	0.53	1.00	0.03	0.05	0.92	1.00	1.00	1.00	0.12	0.88	1.00
Final Sat.:	267	300	665	20	32	640	585	635	724	71	525	681
Capacity Analysis Module:												
Vol/Sat:	0.09	0.09	0.01	0.34	0.34	0.34	0.36	0.09	0.06	0.07	0.07	0.03
Crit Moves:	****				****		****				****	
Delay/Veh:	9.2	9.2	7.8	10.4	10.4	10.4	11.8	8.7	7.7	8.8	8.8	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.2	9.2	7.8	10.4	10.4	10.4	11.8	8.7	7.7	8.8	8.8	7.8
LOS by Move:	A	A	A	B	B	B	B	A	A	A	A	A
ApproachDel:	9.1			10.4			10.7			8.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	9.1			10.4			10.7			8.4		
LOS by Appr:	A			B			B			A		
AllWayAvgQ:	0.1	0.1	0.0	0.5	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #7 South Driveway/Newcastle Road
******************************************************************************
Average Delay (sec/veh):      8.1       Worst Case Level Of Service: A[  9.4]
******************************************************************************
Street Name:          Newcastle Road                 NCYCC South Driveway
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  1  0  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   10     0    12   30     0     0    0     0     0    0   262
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   10     0    12   30     0     0    0     0     0    0   262
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   10     0    12   30     0     0    0     0     0    0   262
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   10     0    12   30     0     0    0     0     0    0   262
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx    10 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx    10
Potent Cap.: xxxx xxxx xxxxx  1623 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1077
Move Cap.:   xxxx xxxx xxxxx  1623 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1077
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.24
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   1.0
Control Del:xxxxx xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   9.4
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              9.4
ApproachLOS:         *                *                *                A
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #8 Project Driveway
******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  0.0]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1  0  0    0  0  1  0  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   55     0     0   57     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   55     0     0   57     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   55     0     0   57     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   55     0     0   57     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx   112  112    57  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   890  782  1015  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   890  782  1015  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Scenario 3A: Existing Plus Project

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.316
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.4
Optimal Cycle:	39	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	231	0	175		295	0	451		174	210	163		141	185	161	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	231	0	175		295	0	451		174	210	163		141	185	161	
Added Vol:	0	0	118		158	0	0		0	127	0		10	11	14	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	231	0	293		453	0	451		174	337	163		151	196	175	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	231	0	0		453	0	0		174	337	0		151	196	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	231	0	0		453	0	0		174	337	0		151	196	0	
PCE Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	231	0	0		453	0	0		174	337	0		151	196	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	1.00	1.00		0.92	1.00	1.00		0.92	0.95	1.00		0.92	0.95	1.00	
Lanes:	2.00	0.00	1.00		2.00	0.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3502	0	1900		3502	0	1900		3502	3610	1900		3502	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.00	0.00		0.13	0.00	0.00		0.05	0.09	0.00		0.04	0.05	0.00	
Crit Moves:		****			****					****			****			
Green/Cycle:	0.41	0.00	0.00		0.41	0.00	0.00		0.21	0.29	0.00		0.14	0.23	0.00	
Volume/Cap:	0.16	0.00	0.00		0.32	0.00	0.00		0.24	0.32	0.00		0.32	0.24	0.00	
Uniform Del:	18.7	0.0	0.0		20.1	0.0	0.0		33.2	27.4	0.0		39.0	31.7	0.0	
IncremntDel:	0.1	0.0	0.0		0.1	0.0	0.0		0.2	0.2	0.0		0.4	0.2	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	0.00		1.00	0.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
Delay/Veh:	18.8	0.0	0.0		20.2	0.0	0.0		33.3	27.6	0.0		39.4	31.9	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	18.8	0.0	0.0		20.2	0.0	0.0		33.3	27.6	0.0		39.4	31.9	0.0	
LOS by Move:	B	A	A		C	A	A		C	C	A		D	C	A	
HCM2kAvgQ:	2	0	0		5	0	0		2	4	0		2	3	0	

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #2 Arch / Frontage Road

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.527
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	25.5
Optimal Cycle:	51	Level Of Service:	C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	143	59	50	29	26	100	140	399	141	39	244	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	143	59	50	29	26	100	140	399	141	39	244	32
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	143	59	50	29	26	100	140	801	141	39	280	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	143	59	50	29	26	100	140	801	141	39	280	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	143	59	50	29	26	100	140	801	141	39	280	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	143	59	50	29	26	100	140	801	141	39	280	32
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.88	0.88	0.95	0.93	0.93	0.95	0.95	0.85
Lanes:	1.00	0.54	0.46	1.00	0.21	0.79	1.00	1.70	0.30	1.00	2.00	1.00
Final Sat.:	1805	957	811	1805	345	1328	1805	3002	528	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.06	0.02	0.08	0.08	0.08	0.27	0.27	0.02	0.08	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.15	0.23	0.23	0.06	0.14	0.14	0.27	0.51	0.51	0.04	0.27	0.27
Volume/Cap:	0.53	0.27	0.27	0.27	0.53	0.53	0.28	0.53	0.53	0.53	0.28	0.07
Uniform Del:	39.2	31.4	31.4	44.8	39.7	39.7	28.6	16.6	16.6	47.0	28.6	26.9
IncremntDel:	1.9	0.3	0.3	1.3	2.2	2.2	0.3	0.3	0.3	6.9	0.2	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	41.1	31.7	31.7	46.1	41.9	41.9	28.9	16.9	16.9	53.9	28.8	27.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	41.1	31.7	31.7	46.1	41.9	41.9	28.9	16.9	16.9	53.9	28.8	27.0
LOS by Move:	D	C	C	D	D	D	C	B	B	D	C	C
HCM2kAvgQ:	5	3	3	1	4	4	3	10	10	2	4	1

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Arch / Newcastle

****

Cycle (sec):	120	Critical Vol./Cap.(X):	0.390
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	3.0
Optimal Cycle:	35	Level Of Service:	A

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	7	0	1	0	0	0	0	103	121	21	144	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	0	1	0	0	0	0	103	121	21	144	0
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	0	1	0	0	0	0	505	121	21	180	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	0	1	0	0	0	0	505	121	21	180	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	0	1	0	0	0	0	505	121	21	180	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	0	1	0	0	0	0	505	121	21	180	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.97	0.97	0.95	1.00	1.00
Lanes:	0.87	0.00	0.13	0.00	1.00	0.00	1.00	0.81	0.19	1.00	1.00	0.00
Final Sat.:	1634	0	233	0	1900	0	1900	1488	357	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.34	0.01	0.09	0.00
Crit Moves:								****		****		
Green/Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.87	0.03	0.90	0.00
Volume/Cap:	xxxx	0.00	xxxx	0.00	0.00	0.00	0.00	0.39	0.39	0.39	0.11	0.00
Uniform Del:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	57.1	0.7	0.0
IncremntDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	4.6	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	61.8	0.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.7	61.8	0.7	0.0
LOS by Move:	A	A	A	A	A	A	A	A	A	E	A	A
HCM2kAvgQ:	2	0	2	0	0	0	0	5	5	1	1	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #4 West Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.4       Worst Case Level Of Service: B[ 13.9]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      20    0     1     0    0     0     0  104     0     0  145     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   20    0     1     0    0     0     0  104     0     0  145     0
Added Vol:      0    0     0     0    0     0     0  402     0     0   36     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   20    0     1     0    0     0     0  506     0     0  181     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    20    0     1     0    0     0     0  506     0     0  181     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   20    0     1     0    0     0     0  506     0     0  181     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  687  687   253  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  416  372   791  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    416  372   791  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.05 0.00  0.00  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  425 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 13.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      13.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.5       Worst Case Level Of Service: B[ 11.8]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8    0    11     0    0     0     0   76    65    22  134     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    8    0    11     0    0     0     0   76    65    22  134     0
Added Vol:      0    0     0     0    0     0     0  402     0     0   36     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    8    0    11     0    0     0     0  478    65    22  170     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     8    0    11     0    0     0     0  478    65    22  170     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    8    0    11     0    0     0     0  478    65    22  170     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  725  725   272  xxxx xxxx xxxxx  xxxx xxxx xxxxx   543 xxxx xxxxx
Potent Cap.:  395  354   772  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1036 xxxx xxxxx
Move Cap.:    389  347   772  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1036 xxxx xxxxx
Volume/Cap:  0.02 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  546 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 11.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      11.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	100	Critical Vol./Cap.(X):	0.579
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	11.7
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	54	13	7	11	11	82	34	22	36	2	12	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	54	13	7	11	11	82	34	22	36	2	12	8
Added Vol:	36	3	0	0	32	0	0	0	402	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	16	7	11	43	82	34	22	438	2	12	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	90	16	7	11	43	82	34	22	438	2	12	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	90	16	7	11	43	82	34	22	438	2	12	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	90	16	7	11	43	82	34	22	438	2	12	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.85	0.15	1.00	0.08	0.32	0.60	1.00	1.00	1.00	0.14	0.86	1.00
Final Sat.:	453	81	637	49	193	367	602	657	757	83	497	663
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.01	0.22	0.22	0.22	0.06	0.03	0.58	0.02	0.02	0.01
Crit Moves:	****			****					****	****		
Delay/Veh:	10.4	10.4	7.9	10.0	10.0	10.0	8.9	8.2	13.2	8.6	8.6	7.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	10.4	10.4	7.9	10.0	10.0	10.0	8.9	8.2	13.2	8.6	8.6	7.8
LOS by Move:	B	B	A	A	A	A	A	A	B	A	A	A
ApproachDel:	10.3			10.0			12.7			8.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.3			10.0			12.7			8.3		
LOS by Appr:	B			A			B			A		
AllWayAvgQ:	0.2	0.2	0.0	0.2	0.2	0.2	0.1	0.0	1.2	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 South Driveway/Newcastle Road

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[8.4]

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	4	4	276	6	0	0	0	0	0	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	4	4	276	6	0	0	0	0	0	0	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	4	4	276	6	0	0	0	0	0	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	0	4	4	303	7	0	0	0	0	0	0	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	4	4	303	7	0	0	0	0	0	0	14
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	9	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	7
Potent Cap.:	xxxx	xxxx	xxxxx	1624	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1082
Move Cap.:	xxxx	xxxx	xxxxx	1624	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1082
Volume/Cap:	xxxx	xxxx	xxxx	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.4
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.4		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #8 Project Driveway
******************************************************************************
Average Delay (sec/veh):      1.0       Worst Case Level Of Service: B[ 11.1]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   74     0     0   49     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   74     0     0   49     0     0    0     0     0    0     0
Added Vol:     18    0     0     0    0   434    38    0     2     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   18   74     0     0   49   434    38    0     2     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    18   74     0     0   49   434    38    0     2     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   18   74     0     0   49   434    38    0     2     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  483 xxxx xxxxx  xxxx xxxx xxxxx   376  376   266  xxxx xxxx xxxxx
Potent Cap.: 1090 xxxx xxxxx  xxxx xxxx xxxxx   629  558   778  xxxx xxxx xxxxx
Move Cap.:   1090 xxxx xxxxx  xxxx xxxx xxxxx   621  549   778  xxxx xxxx xxxxx
Volume/Cap:  0.02 xxxx  xxxx  xxxx xxxx  xxxx  0.06 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.1 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  628 xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.2 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.1 xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    B     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             11.1           xxxxxx
ApproachLOS:         *                *              B                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.299
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.6
Optimal Cycle:	38	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	99	0	147	180	0	169	285	275	0	307	162	423				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	99	0	147	180	0	169	285	275	0	307	162	423				
Added Vol:	0	0	10	14	0	0	0	11	0	102	110	138				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	99	0	157	194	0	169	285	286	0	409	272	561				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Volume:	99	0	0	194	0	0	285	286	0	409	272	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	99	0	0	194	0	0	285	286	0	409	272	0				
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
FinalVolume:	99	0	0	194	0	0	285	286	0	409	272	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00				
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00				
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.03	0.00	0.00	0.06	0.00	0.00	0.08	0.08	0.00	0.12	0.08	0.00				
Crit Moves:		****		****				****		****						
Green/Cycle:	0.19	0.00	0.00	0.19	0.00	0.00	0.34	0.26	0.00	0.39	0.31	0.00				
Volume/Cap:	0.15	0.00	0.00	0.30	0.00	0.00	0.24	0.30	0.00	0.30	0.24	0.00				
Uniform Del:	34.2	0.0	0.0	35.2	0.0	0.0	23.7	29.4	0.0	21.1	25.4	0.0				
IncremntDel:	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.2	0.0	0.1	0.1	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
Delay/Veh:	34.3	0.0	0.0	35.4	0.0	0.0	23.8	29.5	0.0	21.2	25.5	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	34.3	0.0	0.0	35.4	0.0	0.0	23.8	29.5	0.0	21.2	25.5	0.0				
LOS by Move:	C	A	A	D	A	A	C	C	A	C	C	A				
HCM2kAvgQ:	1	0	0	3	0	0	3	4	0	4	3	0				

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #2 Arch / Frontage Road

****

Cycle (sec):	100	Critical Vol./Cap.(X):	0.654
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	29.7
Optimal Cycle:	63	Level Of Service:	C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	158	169	100	8	26	199	144	345	113	35	535	36
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	158	169	100	8	26	199	144	345	113	35	535	36
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	158	169	100	8	26	199	144	381	113	35	885	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	158	169	100	8	26	199	144	381	113	35	885	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	158	169	100	8	26	199	144	381	113	35	885	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	158	169	100	8	26	199	144	381	113	35	885	36
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.87	0.87	0.95	0.92	0.92	0.95	0.95	0.85
Lanes:	1.00	0.63	0.37	1.00	0.12	0.88	1.00	1.54	0.46	1.00	2.00	1.00
Final Sat.:	1805	1127	667	1805	190	1457	1805	2690	798	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.15	0.00	0.14	0.14	0.08	0.14	0.14	0.02	0.25	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.13	0.33	0.33	0.01	0.21	0.21	0.12	0.44	0.44	0.06	0.38	0.38
Volume/Cap:	0.65	0.45	0.45	0.45	0.65	0.65	0.65	0.32	0.32	0.32	0.65	0.06
Uniform Del:	41.1	26.2	26.2	49.2	36.2	36.2	41.9	18.4	18.4	45.1	25.9	20.0
IncremntDel:	6.3	0.5	0.5	17.1	4.5	4.5	6.9	0.1	0.1	1.7	1.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	47.4	26.7	26.7	66.3	40.7	40.7	48.8	18.6	18.6	46.8	27.0	20.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.4	26.7	26.7	66.3	40.7	40.7	48.8	18.6	18.6	46.8	27.0	20.0
LOS by Move:	D	C	C	E	D	D	D	B	B	D	C	C
HCM2kAvgQ:	6	7	7	1	7	7	5	5	5	1	12	1

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Arch / Newcastle

****

Cycle (sec):	120	Critical Vol./Cap.(X):	0.359
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	10.1
Optimal Cycle:	34	Level Of Service:	B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 0	0 0		0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	84	0	0	0	0	0	0	151	17	5	155	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	0	0	0	0	0	0	151	17	5	155	0
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	0	0	0	0	0	0	187	17	5	505	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	0	0	0	0	0	0	187	17	5	505	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	0	0	0	0	0	0	187	17	5	505	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	0	0	0	0	0	0	187	17	5	505	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.77	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.95	1.00	1.00
Lanes:	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.92	0.08	1.00	1.00	0.00
Final Sat.:	1461	0	0	0	1900	0	1900	1721	156	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.11	0.00	0.27	0.00
Crit Moves:	****						****				****	
Green/Cycle:	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.72	0.02	0.74	0.00
Volume/Cap:	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.15	0.15	0.36	0.00
Uniform Del:	44.9	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	58.0	5.5	0.0
IncremntDel:	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	2.1	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	45.9	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	60.1	5.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.9	0.0	0.0	0.0	0.0	0.0	0.0	5.3	5.3	60.1	5.7	0.0
LOS by Move:	D	A	A	A	A	A	A	A	A	E	A	A
HCM2kAvgQ:	3	0	0	0	0	0	0	2	2	0	7	0

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #4 West Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      3.2       Worst Case Level Of Service: B[ 15.0]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     143    0     9     0    0     0     0  151     0     0   17     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  143    0     9     0    0     0     0  151     0     0   17     0
Added Vol:      0    0     0     0    0     0     0   36     0     0  350     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  143    0     9     0    0     0     0  187     0     0  367     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   143    0     9     0    0     0     0  187     0     0  367     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  143    0     9     0    0     0     0  187     0     0  367     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  554  554    94  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  497  443   969  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    497  443   969  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.29 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  512 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  1.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 15.0 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.0           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.4       Worst Case Level Of Service: B[ 10.9]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      10    0    11     0    0     0     0  132    42     2   72     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   10    0    11     0    0     0     0  132    42     2   72     0
Added Vol:      0    0     0     0    0     0     0   36     0     0  350     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   10    0    11     0    0     0     0  168    42     2  422     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    10    0    11     0    0     0     0  168    42     2  422     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   10    0    11     0    0     0     0  168    42     2  422     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  615  615   105  xxxx xxxx xxxxx  xxxx xxxx xxxxx   210 xxxx xxxxx
Potent Cap.:  458  409   955  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1373 xxxx xxxxx
Move Cap.:    457  409   955  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1373 xxxx xxxxx
Volume/Cap:  0.02 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  629 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 10.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      10.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	100	Critical Vol./Cap.(X):	0.670
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	14.8
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	17	26	3	7	8	36	65	55	32	2	31	12
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	17	26	3	7	8	36	65	55	32	2	31	12
Added Vol:	350	28	0	0	3	0	0	0	36	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	367	54	3	7	11	36	65	55	68	2	31	12
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	367	54	3	7	11	36	65	55	68	2	31	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	367	54	3	7	11	36	65	55	68	2	31	12
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	367	54	3	7	11	36	65	55	68	2	31	12
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.87	0.13	1.00	0.13	0.20	0.67	1.00	1.00	1.00	0.06	0.94	1.00
Final Sat.:	548	81	775	83	130	425	515	554	621	33	508	606
Capacity Analysis Module:												
Vol/Sat:	0.67	0.67	0.00	0.08	0.08	0.08	0.13	0.10	0.11	0.06	0.06	0.02
Crit Moves:	****			****			****			****		
Delay/Veh:	18.7	18.7	7.2	8.8	8.8	8.8	10.2	9.4	8.7	9.2	9.2	8.2
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	18.7	18.7	7.2	8.8	8.8	8.8	10.2	9.4	8.7	9.2	9.2	8.2
LOS by Move:	C	C	A	A	A	A	B	A	A	A	A	A
ApproachDel:	18.6			8.8			9.4			8.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	18.6			8.8			9.4			8.9		
LOS by Appr:	C			A			A			A		
AllWayAvgQ:	1.8	1.8	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #7 South Driveway/Newcastle Road
******************************************************************************
Average Delay (sec/veh):     10.5       Worst Case Level Of Service: B[ 10.6]
******************************************************************************
Street Name:          Newcastle Road                 NCYCC South Driveway
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0    12    2     0     0    0     0     0    0   262
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0    12    2     0     0    0     0     0    0   262
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0    12    2     0     0    0     0     0    0   262
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0    12    2     0     0    0     0     0    0   262
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     0    12    2     0     0    0     0     0    0   262
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx     0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx     0
Potent Cap.: xxxx xxxx xxxxx   900 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   900
Move Cap.:   xxxx xxxx xxxxx   900 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   900
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.29
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   1.2
Control Del:xxxxx xxxx xxxxx   9.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.6
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     B
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   9.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             10.6
ApproachLOS:         *                *                *                B
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #8 Project Driveway
******************************************************************************
Average Delay (sec/veh):      9.2       Worst Case Level Of Service: B[ 12.1]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   46     0     0   42     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   46     0     0   42     0     0    0     0     0    0     0
Added Vol:      2    0     0     0    0    38   377    0    16     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    2   46     0     0   42    38   377    0    16     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     2   46     0     0   42    38   377    0    16     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    2   46     0     0   42    38   377    0    16     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   80 xxxx xxxxx  xxxx xxxx xxxxx   111  111    61  xxxx xxxx xxxxx
Potent Cap.: 1531 xxxx xxxxx  xxxx xxxx xxxxx   891  783  1010  xxxx xxxx xxxxx
Move Cap.:   1531 xxxx xxxxx  xxxx xxxx xxxxx   890  782  1010  xxxx xxxx xxxxx
Volume/Cap:  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.42 0.00  0.02  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  894 xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  2.3 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.1 xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    B     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             12.1           xxxxxx
ApproachLOS:         *                *              B                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Scenario 3C: EPAP plus Project Excluding Mariposa Lakes

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.808
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	30.5
Optimal Cycle:	88	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	357	0	482	1302	0	278	178	625	303	176	343	443				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	357	0	482	1302	0	278	178	625	303	176	343	443				
Added Vol:	0	0	118	158	0	0	0	127	0	10	11	14				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	357	0	600	1460	0	278	178	752	303	186	354	457				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Volume:	357	0	0	1460	0	0	178	752	0	186	354	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	357	0	0	1460	0	0	178	752	0	186	354	0				
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
FinalVolume:	357	0	0	1460	0	0	178	752	0	186	354	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00				
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00				
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.10	0.00	0.00	0.42	0.00	0.00	0.05	0.21	0.00	0.05	0.10	0.00				
Crit Moves:		****		****				****		****						
Green/Cycle:	0.52	0.00	0.00	0.52	0.00	0.00	0.11	0.26	0.00	0.07	0.21	0.00				
Volume/Cap:	0.20	0.00	0.00	0.81	0.00	0.00	0.46	0.81	0.00	0.81	0.46	0.00				
Uniform Del:	13.0	0.0	0.0	20.1	0.0	0.0	41.7	34.8	0.0	46.1	34.3	0.0				
IncremntDel:	0.1	0.0	0.0	2.8	0.0	0.0	0.9	5.3	0.0	18.7	0.4	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
Delay/Veh:	13.1	0.0	0.0	22.9	0.0	0.0	42.5	40.1	0.0	64.8	34.8	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	13.1	0.0	0.0	22.9	0.0	0.0	42.5	40.1	0.0	64.8	34.8	0.0				
LOS by Move:	B	A	A	C	A	A	D	D	A	E	C	A				
HCM2kAvgQ:	3	0	0	21	0	0	3	14	0	5	5	0				

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #2 Arch / Frontage Road

****

Cycle (sec): 100 Critical Vol./Cap.(X): 1.117
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 69.4
Optimal Cycle: 180 Level Of Service: E

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	150	60	51	30	51	100	143	2123	141	40	718	33
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	60	51	30	51	100	143	2123	141	40	718	33
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	60	51	30	51	100	143	2525	141	40	754	33
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	60	51	30	51	100	143	2525	141	40	754	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	60	51	30	51	100	143	2525	141	40	754	33
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	60	51	30	51	100	143	2525	141	40	754	33
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.90	0.90	0.95	0.94	0.94	0.95	0.95	0.85
Lanes:	1.00	0.54	0.46	1.00	0.34	0.66	1.00	1.89	0.11	1.00	2.00	1.00
Final Sat.:	1805	956	813	1805	578	1134	1805	3392	189	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.08	0.06	0.06	0.02	0.09	0.09	0.08	0.74	0.74	0.02	0.21	0.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.07	0.12	0.12	0.03	0.08	0.08	0.19	0.67	0.67	0.02	0.50	0.50
Volume/Cap:	1.12	0.52	0.52	0.52	1.12	1.12	0.42	1.12	1.12	1.12	0.42	0.04
Uniform Del:	46.3	41.2	41.2	47.6	46.1	46.1	35.7	16.7	16.7	49.0	15.9	12.9
IncremntDel:	112.4	2.2	2.2	8.0	112	112.1	0.8	58.9	58.9	187.3	0.2	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	158.7	43.4	43.4	55.6	158	158.2	36.6	75.6	75.6	236.3	16.1	12.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	158.7	43.4	43.4	55.6	158	158.2	36.6	75.6	75.6	236.3	16.1	12.9
LOS by Move:	F	D	D	E	F	F	D	E	E	F	B	B
HCM2kAvgQ:	10	4	4	2	10	10	4	64	64	4	8	1

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	1.103
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	55.0
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	19	10	7	10	10	10	10	1283	121	24	572	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	19	10	7	10	10	10	10	1283	121	24	572	10
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	19	10	7	10	10	10	10	1685	121	24	608	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	19	10	7	10	10	10	10	1685	121	24	608	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	19	10	7	10	10	10	10	1685	121	24	608	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	19	10	7	10	10	10	10	1685	121	24	608	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.97	0.97	0.97	0.96	0.96	0.96	0.95	0.99	0.99	0.95	1.00	1.00
Lanes:	0.53	0.28	0.19	0.34	0.33	0.33	1.00	0.93	0.07	1.00	0.98	0.02
Final Sat.:	977	514	360	605	605	605	1805	1755	126	1805	1866	31
Capacity Analysis Module:												
Vol/Sat:	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.96	0.96	0.01	0.33	0.33
Crit Moves:		****						****		****		
Green/Cycle:	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.87	0.87	0.01	0.87	0.87
Volume/Cap:	1.10	1.10	1.10	0.94	0.94	0.94	0.38	1.10	1.10	1.10	0.38	0.38
Uniform Del:	58.9	58.9	58.9	58.9	58.9	58.9	58.6	7.8	7.8	59.3	1.6	1.6
IncremntDel:	190.3	190	190.3	132.8	133	132.8	8.7	56.2	56.2	227.2	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	249.3	249	249.3	191.7	192	191.7	67.2	63.9	63.9	286.5	1.7	1.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	249.3	249	249.3	191.7	192	191.7	67.2	63.9	63.9	286.5	1.7	1.7
LOS by Move:	F	F	F	F	F	F	E	E	E	F	A	A
HCM2kAvgQ:	4	4	4	3	3	3	1	89	89	3	5	5

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 West Driveway / Arch

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: C[19.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	0 0	1 0	0
Volume Module:												
Base Vol:	56	0	4	0	0	0	0	295	0	0	190	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	0	4	0	0	0	0	295	0	0	190	0
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	56	0	4	0	0	0	0	697	0	0	226	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	56	0	4	0	0	0	0	697	0	0	226	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	56	0	4	0	0	0	0	697	0	0	226	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	923	923	349	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	302	272	699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	302	272	699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.19	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	314	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	19.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:		19.2		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		C			*			*			*	

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.7       Worst Case Level Of Service: B[ 13.9]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      12    0    14     0    0     0     0  192   143    33  139     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   12    0    14     0    0     0     0  192   143    33  139     0
Added Vol:      0    0     0     0    0     0     0  402     0     0   36     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   12    0    14     0    0     0     0  594   143    33  175     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    12    0    14     0    0     0     0  594   143    33  175     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   12    0    14     0    0     0     0  594   143    33  175     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  907  907   369  xxxx xxxx xxxxx  xxxx xxxx xxxxx   737 xxxx xxxxx
Potent Cap.:  309  278   681  xxxx xxxx xxxxx  xxxx xxxx xxxxx   878 xxxx xxxxx
Move Cap.:    300  267   681  xxxx xxxx xxxxx  xxxx xxxx xxxxx   878 xxxx xxxxx
Volume/Cap:  0.04 0.00  0.02  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.04 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.1 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   9.3 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  429 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 13.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      13.9           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	100	Critical Vol./Cap.(X):	0.594
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	12.1
Optimal Cycle:	0	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1! 0	0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	61	14	8	14	15	90	149	22	39	2	12	8
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61	14	8	14	15	90	149	22	39	2	12	8
Added Vol:	36	3	0	0	32	0	0	0	402	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	97	17	8	14	47	90	149	22	441	2	12	8
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	97	17	8	14	47	90	149	22	441	2	12	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	97	17	8	14	47	90	149	22	441	2	12	8
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	97	17	8	14	47	90	149	22	441	2	12	8
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.85	0.15	1.00	0.09	0.31	0.60	1.00	1.00	1.00	0.14	0.86	1.00
Final Sat.:	437	77	608	55	185	354	594	646	742	79	473	626
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.01	0.25	0.25	0.25	0.25	0.03	0.59	0.03	0.03	0.01
Crit Moves:	****				****				****		****	
Delay/Veh:	11.0	11.0	8.2	10.5	10.5	10.5	10.6	8.3	13.9	8.9	8.9	8.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.0	11.0	8.2	10.5	10.5	10.5	10.6	8.3	13.9	8.9	8.9	8.0
LOS by Move:	B	B	A	B	B	B	B	A	B	A	A	A
ApproachDel:	10.8			10.5			12.9			8.6		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.8			10.5			12.9			8.6		
LOS by Appr:	B			B			B			A		
AllWayAvgQ:	0.2	0.2	0.0	0.3	0.3	0.3	0.3	0.0	1.3	0.0	0.0	0.0

Note: Queue reported is the number of cars per lane.

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #7 South Driveway/Newcastle Road
*******************************************************************************
Average Delay (sec/veh):      6.5       Worst Case Level Of Service: A[  8.5]
*******************************************************************************
Street Name:          Newcastle Road                 NCYCC South Driveway
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   32     4   276   19     0     0    0     0     0    0    13
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   32     4   276   19     0     0    0     0     0    0    13
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0   32     4   276   19     0     0    0     0     0    0    13
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0   32     4   276   19     0     0    0     0     0    0    13
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0   32     4   276   19     0     0    0     0     0    0    13
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx    36 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx    34
Potent Cap.: xxxx xxxx xxxxx  1588 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1045
Move Cap.:   xxxx xxxx xxxxx  1588 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx  1045
Volume/Cap:  xxxx xxxx  xxxx  0.17 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.6 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.0
Control Del:xxxxx xxxx xxxxx   7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   8.5
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.5
ApproachLOS:         *                *                *                A
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #8 Project Driveway
*******************************************************************************
Average Delay (sec/veh):      1.0       Worst Case Level Of Service: B[ 11.3]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   83     0     0   56     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   83     0     0   56     0     0    0     0     0    0     0
Added Vol:     18    0     0     0    0   434    38    0     2     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   18   83     0     0   56   434    38    0     2     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    18   83     0     0   56   434    38    0     2     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   18   83     0     0   56   434    38    0     2     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  490 xxxx xxxxx  xxxx xxxx xxxxx   392  392   273  xxxx xxxx xxxxx
Potent Cap.: 1084 xxxx xxxxx  xxxx xxxx xxxxx   616  547   771  xxxx xxxx xxxxx
Move Cap.:   1084 xxxx xxxxx  xxxx xxxx xxxxx   608  538   771  xxxx xxxx xxxxx
Volume/Cap:  0.02 xxxx  xxxx  xxxx xxxx  xxxx  0.06 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.1 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  615 xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.2 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  8.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 11.3 xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    B     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             11.3           xxxxxx
ApproachLOS:         *                *              B                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	0.673
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	32.6
Optimal Cycle:	65	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 0	1	2 0	0 0	1	2 0	2 0	1	2 0	2 0	1
Volume Module:												
Base Vol:	265	0	353	708	0	269	529	564	113	417	641	1504
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	265	0	353	708	0	269	529	564	113	417	641	1504
Added Vol:	0	0	10	14	0	0	0	11	0	102	110	138
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	265	0	363	722	0	269	529	575	113	519	751	1642
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Volume:	265	0	0	722	0	0	529	575	0	519	751	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	265	0	0	722	0	0	529	575	0	519	751	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
FinalVolume:	265	0	0	722	0	0	529	575	0	519	751	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.08	0.00	0.00	0.21	0.00	0.00	0.15	0.16	0.00	0.15	0.21	0.00
Crit Moves:		****		****			****				****	
Green/Cycle:	0.31	0.00	0.00	0.31	0.00	0.00	0.22	0.28	0.00	0.26	0.31	0.00
Volume/Cap:	0.25	0.00	0.00	0.67	0.00	0.00	0.67	0.58	0.00	0.58	0.67	0.00
Uniform Del:	26.0	0.0	0.0	30.3	0.0	0.0	35.4	31.1	0.0	32.4	30.1	0.0
IncremntDel:	0.1	0.0	0.0	1.7	0.0	0.0	2.3	0.8	0.0	0.9	1.6	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Delay/Veh:	26.1	0.0	0.0	32.0	0.0	0.0	37.7	32.0	0.0	33.3	31.8	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	26.1	0.0	0.0	32.0	0.0	0.0	37.7	32.0	0.0	33.3	31.8	0.0
LOS by Move:	C	A	A	C	A	A	D	C	A	C	C	A
HCM2kAvgQ:	3	0	0	11	0	0	9	9	0	8	11	0

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	1.215
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	91.6
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	160	170	100	11	30	200	144	1374	113	40	2225	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	170	100	11	30	200	144	1374	113	40	2225	40
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	160	170	100	11	30	200	144	1410	113	40	2575	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	170	100	11	30	200	144	1410	113	40	2575	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	170	100	11	30	200	144	1410	113	40	2575	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	170	100	11	30	200	144	1410	113	40	2575	40
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.87	0.87	0.95	0.94	0.94	0.95	0.95	0.85
Lanes:	1.00	0.63	0.37	1.00	0.13	0.87	1.00	1.85	0.15	1.00	2.00	1.00
Final Sat.:	1805	1131	665	1805	215	1436	1805	3305	265	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.15	0.15	0.01	0.14	0.14	0.08	0.43	0.43	0.02	0.71	0.02
Crit Moves:	****				****		****				****	
Green/Cycle:	0.07	0.18	0.18	0.01	0.11	0.11	0.07	0.62	0.62	0.03	0.59	0.59
Volume/Cap:	1.22	0.83	0.83	0.83	1.22	1.22	1.22	0.69	0.69	0.69	1.22	0.04
Uniform Del:	46.4	39.5	39.5	49.6	44.3	44.3	46.7	12.6	12.6	47.9	20.7	8.8
IncremntDel:	147.6	16.8	16.8	160.4	135	135.4	151.7	0.9	0.9	29.3	102	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	194.0	56.4	56.4	210.0	180	179.7	198.5	13.5	13.5	77.2	122	8.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	194.0	56.4	56.4	210.0	180	179.7	198.5	13.5	13.5	77.2	122	8.8
LOS by Move:	F	E	E	F	F	F	F	B	B	E	F	A
HCM2kAvgQ:	11	11	11	1	15	15	10	17	17	2	73	1

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 Arch / Newcastle

****

Cycle (sec): 120 Critical Vol./Cap.(X): 1.142
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 62.6
Optimal Cycle: 180 Level Of Service: E

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	0	0 0	1! 0	0	1 0	0 1	0	1 0	0 1	0
Volume Module:												
Base Vol:	84	10	0	10	10	10	10	799	28	12	1453	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	84	10	0	10	10	10	10	799	28	12	1453	10
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	10	0	10	10	10	10	835	28	12	1803	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	84	10	0	10	10	10	10	835	28	12	1803	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	10	0	10	10	10	10	835	28	12	1803	10
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	84	10	0	10	10	10	10	835	28	12	1803	10
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.74	0.74	1.00	0.92	0.92	0.92	0.95	1.00	1.00	0.95	1.00	1.00
Lanes:	0.89	0.11	0.00	0.34	0.33	0.33	1.00	0.97	0.03	1.00	0.99	0.01
Final Sat.:	1258	150	0	584	584	584	1805	1829	61	1805	1888	10
Capacity Analysis Module:												
Vol/Sat:	0.07	0.07	0.00	0.02	0.02	0.02	0.01	0.46	0.46	0.01	0.96	0.96
Crit Moves:		****					****				****	
Green/Cycle:	0.06	0.06	0.00	0.06	0.06	0.06	0.00	0.83	0.83	0.01	0.84	0.84
Volume/Cap:	1.14	1.14	0.00	0.29	0.29	0.29	1.14	0.55	0.55	0.55	1.14	1.14
Uniform Del:	56.5	56.5	0.0	54.1	54.1	54.1	59.7	3.2	3.2	59.0	9.8	9.8
IncremntDel:	142.5	143	0.0	1.6	1.6	1.6	358.3	0.4	0.4	26.8	71.8	71.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	199.0	199	0.0	55.7	55.7	55.7	418.1	3.6	3.6	85.8	81.6	81.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	199.0	199	0.0	55.7	55.7	55.7	418.1	3.6	3.6	85.8	81.6	81.6
LOS by Move:	F	F	A	E	E	E	F	A	A	F	F	F
HCM2kAvgQ:	7	7	0	1	1	1	2	10	10	1	95	95

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #4 West Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      4.7       Worst Case Level Of Service: C[ 22.2]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    0  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     185    0    12     0    0     0     0  316     0     0   34     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  185    0    12     0    0     0     0  316     0     0   34     0
Added Vol:      0    0     0     0    0     0     0   36     0     0  350     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  185    0    12     0    0     0     0  352     0     0  384     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   185    0    12     0    0     0     0  352     0     0  384     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  185    0    12     0    0     0     0  352     0     0  384     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  736  736   176  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.:  389  349   872  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:    389  349   872  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  0.48 0.00  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  403 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 22.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    *     *     *    *     *     *    *     *
ApproachDel:      22.2           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
-------------------------------------------------------------------------------
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 East Driveway / Arch
*******************************************************************************
Average Delay (sec/veh):      0.5       Worst Case Level Of Service: B[ 12.6]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  1  1  0    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      15    0    14     0    0     0     0  282    60     4   84     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   15    0    14     0    0     0     0  282    60     4   84     0
Added Vol:      0    0     0     0    0     0     0   36     0     0  350     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   15    0    14     0    0     0     0  318    60     4  434     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    15    0    14     0    0     0     0  318    60     4  434     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   15    0    14     0    0     0     0  318    60     4  434     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4  6.5   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5  4.0   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  790  790   189  xxxx xxxx xxxxx  xxxx xxxx xxxxx   378 xxxx xxxxx
Potent Cap.:  362  325   858  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1192 xxxx xxxxx
Move Cap.:    361  324   858  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1192 xxxx xxxxx
Volume/Cap:  0.04 0.00  0.02  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.0 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  501 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.2 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 12.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     *    *     *
ApproachDel:      12.6           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
*******************************************************************************
Note: Queue reported is the number of cars per lane.
*******************************************************************************
```

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	100	Critical Vol./Cap.(X):	0.791
Loss Time (sec):	0 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.2
Optimal Cycle:	0	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	1	0 0	1!	0 0	1 0	1 0	1	0 1	0 0	1
Volume Module:												
Base Vol:	24	27	4	7	11	219	210	55	41	5	37	20
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	24	27	4	7	11	219	210	55	41	5	37	20
Added Vol:	350	28	0	0	3	0	0	0	36	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	374	55	4	7	14	219	210	55	77	5	37	20
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	374	55	4	7	14	219	210	55	77	5	37	20
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	55	4	7	14	219	210	55	77	5	37	20
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	374	55	4	7	14	219	210	55	77	5	37	20
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.87	0.13	1.00	0.03	0.06	0.91	1.00	1.00	1.00	0.12	0.88	1.00
Final Sat.:	473	70	644	17	34	525	465	495	548	53	393	493
Capacity Analysis Module:												
Vol/Sat:	0.79	0.79	0.01	0.42	0.42	0.42	0.45	0.11	0.14	0.09	0.09	0.04
Crit Moves:	****			****			****				****	
Delay/Veh:	28.6	28.6	8.1	12.9	12.9	12.9	15.5	10.4	9.8	10.6	10.6	9.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	28.6	28.6	8.1	12.9	12.9	12.9	15.5	10.4	9.8	10.6	10.6	9.4
LOS by Move:	D	D	A	B	B	B	C	B	A	B	B	A
ApproachDel:	28.4			12.9			13.4			10.2		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	28.4			12.9			13.4			10.2		
LOS by Appr:	D			B			B			B		
AllWayAvgQ:	2.9	2.9	0.0	0.6	0.6	0.6	0.7	0.1	0.1	0.1	0.1	0.0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 South Driveway/Newcastle Road

Average Delay (sec/veh): 8.1 Worst Case Level Of Service: A[9.4]

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1 0 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	10	0	12	30	0	0	0	0	0	0	262
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	10	0	12	30	0	0	0	0	0	0	262
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	10	0	12	30	0	0	0	0	0	0	262
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	10	0	12	30	0	0	0	0	0	0	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	10	0	12	30	0	0	0	0	0	0	262
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	10	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	10
Potent Cap.:	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1077
Move Cap.:	xxxx	xxxx	xxxxx	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1077
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.24
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.0
Control Del:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.4
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.4		
ApproachLOS:	*			*			*			A		

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #8 Project Driveway
******************************************************************************
Average Delay (sec/veh):      9.1       Worst Case Level Of Service: B[ 12.5]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  0  0  0    0  0  0  1  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   55     0     0   57     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   55     0     0   57     0     0    0     0     0    0     0
Added Vol:      2    0     0     0    0    38   377    0    16     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    2   55     0     0   57    38   377    0    16     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     2   55     0     0   57    38   377    0    16     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    2   55     0     0   57    38   377    0    16     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   95 xxxx xxxxx  xxxx xxxx xxxxx   135  135    76  xxxx xxxx xxxxx
Potent Cap.: 1512 xxxx xxxxx  xxxx xxxx xxxxx   863  760   991  xxxx xxxx xxxxx
Move Cap.:   1512 xxxx xxxxx  xxxx xxxx xxxxx   862  759   991  xxxx xxxx xxxxx
Volume/Cap:  0.00 xxxx  xxxx  xxxx xxxx  xxxx  0.44 0.00  0.02  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  867 xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  2.4 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  7.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.5 xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    B     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             12.5           xxxxxx
ApproachLOS:         *                *              B                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Scenario 4A: 2035 General Plan without Project

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	1.249
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	116.6
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	322	0	382	1447	0	100	330	1961	0	325	1500	309				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	322	0	382	1447	0	100	330	1961	0	325	1500	309				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Volume:	322	0	0	1447	0	0	330	1961	0	325	1500	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	322	0	0	1447	0	0	330	1961	0	325	1500	0				
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
FinalVolume:	322	0	0	1447	0	0	330	1961	0	325	1500	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00				
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00				
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.09	0.00	0.00	0.41	0.00	0.00	0.09	0.54	0.00	0.09	0.42	0.00				
Crit Moves:		****		****				****		****						
Green/Cycle:	0.33	0.00	0.00	0.33	0.00	0.00	0.09	0.43	0.00	0.07	0.42	0.00				
Volume/Cap:	0.28	0.00	0.00	1.25	0.00	0.00	1.00	1.25	0.00	1.25	1.00	0.00				
Uniform Del:	24.7	0.0	0.0	33.5	0.0	0.0	45.3	28.3	0.0	46.3	29.2	0.0				
IncremntDel:	0.1	0.0	0.0	119.4	0.0	0.0	49.9	118	0.0	139.9	23.5	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
Delay/Veh:	24.8	0.0	0.0	152.9	0.0	0.0	95.1	146	0.0	186.2	52.8	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	24.8	0.0	0.0	152.9	0.0	0.0	95.1	146	0.0	186.2	52.8	0.0				
LOS by Move:	C	A	A	F	A	A	F	F	A	F	D	A				
HCM2kAvgQ:	4	0	0	43	0	0	9	59	0	12	32	0				

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.734
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.8
Optimal Cycle:	74	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0	1 0		1 0 0	1 2		2 0 3	0 1		1 0 3	1 0	
Volume Module:												
Base Vol:	67	59	20	20	1	160	994	2485	310	3	1906	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	59	20	20	1	160	994	2485	310	3	1906	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	59	20	20	1	160	994	2485	310	3	1906	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	59	20	20	1	160	994	2485	310	3	1906	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	59	20	20	1	160	994	2485	310	3	1906	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.96	0.96	0.95	0.85	0.75	0.92	0.91	0.85	0.95	0.91	0.91
Lanes:	2.00	0.75	0.25	1.00	0.02	2.98	2.00	3.00	1.00	1.00	3.99	0.01
Final Sat.:	3502	1365	463	1805	27	4245	3502	5187	1615	1805	6909	7
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.01	0.04	0.04	0.28	0.48	0.19	0.00	0.28	0.28
Crit Moves:	****				****		****				****	
Green/Cycle:	0.03	0.06	0.06	0.02	0.05	0.05	0.39	0.76	0.76	0.00	0.38	0.38
Volume/Cap:	0.73	0.70	0.70	0.70	0.73	0.73	0.73	0.63	0.25	0.63	0.73	0.73
Uniform Del:	48.4	46.0	46.0	49.0	46.8	46.8	26.3	5.5	3.6	49.8	26.9	26.9
IncremntDel:	26.2	18.0	18.0	56.6	12.1	12.1	2.1	0.3	0.1	146.9	1.1	1.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	74.6	64.0	64.0	105.5	58.8	58.8	28.4	5.9	3.7	196.7	28.0	28.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	74.6	64.0	64.0	105.5	58.8	58.8	28.4	5.9	3.7	196.7	28.0	28.0
LOS by Move:	E	E	E	F	E	E	C	A	A	F	C	C
HCM2kAvgQ:	2	4	4	2	3	3	15	13	3	1	15	15

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.634
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	20.9
Optimal Cycle:	53	Level Of Service:	C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Permitted						Permitted						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	2	1	0		1	0	2	1	0	
Volume Module:																								
Base Vol:	118		38		48		45		62		169		50		1599		219		111		1427		164	
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Initial Bse:	118		38		48		45		62		169		50		1599		219		111		1427		164	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
PHF Volume:	118		38		48		45		62		169		50		1599		219		111		1427		164	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Reduced Vol:	118		38		48		45		62		169		50		1599		219		111		1427		164	
PCE Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
MLF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
FinalVolume:	118		38		48		45		62		169		50		1599		219		111		1427		164	
Saturation Flow Module:																								
Sat/Lane:	1900	1900		1900			1900	1900		1900			1900	1900		1900			1900	1900		1900		
Adjustment:	0.41	0.92		0.92			0.69	0.89		0.89			0.95	0.89		0.89			0.95	0.90		0.90		
Lanes:	1.00	0.44		0.56			1.00	0.27		0.73			1.00	2.64		0.36			1.00	2.69		0.31		
Final Sat.:	775	769		971			1303	454		1237			1805	4480		614			1805	4583		527		
Capacity Analysis Module:																								
Vol/Sat:	0.15	0.05		0.05			0.03	0.14		0.14			0.03	0.36		0.36			0.06	0.31		0.31		
Crit Moves:	****													****					****					
Green/Cycle:	0.24	0.24		0.24			0.24	0.24		0.24			0.05	0.56		0.56			0.10	0.61		0.61		
Volume/Cap:	0.63	0.21		0.21			0.14	0.57		0.57			0.51	0.63		0.63			0.63	0.51		0.51		
Uniform Del:	40.9	36.4		36.4			35.9	40.1		40.1			55.2	17.8		17.8			52.1	13.5		13.5		
IncremntDel:	7.0	0.2		0.2			0.2	1.9		1.9			4.6	0.5		0.5			7.4	0.1		0.1		
InitQueuDel:	0.0	0.0		0.0			0.0	0.0		0.0			0.0	0.0		0.0			0.0	0.0		0.0		
Delay Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
Delay/Veh:	47.9	36.7		36.7			36.1	42.0		42.0			59.9	18.3		18.3			59.5	13.7		13.7		
User DelAdj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00		
AdjDel/Veh:	47.9	36.7		36.7			36.1	42.0		42.0			59.9	18.3		18.3			59.5	13.7		13.7		
LOS by Move:	D	D		D			D	D		D			E	B		B			E	B		B		
HCM2kAvgQ:	5	3		3			1	8		8			3	17		17			5	12		12		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 West Driveway / Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.413
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	6.3
Optimal Cycle:	36	Level Of Service:	A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	1	1 0	0	1	1	0 0
Volume Module:																
Base Vol:	68	0	4	0	0	0	0		1038	72			33	178	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	
Initial Bse:	68	0	4	0	0	0	0		1038	72			33	178	0	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	
PHF Volume:	68	0	4	0	0	0	0		1038	72			33	178	0	
Reduct Vol:	0	0	0	0	0	0	0		0	0			0	0	0	
Reduced Vol:	68	0	4	0	0	0	0		1038	72			33	178	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	
FinalVolume:	68	0	4	0	0	0	0		1038	72			33	178	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900		1900	1900			1900	1900	1900	
Adjustment:	0.72	1.00	0.72	1.00	1.00	1.00	1.00		0.94	0.94			0.73	0.73	1.00	
Lanes:	0.94	0.00	0.06	0.00	0.00	0.00	0.00		1.87	0.13			0.31	1.69	0.00	
Final Sat.:	1292	0	76	0	0	0	0		3342	232			434	2339	0	
Capacity Analysis Module:																
Vol/Sat:	0.05	0.00	0.05	0.00	0.00	0.00	0.00		0.31	0.31			0.08	0.08	0.00	
Crit Moves:	****								****							
Green/Cycle:	0.13	0.00	0.13	0.00	0.00	0.00	0.00		0.75	0.75			0.75	0.75	0.00	
Volume/Cap:	0.41	0.00	0.41	0.00	0.00	0.00	0.00		0.41	0.41			0.10	0.10	0.00	
Uniform Del:	40.2	0.0	40.2	0.0	0.0	0.0	0.0		4.4	4.4			3.3	3.3	0.0	
IncremntDel:	1.6	0.0	1.6	0.0	0.0	0.0	0.0		0.1	0.1			0.0	0.0	0.0	
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	0.0	
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00		1.00	1.00			1.00	1.00	0.00	
Delay/Veh:	41.8	0.0	41.8	0.0	0.0	0.0	0.0		4.5	4.5			3.3	3.3	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	
AdjDel/Veh:	41.8	0.0	41.8	0.0	0.0	0.0	0.0		4.5	4.5			3.3	3.3	0.0	
LOS by Move:	D	A	D	A	A	A	A		A	A			A	A	A	
HCM2kAvgQ:	3	0	3	0	0	0	0		7	7			1	1	0	

Note: Queue reported is the number of cars per lane.

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #5 East Driveway / Arch
********************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 12.3]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    14     0    0     0     0  963    72     0  138     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    14     0    0     0     0  963    72     0  138     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0    14     0    0     0     0  963    72     0  138     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    14     0    0     0     0  963    72     0  138     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   518  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   508  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   508  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  12.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      12.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	120	Critical Vol./Cap.(X):	0.975
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	30.2
Optimal Cycle:	180	Level Of Service:	C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Permitted					
Rights:	Include						Ovl						Include						Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0		1	0	2	0	2		2	0	0	1	0		0	1	0	0	1	
Volume Module:																								
Base Vol:	122	389	20	20	738	1551	734	20	211	20	20	20												
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Initial Bse:	122	389	20	20	738	1551	734	20	211	20	20	20												
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
PHF Volume:	122	389	20	20	738	1551	734	20	211	20	20	20												
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0												
Reduced Vol:	122	389	20	20	738	1551	734	20	211	20	20	20												
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
FinalVolume:	122	389	20	20	738	1551	734	20	211	20	20	20												
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900												
Adjustment:	0.95	0.94	0.94	0.95	0.95	0.75	0.92	0.86	0.86	0.95	0.95	0.85												
Lanes:	1.00	1.90	0.10	1.00	2.00	2.00	2.00	0.09	0.91	0.50	0.50	1.00												
Final Sat.:	1805	3409	175	1805	3610	2842	3502	142	1498	903	903	1615												
Capacity Analysis Module:																								
Vol/Sat:	0.07	0.11	0.11	0.01	0.20	0.55	0.21	0.14	0.14	0.02	0.02	0.01												
Crit Moves:	****					****	****				****													
Green/Cycle:	0.07	0.57	0.57	0.06	0.56	0.77	0.21	0.24	0.24	0.03	0.03	0.03												
Volume/Cap:	0.98	0.20	0.20	0.20	0.37	0.71	0.98	0.59	0.59	0.86	0.86	0.48												
Uniform Del:	55.8	12.4	12.4	54.1	14.8	6.9	46.9	40.3	40.3	58.2	58.2	57.7												
IncremntDel:	73.5	0.0	0.0	1.0	0.1	1.1	27.5	2.3	2.3	81.7	81.7	8.6												
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0												
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
Delay/Veh:	129.3	12.5	12.5	55.1	14.9	7.9	74.4	42.7	42.7	139.9	140	66.2												
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00												
AdjDel/Veh:	129.3	12.5	12.5	55.1	14.9	7.9	74.4	42.7	42.7	139.9	140	66.2												
LOS by Move:	F	B	B	E	B	A	E	D	D	F	F	E												
HCM2kAvgQ:	8	4	4	1	8	17	19	2	8	3	3	1												

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #7 South Driveway/Newcastle Road
******************************************************************************
Average Delay (sec/veh):      5.6       Worst Case Level Of Service: A[  8.8]
******************************************************************************
Street Name:          Newcastle Road                 NCYCC South Driveway
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0    0  1  0  0  0    0  0  0  0  0    0  0  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  102     4   276   17     0     0    0     0     0    0    13
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  102     4   276   17     0     0    0     0     0    0    13
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  102     4   276   17     0     0    0     0     0    0    13
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  102     4   276   17     0     0    0     0     0    0    13
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   106 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   104
Potent Cap.: xxxx xxxx xxxxx  1498 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   956
Move Cap.:   xxxx xxxx xxxxx  1498 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   956
Volume/Cap:  xxxx xxxx  xxxx  0.18 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.7 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.0
Control Del:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   8.8
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     A
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx              8.8
ApproachLOS:         *                *                *                A
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Project Driveway
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  9.0]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  1  0  0    0  0  1  1  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  531     0     0  969     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  531     0     0  969     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0  531     0     0  969     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  531     0     0  969     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.8  6.5   6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  1235 1500   485  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx   172  123   534  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx   172  123   534  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	1.205
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	99.4
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	323	0	364	701	0	0			920	2095	0		386	1983	679	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	323	0	364	701	0	0			920	2095	0		386	1983	679	
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	323	0	0	701	0	0			920	2095	0		386	1983	0	
Reduct Vol:	0	0	0	0	0	0			0	0	0		0	0	0	
Reduced Vol:	323	0	0	701	0	0			920	2095	0		386	1983	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	323	0	0	701	0	0			920	2095	0		386	1983	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900			1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00			0.92	0.95	1.00		0.92	0.95	1.00	
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00			2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3502	0	1900	3502	0	1900			3502	3610	1900		3502	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.00	0.00	0.20	0.00	0.00			0.26	0.58	0.00		0.11	0.55	0.00	
Crit Moves:		****		****					****					****		
Green/Cycle:	0.17	0.00	0.00	0.17	0.00	0.00			0.22	0.57	0.00		0.11	0.46	0.00	
Volume/Cap:	0.56	0.00	0.00	1.21	0.00	0.00			1.21	1.02	0.00		1.02	1.21	0.00	
Uniform Del:	38.3	0.0	0.0	41.7	0.0	0.0			39.1	21.7	0.0		44.6	27.2	0.0	
IncremntDel:	1.2	0.0	0.0	107.8	0.0	0.0			104.5	26.5	0.0		52.8	98.3	0.0	
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00	
Delay/Veh:	39.5	0.0	0.0	149.5	0.0	0.0			143.6	48.2	0.0		97.5	126	0.0	
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.5	0.0	0.0	149.5	0.0	0.0			143.6	48.2	0.0		97.5	126	0.0	
LOS by Move:	D	A	A	F	A	A			F	D	A		F	F	A	
HCM2kAvgQ:	5	0	0	22	0	0			27	44	0		11	56	0	

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.881
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	29.2
Optimal Cycle:	109	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 1	0	1 0	0 1	2	2 0	3 0	1	1 0	3 1	0
Volume Module:												
Base Vol:	378	169	100	20	2	160	755	2242	163	4	2509	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	378	169	100	20	2	160	755	2242	163	4	2509	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	378	169	100	20	2	160	755	2242	163	4	2509	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	378	169	100	20	2	160	755	2242	163	4	2509	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	378	169	100	20	2	160	755	2242	163	4	2509	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.94	0.94	0.95	0.85	0.75	0.92	0.91	0.85	0.95	0.91	0.91
Lanes:	2.00	0.63	0.37	1.00	0.03	2.97	2.00	3.00	1.00	1.00	3.99	0.01
Final Sat.:	3502	1127	667	1805	53	4227	3502	5187	1615	1805	6905	11
Capacity Analysis Module:												
Vol/Sat:	0.11	0.15	0.15	0.01	0.04	0.04	0.22	0.43	0.10	0.00	0.36	0.36
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.17	0.17	0.01	0.05	0.05	0.24	0.65	0.65	0.00	0.41	0.41
Volume/Cap:	0.80	0.88	0.88	0.88	0.80	0.80	0.88	0.66	0.15	0.66	0.88	0.88
Uniform Del:	41.9	40.5	40.5	49.3	47.2	47.2	36.4	10.6	6.7	49.8	27.1	27.1
IncremntDel:	9.2	24.3	24.3	135.0	19.5	19.5	10.5	0.5	0.1	143.0	3.5	3.5
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	51.1	64.8	64.8	184.3	66.6	66.6	46.9	11.0	6.7	192.8	30.7	30.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.1	64.8	64.8	184.3	66.6	66.6	46.9	11.0	6.7	192.8	30.7	30.7
LOS by Move:	D	E	E	F	E	E	D	B	A	F	C	C
HCM2kAvgQ:	8	11	11	2	4	4	15	16	2	1	23	23

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.805
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	32.5
Optimal Cycle:	83	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Permitted				Permitted				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 0	1	0	1	0 0	1	0	1	0 2	1	0	1	0 2	1	0
Volume Module:																
Base Vol:	261	144	181		158	92	115		150	1500	176		125	1741	185	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	261	144	181		158	92	115		150	1500	176		125	1741	185	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	261	144	181		158	92	115		150	1500	176		125	1741	185	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	261	144	181		158	92	115		150	1500	176		125	1741	185	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	261	144	181		158	92	115		150	1500	176		125	1741	185	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.52	0.92	0.92		0.37	0.92	0.92		0.95	0.90	0.90		0.95	0.90	0.90	
Lanes:	1.00	0.44	0.56		1.00	0.44	0.56		1.00	2.68	0.32		1.00	2.71	0.29	
Final Sat.:	986	771	969		694	774	968		1805	4568	536		1805	4623	491	
Capacity Analysis Module:																
Vol/Sat:	0.26	0.19	0.19		0.23	0.12	0.12		0.08	0.33	0.33		0.07	0.38	0.38	
Crit Moves:	****								****					****		
Green/Cycle:	0.33	0.33	0.33		0.33	0.33	0.33		0.10	0.47	0.47		0.10	0.47	0.47	
Volume/Cap:	0.80	0.57	0.57		0.69	0.36	0.36		0.80	0.70	0.70		0.70	0.80	0.80	
Uniform Del:	36.8	33.2	33.2		35.0	30.7	30.7		52.6	24.9	24.9		52.3	27.3	27.3	
IncremntDel:	13.6	1.3	1.3		8.8	0.4	0.4		21.9	0.9	0.9		11.3	2.1	2.1	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	50.4	34.6	34.6		43.8	31.1	31.1		74.5	25.8	25.8		63.6	29.3	29.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	50.4	34.6	34.6		43.8	31.1	31.1		74.5	25.8	25.8		63.6	29.3	29.3	
LOS by Move:	D	C	C		D	C	C		E	C	C		E	C	C	
HCM2kAvgQ:	11	10	10		6	6	6		8	18	18		6	24	24	

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 West Driveway / Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.778
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	14.9
Optimal Cycle:	72	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	1	1 0	0	1	1	0 0
Volume Module:																
Base Vol:	200	0	12	0	0	0	0	1879	30	4	320	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	200	0	12	0	0	0	0	1879	30	4	320	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Volume:	200	0	12	0	0	0	0	1879	30	4	320	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	200	0	12	0	0	0	0	1879	30	4	320	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
FinalVolume:	200	0	12	0	0	0	0	1879	30	4	320	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.72	1.00	0.72	1.00	1.00	1.00	1.00	0.95	0.95	0.88	0.88	1.00				
Lanes:	0.94	0.00	0.06	0.00	0.00	0.00	0.00	1.97	0.03	0.02	1.98	0.00				
Final Sat.:	1291	0	77	0	0	0	0	3546	57	41	3319	0				
Capacity Analysis Module:																
Vol/Sat:	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.53	0.53	0.10	0.10	0.00				
Crit Moves:	****							****								
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.68	0.68	0.68	0.68	0.00				
Volume/Cap:	0.78	0.00	0.78	0.00	0.00	0.00	0.00	0.78	0.78	0.14	0.14	0.00				
Uniform Del:	38.0	0.0	38.0	0.0	0.0	0.0	0.0	10.8	10.8	5.6	5.6	0.0				
IncremntDel:	13.3	0.0	13.3	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00				
Delay/Veh:	51.2	0.0	51.2	0.0	0.0	0.0	0.0	12.5	12.5	5.7	5.7	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	51.2	0.0	51.2	0.0	0.0	0.0	0.0	12.5	12.5	5.7	5.7	0.0				
LOS by Move:	D	A	D	A	A	A	A	B	B	A	A	A				
HCM2kAvgQ:	8	0	8	0	0	0	0	22	22	2	2	0				

Note: Queue reported is the number of cars per lane.

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: C[ 18.8]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     4     0    0     0     0 1864    30     0  315     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     4     0    0     0     0 1864    30     0  315     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     4     0    0     0     0 1864    30     0  315     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0     4     0    0     0     0 1864    30     0  315     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   947  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   266  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   266  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.02  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.0  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  18.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      18.8           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         C                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	120	Critical Vol./Cap.(X):	1.200
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	67.0
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Permitted			
Rights:	Include				Ovl				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1	0	1	0 2	0	2	2	0 0	1	0	0	1 0	0	1
Volume Module:																
Base Vol:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.95	0.95		0.95	0.95	0.75		0.92	0.86	0.86		0.95	0.95	0.85	
Lanes:	1.00	1.96	0.04		1.00	2.00	2.00		2.00	0.07	0.93		0.50	0.50	1.00	
Final Sat.:	1805	3533	66		1805	3610	2842		3502	108	1527		903	903	1615	
Capacity Analysis Module:																
Vol/Sat:	0.16	0.30	0.30		0.01	0.22	0.41		0.45	0.19	0.19		0.02	0.02	0.01	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.14	0.46	0.46		0.02	0.34	0.71		0.37	0.39	0.39		0.02	0.02	0.02	
Volume/Cap:	1.20	0.66	0.66		0.66	0.66	0.57		1.20	0.47	0.47		1.05	1.05	0.59	
Uniform Del:	51.8	25.3	25.3		58.7	33.8	8.6		37.7	27.2	27.2		58.7	58.7	58.2	
IncremntDel:	123.8	1.0	1.0		42.7	1.3	0.4		99.3	0.6	0.6		161.2	161	23.9	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	175.7	26.2	26.2		101.4	35.1	9.0		137.0	27.8	27.8		219.9	220	82.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	175.7	26.2	26.2		101.4	35.1	9.0		137.0	27.8	27.8		219.9	220	82.1	
LOS by Move:	F	C	C		F	D	A		F	C	C		F	F	F	
HCM2kAvgQ:	20	17	17		2	14	12		49	1	8		4	4	2	

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #7 South Driveway/Newcastle Road

****

Average Delay (sec/veh): 9.3 Worst Case Level Of Service: B[10.6]

****

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	0	0	12	36	0	0	0	0	0	0	262
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	36	0	0	0	0	0	0	262
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	12	36	0	0	0	0	0	0	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	12	36	0	0	0	0	0	0	262
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0
Potent Cap.:	xxxx	xxxx	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	900
Move Cap.:	xxxx	xxxx	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	900
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.29
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.2
Control Del:	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.6
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.6		
ApproachLOS:	*			*			*			B		

****

Note: Queue reported is the number of cars per lane.

****

```
--------------------------------------------------------------------------------
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Project Driveway
********************************************************************************
Average Delay (sec/veh):      0.0       Worst Case Level Of Service: A[  9.0]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  1  1  0  0    0  0  1  1  0    0  0  1! 0  0    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1380     0     0 1108     0     0    0     0     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1380     0     0 1108     0     0    0     0     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0 1380     0     0 1108     0     0    0     0     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1380     0     0 1108     0     0    0     0     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   6.8  6.5   6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  1798 2488   554  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx    73   30   481  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx    73   30   481  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 0.00  0.00  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx    0 xxxxx  xxxx xxxx xxxxx
SharedQueue:  0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:  9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     A    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         *                *                *                *
********************************************************************************
Note: Queue reported is the number of cars per lane.
********************************************************************************
```

Scenario 4A: 2035 General Plan plus Project

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	1.348
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	148.2
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0 0	0 1		2	0 0	0 1		2	0 2	0 1		2	0 2	0 1	
Volume Module:																
Base Vol:	322	0	382	1447	0	100	330	1961	0	325	1500	309				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	322	0	382	1447	0	100	330	1961	0	325	1500	309				
Added Vol:	0	0	118	158	0	0	0	127	0	10	11	14				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	322	0	500	1605	0	100	330	2088	0	335	1511	323				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Volume:	322	0	0	1605	0	0	330	2088	0	335	1511	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	322	0	0	1605	0	0	330	2088	0	335	1511	0				
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
FinalVolume:	322	0	0	1605	0	0	330	2088	0	335	1511	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	1.00	1.00	0.92	1.00	1.00	0.92	0.95	1.00	0.92	0.95	1.00				
Lanes:	2.00	0.00	1.00	2.00	0.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00				
Final Sat.:	3502	0	1900	3502	0	1900	3502	3610	1900	3502	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.09	0.00	0.00	0.46	0.00	0.00	0.09	0.58	0.00	0.10	0.42	0.00				
Crit Moves:		****		****				****		****						
Green/Cycle:	0.34	0.00	0.00	0.34	0.00	0.00	0.09	0.43	0.00	0.07	0.41	0.00				
Volume/Cap:	0.27	0.00	0.00	1.35	0.00	0.00	1.03	1.35	0.00	1.35	1.03	0.00				
Uniform Del:	24.0	0.0	0.0	33.0	0.0	0.0	45.4	28.5	0.0	46.5	29.6	0.0				
IncremntDel:	0.1	0.0	0.0	162.3	0.0	0.0	56.9	161	0.0	180.9	30.2	0.0				
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Delay Adj:	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
Delay/Veh:	24.1	0.0	0.0	195.3	0.0	0.0	102.3	190	0.0	227.4	59.8	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	24.1	0.0	0.0	195.3	0.0	0.0	102.3	190	0.0	227.4	59.8	0.0				
LOS by Move:	C	A	A	F	A	A	F	F	A	F	E	A				
HCM2kAvgQ:	4	0	0	53	0	0	10	70	0	13	33	0				

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.740
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.7
Optimal Cycle:	75	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 1	0	1 0	0 1	2	2 0	3 0	1	1 0	3 1	0
Volume Module:												
Base Vol:	67	59	20	20	1	160	994	2485	310	3	1906	2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	67	59	20	20	1	160	994	2485	310	3	1906	2
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	67	59	20	20	1	160	994	2887	310	3	1942	2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	67	59	20	20	1	160	994	2887	310	3	1942	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	59	20	20	1	160	994	2887	310	3	1942	2
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	67	59	20	20	1	160	994	2887	310	3	1942	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.96	0.96	0.95	0.85	0.75	0.92	0.91	0.85	0.95	0.91	0.91
Lanes:	2.00	0.75	0.25	1.00	0.02	2.98	2.00	3.00	1.00	1.00	3.99	0.01
Final Sat.:	3502	1365	463	1805	27	4245	3502	5187	1615	1805	6909	7
Capacity Analysis Module:												
Vol/Sat:	0.02	0.04	0.04	0.01	0.04	0.04	0.28	0.56	0.19	0.00	0.28	0.28
Crit Moves:	****				****		****				****	
Green/Cycle:	0.03	0.06	0.06	0.02	0.05	0.05	0.38	0.76	0.76	0.00	0.38	0.38
Volume/Cap:	0.74	0.71	0.71	0.71	0.74	0.74	0.74	0.73	0.25	0.73	0.74	0.74
Uniform Del:	48.4	46.1	46.1	49.0	46.8	46.8	26.5	6.4	3.5	49.9	26.8	26.8
IncremntDel:	27.4	18.8	18.8	58.6	12.7	12.7	2.2	0.7	0.1	236.2	1.2	1.2
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	75.7	64.8	64.8	107.6	59.5	59.5	28.8	7.2	3.6	286.1	27.9	27.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	75.7	64.8	64.8	107.6	59.5	59.5	28.8	7.2	3.6	286.1	27.9	27.9
LOS by Move:	E	E	E	F	E	E	C	A	A	F	C	C
HCM2kAvgQ:	2	4	4	2	3	3	15	18	3	1	15	15

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.731
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	21.0
Optimal Cycle:	67	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	1 0	0 1	0	1 0	2 1	0	1 0	2 1	0
Volume Module:												
Base Vol:	118	38	48	45	62	169	50	1599	219	111	1427	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	118	38	48	45	62	169	50	1599	219	111	1427	164
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	118	38	48	45	62	169	50	2001	219	111	1463	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	118	38	48	45	62	169	50	2001	219	111	1463	164
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	38	48	45	62	169	50	2001	219	111	1463	164
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	118	38	48	45	62	169	50	2001	219	111	1463	164
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.38	0.92	0.92	0.68	0.89	0.89	0.95	0.90	0.90	0.95	0.90	0.90
Lanes:	1.00	0.44	0.56	1.00	0.27	0.73	1.00	2.70	0.30	1.00	2.70	0.30
Final Sat.:	730	769	971	1296	454	1237	1805	4605	504	1805	4594	515
Capacity Analysis Module:												
Vol/Sat:	0.16	0.05	0.05	0.03	0.14	0.14	0.03	0.43	0.43	0.06	0.32	0.32
Crit Moves:	****							****		****		
Green/Cycle:	0.22	0.22	0.22	0.22	0.22	0.22	0.05	0.59	0.59	0.08	0.62	0.62
Volume/Cap:	0.73	0.22	0.22	0.16	0.62	0.62	0.51	0.73	0.73	0.73	0.51	0.51
Uniform Del:	43.4	38.3	38.3	37.7	42.1	42.1	55.2	17.4	17.4	53.6	12.4	12.4
IncremntDel:	15.6	0.3	0.3	0.3	3.1	3.1	4.4	0.9	0.9	16.5	0.1	0.1
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	59.0	38.6	38.6	37.9	45.2	45.2	59.6	18.4	18.4	70.1	12.6	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	59.0	38.6	38.6	37.9	45.2	45.2	59.6	18.4	18.4	70.1	12.6	12.6
LOS by Move:	E	D	D	D	D	D	E	B	B	E	B	B
HCM2kAvgQ:	6	3	3	1	8	8	3	22	22	6	12	12

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 West Driveway / Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.539
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	5.8
Optimal Cycle:	43	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	0 1	1 0	0
Volume Module:												
Base Vol:	68	0	4	0	0	0	0	1038	72	33	178	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	0	4	0	0	0	0	1038	72	33	178	0
Added Vol:	0	0	0	0	0	0	0	402	0	0	36	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	68	0	4	0	0	0	0	1440	72	33	214	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	68	0	4	0	0	0	0	1440	72	33	214	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	68	0	4	0	0	0	0	1440	72	33	214	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	68	0	4	0	0	0	0	1440	72	33	214	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	1.00	0.72	1.00	1.00	1.00	1.00	0.94	0.94	0.70	0.70	1.00
Lanes:	0.94	0.00	0.06	0.00	0.00	0.00	0.00	1.90	0.10	0.27	1.73	0.00
Final Sat.:	1292	0	76	0	0	0	0	3414	171	357	2314	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.00	0.05	0.00	0.00	0.00	0.00	0.42	0.42	0.09	0.09	0.00
Crit Moves:	****							****				
Green/Cycle:	0.10	0.00	0.10	0.00	0.00	0.00	0.00	0.78	0.78	0.78	0.78	0.00
Volume/Cap:	0.54	0.00	0.54	0.00	0.00	0.00	0.00	0.54	0.54	0.12	0.12	0.00
Uniform Del:	43.0	0.0	43.0	0.0	0.0	0.0	0.0	4.1	4.1	2.6	2.6	0.0
IncremntDel:	4.4	0.0	4.4	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	47.3	0.0	47.3	0.0	0.0	0.0	0.0	4.3	4.3	2.6	2.6	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.3	0.0	47.3	0.0	0.0	0.0	0.0	4.3	4.3	2.6	2.6	0.0
LOS by Move:	D	A	D	A	A	A	A	A	A	A	A	A
HCM2kAvgQ:	3	0	3	0	0	0	0	9	9	1	1	0

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

```
------------------------------------------------------------------------------
------------------------------------------------------------------------------
                        Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
******************************************************************************
Intersection #5 East Driveway / Arch
******************************************************************************
Average Delay (sec/veh):      0.1       Worst Case Level Of Service: B[ 15.0]
******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  1  1  0    1  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    14     0    0     0     0  963    72     0  138     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    14     0    0     0     0  963    72     0  138     0
Added Vol:      0    0     0     0    0     0     0  402     0     0   36     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    14     0    0     0     0 1365    72     0  174     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0    14     0    0     0     0 1365    72     0  174     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0    0    14     0    0     0     0 1365    72     0  174     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   719  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   376  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   376  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.04  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx   0.1  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx  15.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     B     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      15.0           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
******************************************************************************
Note: Queue reported is the number of cars per lane.
******************************************************************************
```

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 Arch / Austin

Cycle (sec):	120	Critical Vol./Cap.(X):	1.180
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	40.5
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Permitted			
Rights:	Include				Ovl				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1 0		1	0 2	0 2		2	0 0	1 0		0	1 0	0 1	
Volume Module:																
Base Vol:	122	389	20		20	738	1551		734	20	211		20	20	20	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	122	389	20		20	738	1551		734	20	211		20	20	20	
Added Vol:	36	3	0		0	32	0		0	0	402		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	158	392	20		20	770	1551		734	20	613		20	20	20	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	158	392	20		20	770	1551		734	20	613		20	20	20	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	158	392	20		20	770	1551		734	20	613		20	20	20	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	158	392	20		20	770	1551		734	20	613		20	20	20	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.94	0.94		0.95	0.95	0.75		0.92	0.86	0.86		0.62	0.62	0.85	
Lanes:	1.00	1.90	0.10		1.00	2.00	2.00		2.00	0.03	0.97		0.50	0.50	1.00	
Final Sat.:	1805	3411	174		1805	3610	2842		3502	51	1573		585	585	1615	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.11	0.11		0.01	0.21	0.55		0.21	0.39	0.39		0.03	0.03	0.01	
Crit Moves:	****						****			****						
Green/Cycle:	0.07	0.47	0.47		0.05	0.44	0.76		0.31	0.36	0.36		0.04	0.04	0.04	
Volume/Cap:	1.24	0.25	0.25		0.25	0.48	0.72		0.67	1.10	1.10		0.84	0.84	0.31	
Uniform Del:	55.8	19.3	19.3		55.3	23.9	7.9		35.7	38.7	38.7		57.2	57.2	55.9	
IncremntDel:	157.2	0.1	0.1		1.6	0.2	1.2		1.6	66.6	66.6		73.9	73.9	2.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	212.9	19.4	19.4		56.9	24.1	9.1		37.2	105	105.3		131.1	131	58.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	212.9	19.4	19.4		56.9	24.1	9.1		37.2	105	105.3		131.1	131	58.5	
LOS by Move:	F	B	B		E	C	A		D	F	F		F	F	E	
HCM2kAvgQ:	12	5	5		1	11	18		13	34	34		3	3	1	

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #7 South Driveway/Newcastle Road

****

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: A[8.8]

****

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	102	4	276	17	0	0	0	0	0	0	13
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	102	4	276	17	0	0	0	0	0	0	13
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	102	4	276	17	0	0	0	0	0	0	13
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	102	4	276	17	0	0	0	0	0	0	13
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	102	4	276	17	0	0	0	0	0	0	13
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	106	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	104
Potent Cap.:	xxxx	xxxx	xxxxx	1498	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	956
Move Cap.:	xxxx	xxxx	xxxxx	1498	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	956
Volume/Cap:	xxxx	xxxx	xxxx	0.18	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0
Control Del:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	8.8
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	A
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			8.8		
ApproachLOS:	*			*			*			A		

****

Note: Queue reported is the number of cars per lane.

****

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Project Driveway

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: F[50.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L -	T -	R		L -	T -	R		L -	T -	R		L -	T -	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0 1	1	0	0	0 0	1	1	0	0 0	1!	0	0	0 0	0	0	0
Volume Module:																
Base Vol:	0	531	0		0	969	0		0	0	0		0	0	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	531	0		0	969	0		0	0	0		0	0	0	
Added Vol:	18	0	0		0	0	434		38	0	2		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	18	531	0		0	969	434		38	0	2		0	0	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	18	531	0		0	969	434		38	0	2		0	0	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	18	531	0		0	969	434		38	0	2		0	0	0	
Critical Gap Module:																
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.8	6.5	6.9	xxxxx	xxxx	xxxxx		
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	4.0	3.3	xxxxx	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	1403	xxxx	xxxxx	xxxx	xxxx	xxxxx			1488	1753	702	xxxx	xxxx	xxxxx		
Potent Cap.:	493	xxxx	xxxxx	xxxx	xxxx	xxxxx			117	86	386	xxxx	xxxx	xxxxx		
Move Cap.:	493	xxxx	xxxxx	xxxx	xxxx	xxxxx			114	83	386	xxxx	xxxx	xxxxx		
Volume/Cap:	0.04	xxxx	xxxx	xxxx	xxxx	xxxx			0.33	0.00	0.01	xxxx	xxxx	xxxx		
Level Of Service Module:																
2Way95thQ:	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		
Control Del:	12.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		
LOS by Move:	B	*	*	*	*	*			*	*	*	*	*	*		
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			xxxx	118	xxxxx	xxxx	xxxx	xxxxx		
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	1.4	xxxxx	xxxxx	xxxx	xxxxx		
Shrd ConDel:	12.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	50.4	xxxxx	xxxxx	xxxx	xxxxx		
Shared LOS:	B	*	*	*	*	*			*	F	*	*	*	*		
ApproachDel:	xxxxxx			xxxxxx					50.4			xxxxxx				
ApproachLOS:	*			*					F			*				

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 SR 99 / Arch - SPUI

Cycle (sec):	100	Critical Vol./Cap.(X):	1.246
Loss Time (sec):	16 (Y+R=4.0 sec)	Average Delay (sec/veh):	115.2
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Ignore				Ignore				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	0 1	2	0	0	0 1	2	0	2	0 1	2	0	2	0 1
Volume Module:																
Base Vol:	323	0	364		701	0	0		920	2095	0		386	1983	679	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	323	0	364		701	0	0		920	2095	0		386	1983	679	
Added Vol:	0	0	10		14	0	0		0	11	0		102	110	138	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	323	0	374		715	0	0		920	2106	0		488	2093	817	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Volume:	323	0	0		715	0	0		920	2106	0		488	2093	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	323	0	0		715	0	0		920	2106	0		488	2093	0	
PCE Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
FinalVolume:	323	0	0		715	0	0		920	2106	0		488	2093	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	1.00	1.00		0.92	1.00	1.00		0.92	0.95	1.00		0.92	0.95	1.00	
Lanes:	2.00	0.00	1.00		2.00	0.00	1.00		2.00	2.00	1.00		2.00	2.00	1.00	
Final Sat.:	3502	0	1900		3502	0	1900		3502	3610	1900		3502	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.09	0.00	0.00		0.20	0.00	0.00		0.26	0.58	0.00		0.14	0.58	0.00	
Crit Moves:		****			****				****					****		
Green/Cycle:	0.16	0.00	0.00		0.16	0.00	0.00		0.21	0.55	0.00		0.13	0.47	0.00	
Volume/Cap:	0.56	0.00	0.00		1.25	0.00	0.00		1.25	1.07	0.00		1.07	1.25	0.00	
Uniform Del:	38.5	0.0	0.0		41.8	0.0	0.0		39.5	22.7	0.0		43.5	26.7	0.0	
IncremntDel:	1.3	0.0	0.0		124.8	0.0	0.0		121.9	41.6	0.0		61.7	116	0.0	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	0.00	0.00		1.00	0.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00	
Delay/Veh:	39.8	0.0	0.0		166.6	0.0	0.0		161.4	64.3	0.0		105.2	143	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.8	0.0	0.0		166.6	0.0	0.0		161.4	64.3	0.0		105.2	143	0.0	
LOS by Move:	D	A	A		F	A	A		F	E	A		F	F	A	
HCM2kAvgQ:	5	0	0		23	0	0		29	48	0		14	62	0	

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 Arch / Frontage Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.941
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 32.6
Optimal Cycle: 136 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	0 1	0	1 0	0 1	2	2 0	3 0	1	1 0	3 1	0
Volume Module:												
Base Vol:	378	169	100	20	2	160	755	2242	163	4	2509	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	378	169	100	20	2	160	755	2242	163	4	2509	4
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	378	169	100	20	2	160	755	2278	163	4	2859	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	378	169	100	20	2	160	755	2278	163	4	2859	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	378	169	100	20	2	160	755	2278	163	4	2859	4
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	378	169	100	20	2	160	755	2278	163	4	2859	4
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.94	0.94	0.95	0.85	0.75	0.92	0.91	0.85	0.95	0.91	0.91
Lanes:	2.00	0.63	0.37	1.00	0.03	2.97	2.00	3.00	1.00	1.00	3.99	0.01
Final Sat.:	3502	1127	667	1805	53	4227	3502	5187	1615	1805	6906	10
Capacity Analysis Module:												
Vol/Sat:	0.11	0.15	0.15	0.01	0.04	0.04	0.22	0.44	0.10	0.00	0.41	0.41
Crit Moves:		****		****			****				****	
Green/Cycle:	0.13	0.16	0.16	0.01	0.04	0.04	0.23	0.67	0.67	0.00	0.44	0.44
Volume/Cap:	0.85	0.94	0.94	0.94	0.85	0.85	0.94	0.66	0.15	0.66	0.94	0.94
Uniform Del:	42.7	41.6	41.6	49.4	47.5	47.5	37.9	10.0	6.2	49.8	26.8	26.8
IncremntDel:	14.6	37.7	37.7	167.6	29.0	29.0	19.0	0.5	0.1	142.1	6.8	6.8
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	57.4	79.3	79.3	216.9	76.4	76.4	56.8	10.5	6.3	191.9	33.6	33.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	57.4	79.3	79.3	216.9	76.4	76.4	56.8	10.5	6.3	191.9	33.6	33.6
LOS by Move:	E	E	E	F	E	E	E	B	A	F	C	C
HCM2kAvgQ:	9	12	12	2	4	4	16	16	2	1	28	28

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 Arch / Newcastle

Cycle (sec):	120	Critical Vol./Cap.(X):	0.887
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	34.3
Optimal Cycle:	113	Level Of Service:	C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Permitted						Permitted						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Lanes:	1	0	0	1	0		1	0	0	1	0		1	0	2	1	0		1	0	2	1	0	
Volume Module:																								
Base Vol:	261	144	181				158	92	115				150	1500	176				125	1741	185			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	261	144	181				158	92	115				150	1500	176				125	1741	185			
Added Vol:	0	0	0				0	0	0				0	36	0				0	350	0			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	261	144	181				158	92	115				150	1536	176				125	2091	185			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Volume:	261	144	181				158	92	115				150	1536	176				125	2091	185			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	261	144	181				158	92	115				150	1536	176				125	2091	185			
PCE Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
FinalVolume:	261	144	181				158	92	115				150	1536	176				125	2091	185			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	0.51	0.92	0.92				0.34	0.92	0.92				0.95	0.90	0.90				0.95	0.90	0.90			
Lanes:	1.00	0.44	0.56				1.00	0.44	0.56				1.00	2.69	0.31				1.00	2.76	0.24			
Final Sat.:	961	771	969				648	774	968				1805	4584	525				1805	4708	417			
Capacity Analysis Module:																								
Vol/Sat:	0.27	0.19	0.19				0.24	0.12	0.12				0.08	0.34	0.34				0.07	0.44	0.44			
Crit Moves:	****												****							****				
Green/Cycle:	0.31	0.31	0.31				0.31	0.31	0.31				0.09	0.49	0.49				0.10	0.50	0.50			
Volume/Cap:	0.89	0.61	0.61				0.80	0.39	0.39				0.89	0.68	0.68				0.68	0.89	0.89			
Uniform Del:	39.7	35.5	35.5				38.2	32.8	32.8				53.8	23.3	23.3				52.0	26.9	26.9			
IncremntDel:	26.1	2.1	2.1				19.8	0.5	0.5				38.9	0.8	0.8				9.9	4.2	4.2			
InitQueuDel:	0.0	0.0	0.0				0.0	0.0	0.0				0.0	0.0	0.0				0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Delay/Veh:	65.8	37.6	37.6				58.1	33.3	33.3				92.7	24.0	24.0				62.0	31.1	31.1			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	65.8	37.6	37.6				58.1	33.3	33.3				92.7	24.0	24.0				62.0	31.1	31.1			
LOS by Move:	E	D	D				E	C	C				F	C	C				E	C	C			
HCM2kAvgQ:	12	11	11				7	6	6				8	18	18				6	31	31			

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 West Driveway / Arch

Cycle (sec):	100	Critical Vol./Cap.(X):	0.790
Loss Time (sec):	12 (Y+R=4.0 sec)	Average Delay (sec/veh):	14.1
Optimal Cycle:	75	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	1 1	0	0 1	1 0	0
Volume Module:												
Base Vol:	200	0	12	0	0	0	0	1879	30	4	320	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	200	0	12	0	0	0	0	1879	30	4	320	0
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	200	0	12	0	0	0	0	1915	30	4	670	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	200	0	12	0	0	0	0	1915	30	4	670	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	200	0	12	0	0	0	0	1915	30	4	670	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	200	0	12	0	0	0	0	1915	30	4	670	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.72	1.00	0.72	1.00	1.00	1.00	1.00	0.95	0.95	0.90	0.90	1.00
Lanes:	0.94	0.00	0.06	0.00	0.00	0.00	0.00	1.97	0.03	0.01	1.99	0.00
Final Sat.:	1291	0	77	0	0	0	0	3547	56	20	3391	0
Capacity Analysis Module:												
Vol/Sat:	0.15	0.00	0.15	0.00	0.00	0.00	0.00	0.54	0.54	0.20	0.20	0.00
Crit Moves:	****							****				
Green/Cycle:	0.20	0.00	0.20	0.00	0.00	0.00	0.00	0.68	0.68	0.68	0.68	0.00
Volume/Cap:	0.79	0.00	0.79	0.00	0.00	0.00	0.00	0.79	0.79	0.29	0.29	0.00
Uniform Del:	38.2	0.0	38.2	0.0	0.0	0.0	0.0	10.9	10.9	6.2	6.2	0.0
IncremntDel:	14.5	0.0	14.5	0.0	0.0	0.0	0.0	1.8	1.8	0.1	0.1	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	52.7	0.0	52.7	0.0	0.0	0.0	0.0	12.7	12.7	6.3	6.3	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	52.7	0.0	52.7	0.0	0.0	0.0	0.0	12.7	12.7	6.3	6.3	0.0
LOS by Move:	D	A	D	A	A	A	A	B	B	A	A	A
HCM2kAvgQ:	8	0	8	0	0	0	0	23	23	4	4	0

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 East Driveway / Arch

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[19.1]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	2	0	0
Volume Module:																				
Base Vol:	0	0	4	0	0	0	0	1864	30	0	315	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	4	0	0	0	0	1864	30	0	315	0								
Added Vol:	0	0	0	0	0	0	0	36	0	0	350	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	4	0	0	0	0	1900	30	0	665	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Volume:	0	0	4	0	0	0	0	1900	30	0	665	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
FinalVolume:	0	0	4	0	0	0	0	1900	30	0	665	0								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	965	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	259	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	259	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Control Del:	xxxxx	xxxx	19.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*								
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	19.1			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	C			*			*			*										

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #6 Arch / Austin

****

Cycle (sec): 120 Critical Vol./Cap.(X): 1.424
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 112.5
Optimal Cycle: 180 Level Of Service: F

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Protected				Protected				Protected				Permitted			
Rights:	Include				Ovl				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 1	1 0		1	0 2	0 2		2	0 0	1 0		0	1 0	0 1	
Volume Module:																
Base Vol:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	296	1064	20		20	804	1158		1564	20	284		20	20	20	
Added Vol:	350	28	0		0	3	0		0	0	36		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	646	1092	20		20	807	1158		1564	20	320		20	20	20	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	646	1092	20		20	807	1158		1564	20	320		20	20	20	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	646	1092	20		20	807	1158		1564	20	320		20	20	20	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	646	1092	20		20	807	1158		1564	20	320		20	20	20	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.95	0.95	0.95		0.95	0.95	0.75		0.92	0.86	0.86		0.95	0.95	0.85	
Lanes:	1.00	1.96	0.04		1.00	2.00	2.00		2.00	0.06	0.94		0.50	0.50	1.00	
Final Sat.:	1805	3534	65		1805	3610	2842		3502	96	1536		903	903	1615	
Capacity Analysis Module:																
Vol/Sat:	0.36	0.31	0.31		0.01	0.22	0.41		0.45	0.21	0.21		0.02	0.02	0.01	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.25	0.52	0.52		0.02	0.29	0.60		0.31	0.33	0.33		0.02	0.02	0.02	
Volume/Cap:	1.43	0.60	0.60		0.60	0.78	0.68		1.43	0.63	0.63		1.22	1.22	0.68	
Uniform Del:	45.0	20.2	20.2		58.4	39.5	16.4		41.2	33.9	33.9		58.9	58.9	58.6	
IncremntDel:	205.1	0.5	0.5		25.8	4.0	1.1		198.1	2.4	2.4		231.9	232	50.6	
InitQueuDel:	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Delay/Veh:	250.1	20.8	20.8		84.3	43.5	17.5		239.3	36.3	36.3		290.8	291	109.2	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	250.1	20.8	20.8		84.3	43.5	17.5		239.3	36.3	36.3		290.8	291	109.2	
LOS by Move:	F	C	C		F	D	B		F	D	D		F	F	F	
HCM2kAvgQ:	49	15	15		2	16	17		60	2	11		4	4	2	

****

Note: Queue reported is the number of cars per lane.

Traffix 7.9.0415 (c) 2007 Dowling Assoc. Licensed to DKS ASSOC., OAKLAND,CA

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 South Driveway/Newcastle Road

Average Delay (sec/veh): 9.3 Worst Case Level Of Service: B[10.6]

Street Name:	Newcastle Road						NCYCC South Driveway					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	0	0	12	36	0	0	0	0	0	0	262
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	12	36	0	0	0	0	0	0	262
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	12	36	0	0	0	0	0	0	262
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	12	36	0	0	0	0	0	0	262
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	12	36	0	0	0	0	0	0	262
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	0
Potent Cap.:	xxxx	xxxx	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	900
Move Cap.:	xxxx	xxxx	xxxxx	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	900
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.29
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	1.2
Control Del:	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	10.6
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			10.6		
ApproachLOS:	*			*			*			B		

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Project Driveway

Average Delay (sec/veh): 281.9 Worst Case Level Of Service: F[2094.8]

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	1	1	0	0	0	0	1	1	0	0	0	1!	0	0	0	0	0	0	0
Volume Module:																				
Base Vol:	0	1380		0		0	1108		0		0		0		0	0		0		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	1380		0		0	1108		0		0		0		0	0		0		0
Added Vol:	2		0		0	0		0		38	377		0		16	0		0		0
PasserByVol:	0		0		0	0		0		0	0		0		0	0		0		0
Initial Fut:	2	1380		0		0	1108		38		377		0		16	0		0		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	1380		0		0	1108		38		377		0		16	0		0		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
FinalVolume:	2	1380		0		0	1108		38		377		0		16	0		0		0
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx					6.8	6.5			6.9	xxxxx	xxxx	xxxxx		
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx					3.5	4.0			3.3	xxxxx	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	1146	xxxx	xxxxx	xxxx	xxxx	xxxxx					1821	2511			573	xxxx	xxxx	xxxxx		
Potent Cap.:	617	xxxx	xxxxx	xxxx	xxxx	xxxxx					70	29			468	xxxx	xxxx	xxxxx		
Move Cap.:	617	xxxx	xxxxx	xxxx	xxxx	xxxxx					70	29			468	xxxx	xxxx	xxxxx		
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx					5.37	0.00			0.03	xxxx	xxxx	xxxx		
Level Of Service Module:																				
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx					xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
Control Del:	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx					xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
LOS by Move:	B	*		*		*		*		*	*		*		*	*		*		*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx					xxxx		73	xxxxx		xxxx	xxxx	xxxxx		
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx					xxxxx		43.4	xxxxx		xxxxx	xxxx	xxxxx		
Shrd ConDel:	10.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx					xxxxx		2095	xxxxx		xxxxx	xxxx	xxxxx		
Shared LOS:	B	*		*		*		*		*	*		F		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					2094.8					xxxxxx				
ApproachLOS:	*					*					F					*				

Note: Queue reported is the number of cars per lane.

APPENDIX C

NCYCC Health Care Facility TIA

Roadway Segment Analysis

Arch Road Roadway Analysis using HCM

	2B								3A				3C											
	Existing AM		Existing PM		EPAP w/o M AM		EPAP w/o M PM		Existing + Proj AM		Existing + Proj PM		EPAP w/o M + Proj AM		EPAP w/o M + Proj PM		2035 AM		2035 PM		2035 + Proj AM		2035 + Proj PM	
Input Parameters	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
Directional Volume	92	148	152	84	210	163	306	280	494	184	188	434	612	199	342	630	965	1693	1868	1474	1367	1729	1904	1824
Saturation s	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Lanes	2	1	2	1	2	1	2	1	2	2	2	2	2	1	2	1	2	2	2	2	2	2	2	2
PF	4.3294118	3.68	4.3294118	1.6727273	5.2571429	4.0888889	4.0888889	4.0888889	5.6615385	7.36	2.6285714	2.8307692	5.6615385	5.6615385	4.3294118	4.6	1.15	1.9368421	1.0985075	3.3454545	1.15	7.36	1.0985075	3.3454545
Cycle length C (s)	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
g/C	0.83	0.8	0.83	0.56	0.86	0.82	0.82	0.82	0.87	0.9	0.72	0.74	0.87	0.87	0.83	0.84	0.36	0.62	0.33	0.78	0.36	0.9	0.33	0.78
X (v/c)	0.0541176	0.0870588	0.0894118	0.0494118	0.1235294	0.0958824	0.18	0.1647059	0.2905882	0.1082353	0.1105882	0.2552941	0.36	0.1170588	0.2011765	0.3705882	0.5676471	0.9958824	1.0988235	0.8670588	0.8041176	1.0170588	1.12	1.0729412
capacity c (veh/h)	2822	1360	2822	952	2924	1394	2788	1394	2958	3060	2448	2516	2958	1479	2822	1428	1224	2108	1122	2652	1224	3060	1122	2652
Arrival Type, AT	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
length L (mi)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Urban Class	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
FFS (mi/h)	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Running Time T_R	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
Analysis Period T (hr)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
I	0.9996332	0.9986886	0.9985914	0.9997126	0.9966505	0.9983014	0.990813	0.9927586	0.9668391	0.9976496	0.9975101	0.9765625	0.9411248	0.9971002	0.9876226	0.9363687	0.8004869	0.1000074	-0.1714623	0.3791145	0.4926614	0.0477985	-0.2329506	-0.0989675
k (from table 15-6)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.19	0.5	0.5	0.42	0.34	0.42	0.5	0.5
Delay Computation																								
Uniform Delay	1.8155502	2.5796662	1.8729985	11.946569	1.3157825	2.1098867	2.2806194	2.2475517	1.3570877	0.664755	5.110952	5.0007252	1.4764123	1.1289763	2.0815739	2.2302699	30.888067	22.647846	42.25682	8.9714327	34.588866	7.0882557	42.725254	17.804385
Incremental delay	0.0080256	0.0277299	0.0137593	0.0216155	0.0190234	0.0300746	0.0308918	0.055607	0.0530167	0.0156699	0.0200633	0.0526894	0.0708663	0.0353939	0.0349016	0.1528664	0.5868694	9.2096983	174.76932	1.401527	2.0109575	32.054754	212.45375	130.29848
Control delay	7.8682902	9.5209014	8.1227411	20.004967	6.9362802	8.6571671	9.3560913	9.2455961	7.7362212	4.9082664	13.454566	14.208589	8.4296316	6.4271365	9.0468919	10.412108	36.108147	53.074999	221.18875	31.415047	41.788154	84.224316	259.38776	189.86224
Segment LOS																								
ST	79.86829	81.520901	80.122741	92.004967	78.93628	80.657167	81.356091	81.245596	79.736221	76.908266	85.454566	86.208589	80.429632	78.427136	81.046892	82.412108	108.10815	125.075	293.18875	103.41505	113.78815	156.22432	331.38776	261.86224
S_A	45	44	45	39	46	45	44	44	45	47	42	42	45	46	44	44	33	29	12	35	32	23	11	14
LOS	A	A	A	B	A	A	A	A	A	A	A	B	A	A	A	A	C	C	F	B	C	D	F	F

Austin Road Roadway Analysis using Florida Tables

Existing AM				Existing PM			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
74	C	79	C	46	C	42	C
EPAP with Mariposa AM				**EPAP with Mariposa PM**			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
81	C	51	C	76	C	98	C
EPAP without Mariposa AM				**EPAP without Mariposa PM**			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
83	C	56	C	55	C	57	C
Existing + Proj AM				**Existing + Proj PM**			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
113	C	483	D	424	D	42	C
EPAP w/o Mariposa + Proj AM				**EPAP w/o Mariposa + Proj PM**			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
122	C	490	D	433	D	96	C
2035 AM				**2035 PM**			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
531	C	969	D	1380	D	1108	D
2035 + Proj AM				**2035 + Proj PM**			
NB		SB		NB		SB	
Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
570	C	1403	D	1758	F	1147	D