APPENDIX G

TRAFFIC IMPACT ANALYSIS

Hatch Mott MacDonald
Delivering Solutions

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SUHSD #5 HIGH SCHOOL
SALINAS, CALIFORNIA

TRAFFIC IMPACT ANALYSIS

Prepared For

EMC Planning Group
Monterey, California

July 21, 2011

Hatch Mott MacDonald
Delivering Solutions

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1 INTRODUCTION

The proposed Salinas Union High School District (SUHSD) #5 High School project is located on Rogge Road in the City of Salinas. The site is currently being used for agricultural use. Exhibit 1 shows the location of the study project site, while Exhibit 2 shows the proposed site plan.

The purpose of this Traffic Impact Analysis (TIA) was to determine both the potential direct and cumulative traffic impacts from the buildout of the proposed project. The TIA presents the results from a series of analyses performed to determine the existing traffic conditions, the potential traffic impacts from the study project at project buildout levels, and how traffic conditions would change with the implementation of long-range development projects in the area.

1.1 Project Description

The project would construct a new high school, including various classroom, athletic, and performing arts facilities. The new high school would have an enrollment of up to 1,500 students.

1.2 Project Access

The project site is located on the south side of Rogge Road, just east of the Bolsa Knolls residential area and will be accessed via five driveways. From west to east on Exhibit 2A, the driveways serve the following purposes:

- Driveway 1 provides access to staff and visitor parking as well as the auto drop-off/pick-up area.
- Driveway 2 is an inbound only driveway that provides access to student parking and the bus drop-off/pick-up area.
- Driveway 3 is an outbound only driveway that provides egress from the student parking lot.
- Driveway 4 is an outbound only driveway that provides egress from the bus drop-off/pick-up area. The driveway approach to Rogge Road will be designed and signed to only allow right turns from the driveway to Rogge Road.
- Driveway 5 provides access to the special events parking lot that is located on the east side of the campus. This lot will only be used for special school events.

For the near-term, Rogge Road will be accessible from San Juan Grade Road and Natividad Road. Ultimately, the City of Salinas plans for Russell Road to be extended easterly from its current terminus at San Juan Grade Road and will be adjacent the school's southern property boundary. See Exhibit 10, City of Salinas Land Use and Circulation Policy Map. The long-range road network also includes the extension of El Dorado Drive from its current terminus at Boronda Road to Rogge Road.

1.3 Scope of Work

The scope of work for this traffic study was developed to identify the potential traffic impacts that may be associated with the study project. Intersections were selected for analysis based on the potential for the project to impact the facility.

The local streets and intersections included in this analysis were identified as potentially having the greatest impact from the project based on preliminary analysis of project trip generation and trip distribution. The boundaries of the study have been selected to include intersections that presently experience some congestion and/or may be measurably affected during the peak commute hours.

Beyond the limits of the study area, the project trips disperse onto numerous local streets. As the distance from the project increases the number of trips considered reduces and the distribution assumptions are less reliable.

This traffic study includes a traffic impact analysis of operations at 10 existing intersections during typical weekday AM and PM peak hours, as well as mid-afternoon analysis representing operations when the high school classes end for the day. The following existing intersections were analyzed in this study:

1. Natividad Road/Rogge Road
2. Natividad Road/Boronda Road
3. San Juan Grade Road/Boronda Road
4. San Juan Grade Road/Russell Road
5. San Juan Grade Road/Penzance Road
6. San Juan Grade Road/Rogge Road
7. Kelton Drive/Rogge Road
8. Bollenbacher Drive/Rogge Road
9. Jasper Way/Rogge Road
10. Jade Drive/Rogge Road

In addition, traffic operations at four of the five high school driveway intersections were analyzed. Operations at the driveway serving the special events parking lot are not analyzed because access to this lot will be prohibited during the AM, midday and PM peak hours. The future intersection of Rogge Road and El Dorado Drive was also analyzed.

Where required, mitigation measures are recommended to fully mitigate the impacts due to the development of the study project. Traffic control warrant and channelization warrant assessments were performed at the study intersections for all traffic scenarios evaluated.

This traffic study analyzed the traffic impacts of buildout of the proposed project, along with the additional effects of traffic from the long-range cumulative projects in the area. The traffic scenarios evaluated as part of this traffic study are:

- Existing Traffic Conditions;
- Existing Plus Project Phase 1;
- Cumulative Plus Project Buildout Traffic Conditions.

Traffic conditions during the AM, mid-afternoon and PM peak hours were analyzed. Existing traffic conditions were determined based on new AM, Mid-afternoon and PM peak period traffic counts collected at the study intersections.

The trips generated by the new high school were determined on the basis of a trip generation study of five high schools in the region. The project generated trips were assigned to the local road network using a trip distribution pattern derived using the expected attendance boundary for the high school. The process provides an intersection level analysis, which is required for the environmental evaluation of project impacts.

1.4 Traffic Operation Evaluation Methodologies

The following paragraphs describe the methodologies utilized in this analysis to evaluate the operations of all of the study intersections and roadway segments. All analysis is based upon the 2000 *Highway Capacity Manual* methodologies.

1.4.1 Intersection Operational Analysis

Intersection traffic operations were evaluated based on the Level of Service (LOS) concept. LOS is a qualitative description of an intersection and roadway's operation, ranging from LOS A to LOS F. Level of service "A" represents free flow un-congested traffic conditions. Level of service "F" represents highly congested traffic conditions with what is commonly considered unacceptable delay to vehicles on the road segments and at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes.

Intersection operations were evaluated using technical procedures documented in the *2000 Highway Capacity Manual* (HCM). For signalized intersections, average control delay per vehicle is utilized to define intersection level of service. Delay is dependent on a number of factors including the signal cycle length, the roadway capacity (number of travel lanes) provided on each intersection approach and the traffic demand. Appendix A1 shows the relationship between vehicle delay and the signalized intersection level of service categories. The TRAFFIX software program (version 8.0) was utilized to model the traffic impact of the different development scenarios and to calculate signalized and un-signalized intersection levels of service.

For all-way (or four-way) stop intersections, average control delay per vehicle is utilized to define intersection level of service. Delay is dependent on a number of factors including the roadway capacity (number of travel lanes) provided on each intersection approach and the traffic demand. Appendix A2 shows the relationship between vehicle delay and the all-way stop intersection level of service categories.

At one- and two-way stop controlled intersections, the operating efficiency of vehicle movements that must yield to through movements are analyzed. The level of service for vehicle movement on the controlled approaches is based on the distribution of gaps in the major street traffic stream and driver judgment in selecting gaps. Appendix A3 shows the relationship between the vehicle delay and level of service for two-way stop controlled intersections. The 2000 HCM calculates the level of service of the minor street approaches. Using this data, an overall intersection level of service was calculated. Both are reported in this study because traffic on the minor street approaches has the lowest priority of right-of-way at the intersection and are the most critical in terms of delay. Generally, LOS E/F operations on the side street approach are the thresholds that warrant improvements.

Peak hour signal warrants were analyzed for the unsignalized intersections, as taken from the *California Manual on Uniform Traffic Control Devices For Streets and Highways*, (Section 4C.04, Warrant 3, Peak Hour), California Department of Transportation, January 21, 2010. In this study, the only signal warrant evaluated was the peak hour signal warrant. The decision to install a traffic signal should not be based purely on the warrants alone. Engineering judgment should be exercised on a case-by-case basis to evaluate the effect a traffic signal would have on certain types of accidents and traffic conditions at the subject intersection, as well as at adjacent intersections. Warrant worksheets can be found in Appendix Q.

1.4.2 Peak Hour Factors

Per the 2000 Highway Capacity Manual, peak hour factors are included within this analysis. A peak hour factor is utilized in a level of service analysis to simulate operations during the peak fifteen minutes of a peak hour period, thereby accounting for variations in traffic demand within that hour.

Appendix R summarizes the peak hour factors utilized within this analysis. Under Existing conditions, the analysis uses the peak hour factors calculated from the existing traffic counts. For the remaining analysis scenarios, the peak hour factor has been re-calculated using a weighted average of the peak hour factors of the various components of the traffic under that scenario. For example, the primary components of the study project are a high school. Land uses such as schools experience a pronounced peaking of traffic demand just before and just after school starts, usually within a 15- to 20-minute period. Immediately before and after this period, traffic demand at the school is considerably smaller than within the period. The weighting of the peak hour factors for each intersection accounts for this short and pronounced peaking at the schools. Appendix R also contains the weighted average peak hour factor calculations at each intersection.

These peak hour factors are used in multiple ways within this analysis. The use of these peak hour factors results in the analysis representing traffic operations during the "peak of the peak," i.e. the 15 minutes prior to the start of school and the 15 minutes after school ends.

1.4.3 Heavy Vehicle Factors

At the time the intersection turning movement volume data was collected, the trucks and buses entering each study intersection was recorded. This data was used to calculate the percentage of heavy vehicles entering the intersection on each approach of each study intersection. This data was coded in the Traffix software so that the intersection level of service calculation accounts for the impact of trucks and buses. Appendix S shows the percentage of heavy vehicles for each study intersection.

1.5 Modeling of Right Turns

All of the signalized study intersections allow right turns on red (RTOR), and these right turns can have an effect on the intersection LOS calculations. However, for this study no allowance was made for RTOR, as insufficient information was available regarding the percentage of vehicles turning right on red. The results of the intersection analyses can thus be seen as reflecting a "worst case" scenario, as the effect of vehicles turning right on red on the intersection operations were not accounted for.

Right turn overlap signal phasing, whereby right turns are allowed to move unimpeded during a complementary left turn movement, is not currently in operation at any of the study intersections, but may be added as proposed improvements for at least one study intersection

Free right turns, whereby right turn movements are free flowing and not controlled by the adjacent traffic signal or stop sign, are also not present at any of the study intersections, but may be added as proposed improvements for at least one study intersection. Since these movements are unimpeded by either conflicting traffic or traffic control devices, there are no delays associated with these movements.

1.6 Level of Service Standards and Significance Criteria

The study area selected covers the jurisdiction of two public agencies, the City of Salinas and the County of Monterey. The City of Salinas and the County of Monterey have established LOS D as the general threshold for acceptable overall traffic operations for signalized, all-way stop controlled, and one- and two-way stop controlled intersections. For this study, LOS F operations on the side street approach are the thresholds that warrant improvements at one- and two-way stop controlled intersections.

The following are CEQA guidelines for the evaluation of the significance of transportation and traffic related impacts:

1. Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or

highways?
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)/
5. Result in inadequate emergency access?
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The significance criteria utilized in the study is consistent with the adopted policies, regulations, goals and guidelines for the City of Salinas and County of Monterey as applicable to the facilities under their jurisdiction. Where adopted policies do not exist, significance criteria are used that is consistent with criteria applied in recently completed environmental studies. The impact criteria for this study are presented below.

Signalized Intersections

Significant impacts at signalized intersections are defined to occur when:

- The addition of project traffic causes intersection operations to degrade from an acceptable level (LOS D or better) to an unacceptable level (LOS E or worse), or
- Project traffic is added to an intersection operating at an unacceptable level (LOS E or worse).

Unsignalized Intersections

Significant impacts at unsignalized intersections are defined to occur when:

- The addition of project traffic to any unsignalized intersection operating at LOS F under existing conditions; or
- Any traffic signal warrant is met.

Pedestrian and Bicycle Facilities

Significant impacts to pedestrian and bicycle facilities are defined to occur when:

- The project conflicts with existing or planned pedestrian or bicycle facilities, or
- The project creates pedestrian and bicycle demand without providing adequate facilities.

Transit Facilities

Significant impacts to transit facilities are defined to occur when:

- The project conflicts with existing or planned transit facilities, or
- The project generates potential transit trips without providing adequate facilities for pedestrians and bicycles to access transit routes and stops.

1.7 Road Network Assumptions

A description of the road network assumptions incorporated into this traffic analysis under the Existing and Cumulative traffic scenarios is provided below.

Existing Conditions (Without and With Project)

The analysis of existing conditions reflects existing street network conditions. The Existing Plus Phase 1 Project analysis also reflects existing street network conditions with the addition of the school and the five driveways that serve the school.

Cumulative Conditions

The cumulative condition traffic forecasts are based on 2030 travel forecasts prepared for the supplemental transportation analysis for the proposed Future Growth Area. The traffic forecasts documented in that study used a horizon year of 2030 and include the full buildout of the Salinas Future Growth Area including the FGA road network. Road improvements assumed for the cumulative condition analysis include the following:

1. San Juan Road widening to 4-lanes between Boronda Road and Rogge Road.
2. New US 101/Harrison Road diamond interchange with local roadway improvements.
3. Extension of Russell Road as a 4-lane arterial between San Juan Grade Road and Old Stage Road.
4. Extension of McKinnon Street as a 2-lane collector between Boronda Road and Russell Road.
5. Extension of El Dorado Drive as a 2-lane collector between Boronda Road and Russell Road.
6. Extension of Independence Boulevard as a 2-lane arterial between Boronda Road and Old Stage Road.
7. Extension of Constitution Boulevard as a 2-lane arterial between Boronda Road and Old Stage Road.
8. Extension of Sanborn Road as a 2-lane arterial between Boronda Road and Old Stage Road.
9. Boronda Road widening to 6-lane arterial between San Juan Grade Road and Williams Road.
10. Natividad Road widening to a 4-lane arterial between Boronda Road and Rogge Road.

11. Addition of two east-west 2-lane collectors between San Juan Grade Road and Williams Road.

A more complete description of the cumulative condition road network is provided in Section 4.

2 EXISTING TRAFFIC CONDITIONS

This chapter presents a description of the existing road network, existing traffic volumes, intersection levels of service, and an overview of traffic flow conditions within the study area under existing traffic conditions.

2.1 Existing Traffic Network

The project site is located on the south side of Rogge Road, east of the Bolsa Knolls community. The existing road network in the vicinity of the project site is described below.

Rogge Road is a two lane collector street that connects San Juan Grade Road and Natividad Road. West of the project site, the posted speed limit is 35 miles per hour and east of the project site, the speed limit is not posted. Bolsa Knolls Middle School is located on the north side of Rogge Road, east of Bollenbacher Drive. La Joya Elementary School is located on the south side of Rogge Road, west of Bollenbacher Drive. Rogge Road is currently under County jurisdiction.

Boronda Road is a primary access route to the study area and provides access between Highway 101 on the west and Williams Road on the east. It is a six lane east-west arterial between Highway 101 and just east of Main Street. It narrows to a two lane arterial east of San Juan Grade Road. It is planned to be a six lane divided arterial in the Salinas General Plan.

El Dorado Drive is a two lane collector that extends in a north-south orientation between Alvin Drive on the south and Boronda Road on the north. It will be extended as a two lane collector street to Rogge Road.

McKinnon Street is a two lane collector that extends in a north-south orientation between Alvin Drive on the south and Boronda Road on the north. It will be extended as a two lane collector street to Russell Road near the southwest corner of the high school site.

Natividad Road is a six lane divided arterial between Laurel Drive and Boronda Road. It narrows to a two lane rural highway between Boronda Road and Old Stage Road. It is planned to be widened to a four lane divided arterial between Boronda Road and Rogge Road.

Russell Road is currently a two lane arterial between Highway 101 and San Juan Grade Road. Major portions of the Russell Road are wide enough to be a four lane arterial, although the road is currently striped as a two lane arterial due to certain sections that have not been widened to its ultimate width. It is proposed to be extended east of San Juan Grade Road across Natividad Road, along the southern boundary of the project site, to Old Stage Road. It will be a four lane arterial from Highway 101 to Old Stage Road.

San Juan Grade Road is a four lane arterial between Main Street and Boronda Road. North of Russell Road, San Juan Grade is two-lanes wide. It extends north of Russell Road to Crazy Horse Canyon Road and continues north to Highway 156 near San Juan Bautista as a two-lane road. It is planned to be a four lane divided arterial from Rogge Road to Main Street.

San Juan Grade Road north of Russell Road, and Rogge Road including the Rogge Road/Natividad Road intersection and the streets within the Bolsa Knolls community, are under the jurisdiction of the County of Monterey. San Juan Grade Road south of Russell Road including the San Juan Grade Road/Russell Road intersection, Natividad Road south of the Natividad Road/Rogge Road intersection and Boronda Road are under the jurisdiction of the City of Salinas.

2.2 Existing Transit Systems

The largest single public transit provider in Monterey County is the Monterey-Salinas Transit (MST). The Monterey-Salinas Transit operates from five key transit centers, the Monterey Transit Plaza, Salinas Transit Center, Watsonville Transit Center, Edgewater Transit Exchange in Seaside/Sand City, and Marina Transit Exchange. Each of these centers operates on a time-transfer "pulse" schedule providing easy connections and quick transfers to multiple routings.

The project site is not currently served by MST. The closest service to the site is Route 45 that serves Russell Road, Van Buren Avenue, San Juan Grade Road south of Van Buren Avenue and Boronda Road. Exhibit 3 shows the existing MST transit routes in the vicinity of the project site.

2.3 Existing Bikeway and Pedestrian Facilities

➢ Bikeways

There are three basic types of bicycle facilities. Each type is described below:

- Bike path (Class I) - A completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists. These paths should have a minimum width of 8 feet when two-way travel is required and 5 feet in width to accommodate one-way movement.

- Bike lane (Class II) - A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi-exclusive use of bicycles. Bike lanes allow one-way bike travel. A minimum width of 5 feet should be provided and adjacent curbside parking avoided where feasible; where curbside parking is allowed adjoining a bike lane, the combined width of the parking and adjacent bike lane should be not less than 13 feet.

- Bike route (Class III) - Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

Existing Bike facilities in project vicinity

Except for a short section of Rogge Road between San Juan Grade Road and La Joya Elementary School, bike lanes are not currently provided on Rogge Road between San Juan Grade Road and Natividad Road. San Juan Grade Road and Natividad Road in the vicinity of the project also do not have bike lanes. The Monterey County Bikeways Plan includes plans for Class II bike lanes for San Juan Grade Road (between Van Buren Avenue and Crazy Horse Canyon Road, Rogge Road (between Natividad Road and San Juan Grade Road) and Natividad Road (between Boronda Road and Old Stage Road.

- **Pedestrian facilities**

A sidewalk is currently provided on the south side of Rogge Road between San Juan Grade Road and the westerly property line. A sidewalk is also provided on the north side of Rogge Road between San Juan Grade Road and the high school site, except along two parcels located between Jasper Way and Jade Drive. Along the project frontage as well as east of the project to Natividad Road, sidewalks are not provided as this portion of Rogge Road fronts agricultural land. The residential streets located within the Bolsa Knolls community are improved with curb, gutter and sidewalks.

At the San Juan Grade Road/Rogge Road intersection, a marked crosswalk is provided across the east intersection leg (Rogge Road) and across the south intersection leg (San Juan Grade Road). A marked crosswalk is also provided on Rogge Road on the east leg of the Rogge Road/Rogge Village Drive intersection. This crosswalk is located about 200 feet east of the Rogge Road/Kelton Street intersection. No other marked crosswalks are provided on Rogge Road. California Vehicle Code, Section 275 defines a crosswalk as the extension of sidewalks through intersections, or the portion of a roadway distinctly indicated by lines or other markings on the surface. Therefore, there are unmarked crosswalks at every street intersecting Rogge Road that require approaching motorists to yield to pedestrians as if they are in a marked crosswalk.

2.4 Existing Traffic Data

To establish existing traffic flow conditions, new traffic counts were conducted at most of the study intersections during the weekday AM (i.e. 7:00 – 9:00 am), midday (i.e. 2:00 – 4:00 PM) and PM (i.e. 4:00 – 6:00 pm) peak hours. The intersection volumes were collected by Hatch Mott MacDonald in March, April and May 2011. A table summarizing the collection dates of the existing traffic volumes is presented in Appendix B.

From the peak period traffic counts, the AM, midday, and PM peak hour turning movement volumes were identified. Each intersection was analyzed at its individual peak hour. Because all of the counts were not collected on the same day, the counts did not necessarily balance between intersections. The intersection traffic volumes were therefore balanced between adjacent intersections along the arterial corridors, to account for variations in the counts. Along each corridor, the intersection with the highest approach volume was selected as the controlling volume and volumes at the other

intersections along the corridor were balanced between intersections to the controlling volume, regardless of when the count was collected. This provides a reasonable worst-case analysis as the highest volume of traffic observed over the count period was used for the study. The existing peak hour traffic volumes are presented on Exhibits 4A, 4B, and 4C.

The following discussion provides an evaluation of operating conditions for the study intersections under existing traffic conditions.

2.5 Existing Conditions Intersection Operations

Existing conditions AM, midday, and PM intersection levels of service are summarized on Exhibit 5A. The LOS calculation sheets for existing traffic conditions are contained in Appendix C through Appendix N. The traffic control warrant and channelization warrant worksheets are included in Appendix M. Recommended intersection improvements are indicated on Exhibit 5B.

Three of the existing study intersections are currently signalized, one is all-way stop controlled and six are one-way or two-way stop-controlled, one is effectively an "L" intersection (with no conflicting movements). Please reference Exhibit 5A for a list of the study intersections and detail of the traffic control at each intersection.

All of the ten study intersections analyzed under existing conditions operate at or better than the LOS D standard. No improvements are required at any of these study intersections under existing conditions based on the intersection operations analysis.

The left turn lane on northbound Natividad Road at Rogge Road is designed with a storage bay of about 100 feet and a bay taper of 120 feet. The design of the left turn lane is not adequate based on design guidelines published by Caltrans. Left turn lanes provide storage for vehicles turning left and also vehicle deceleration for vehicles entering the left turn lane. It is desirable that deceleration takes place entirely off the through lanes. Caltrans allows 10 to 20 miles per hour of deceleration to occur in the left turn lane under certain conditions. Based on a 60 mph design speed, but allowing for 20 mph of deceleration to occur in the left turn lane, the left turn lane would need to be 315 feet in length just for vehicle deceleration. Based on Caltrans standards, 325 feet of additional space should be provided for vehicle storage. This will serve the peak demand during the morning peak hour. The under-design of the left turn lane is a safety issue as inadequate storage and deceleration lengths are currently provided. Vehicles slowing in the northbound Natividad Road through lane before entering the left turn lane present a hazard to through traffic on Natividad Road. Vehicle spillback from the left turn lane into the northbound through lane also is a safety hazard for motorists in the left turn lane and motorists travelling on northbound Natividad Road.

3 EXISTING PLUS PROJECT PHASE 1 TRAFFIC CONDITIONS

This section describes the analysis results of the study intersection and roadway segment operations under Existing Plus Project Phase 1 traffic conditions. This traffic scenario includes only Phase 1 of the proposed project.

3.1 Project Description and Phasing

The proposed Salinas #5 High School project is located in the City of Salinas. The project site is located on the south side of Rogge Road, immediately east of Bolsa Knolls community. The site is currently being used for agricultural uses.

The project has been split into two separate phases. Phase 1 would develop a high school with an enrollment of 900 students. The campus would be built-out to include classrooms, support facilities and athletic fields. The school is being built to support 900 students in existing neighborhoods served by the Santa Rita Union School District (elementary schools). The SUHSD expects to be able to accommodate 600 students from the Future Growth Area. Because it is not known if and when development within the Future Growth Area will proceed, the traffic impacts of full enrollment was analyzed in the Cumulative scenario.

The project will be accessed from Rogge Road via five driveways. For reference, the driveways are 1 through 5 from west to east as shown on Exhibit 2A. From west to east on Exhibit 2A, the driveways serve the following purposes:

- Driveway 1 provides access to staff and visitor parking as well as the auto drop-off/pick-up area.
- Driveway 2 is an inbound only driveway that provides access to student parking and the bus drop-off/pick-up area.
- Driveway 3 is an outbound only driveway that provides egress from the student parking lot.
- Driveway 4 is an outbound only driveway that provides egress from the bus drop-off/pick-up area. The driveway approach to Rogge Road will designed and signed to only allow right turns from the driveway to Rogge Road.
- Driveway 5 provides access to the special events parking lot that is located on the east side of the campus. This lot will only be used for special school events.

3.2 Analysis of Project Phases

This chapter (Chapter 3) focuses on traffic operations under Phase 1 of the project, while Chapter 5 describes the analysis of Phase 2. Phase 1 is analyzed in conjunction with existing traffic volumes and the existing street network, while Buildout is analyzed with the trips from both cumulative long-range development projects in the greater Salinas area that includes development of the Future Growth Area land uses and proposed street network changes.

3.3 Project Trip Generation

Exhibit 6B contains the trip generation estimate for Phase 1 of the study project. The assumptions utilized in deriving the trip generation estimates for each component are described below.

The standard method for estimating trip generation for a high school is via the use of trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation*, 8th Edition, 2008. However, these trip rates were derived from surveys conducted across the United States over a four-decade period (from the late 1960s to the 2000s). In more recent times, traffic activity at schools has increased dramatically, as fewer students walk or bike to school. The United States Federal Highway Administration has documented this trend in the following two studies:

1. *Transportation Characteristics of School Children*, Report No. 4, Nationwide Personal Transportation Study, Federal Highway Administration, Washington, DC, July 1972; and
2. 2001 National Household Travel Survey, conducted by Federal Highway Administration.

According to these studies, in 1969, nearly half of all students walked or biked to school. By the 2001, fewer than 15% of students walked or biked. In recognition of this trend, the use of the ITE trip rates was rejected in favor of the derivation of more localized trip generation rates, derived from surveys of high schools in the greater Monterey Bay Area and southern Santa Clara County.

Traffic counts were conducted by Hatch Mott MacDonald (formerly Higgins Associates) staff in March 2008 during a seven-day period at three area high schools – Seaside High School in Seaside, Pajaro Valley High School in Watsonville, and Everett Alvarez High School in Salinas. Entering and exiting volumes at the driveways to each of these high schools were collected, and compiled on a daily and peak hour basis. The traffic counts between successive school days were averaged together to create average daily and peak hour volumes for each of the three schools. This data was supplemented with previous traffic counts performed at two other area high schools – Gilroy High School in Gilroy, and Aptos High School in Aptos. The Gilroy High School data was taken from the report *Christopher High School Traffic Analysis*, Fehr & Peers Transportation Consultants, May 30, 2006, while the Aptos High School data was taken from the report *Aptos High School Access and Circulation Evaluation*, Higgins Associates, May 7, 2004. Appendix L contains the traffic volumes collected at the three high schools in March 2008. The March 2008 counts at Everett Alvarez High School were supplemented with additional counts at the school driveways by Hatch Mott MacDonald (formerly Higgins Associates) in January 2008.

Exhibit 6A contains a summary of the traffic activity at each of the five area high schools, along with their student populations at the time of the data collection. From this data, trip generation rates were derived on a daily basis, as well as for the AM peak hour,

PM school peak hour (i.e. midday peak hour, when school lets out for the day), and PM street peak hour (i.e. PM peak hour, the evening rush hour). These rates were derived by performing a weighted average of the trip activity at the five schools, weighted based upon the student population at each school. These rates were then utilized in the trip generation estimate for the high school component of Phase 1 of the project.

Exhibit 6A also compares the derived trip generation rates to those from ITE for a standard public high school. The combined trip rate from the five area high schools are higher than those published by ITE. The daily trip generation rate derived from the school survey is 8% higher than the ITE rate and the AM, midday and PM peak hour rates from the school survey range from 22% to 33% higher than the ITE published trip rates. Therefore, the utilization of trip rates derived from traffic counts at area schools would constitute a more conservative (high-side) analysis than use of the ITE rates.

Exhibit 6B contains the estimated total project trip generation. Phase 1 of the project would generate a net 1,661 daily trips, with 495 trips during the AM peak hour, 306 trips during the midday peak hour, and 162 trips during the PM street peak hour.

3.4 Project Trip Distribution and Assignment

Trip distribution defines the origins and destinations of all trips to and from a project site. Sixty percent of the enrollment for the new high school will be located within the Santa Rita Union School District and this represents the anticipated enrollment for Phase 1 of the project. Forty percent of the ultimate enrollment will be located within the Future Growth Area and this represents the remainder of the project buildout enrollment. Trip distribution patterns were developed separately for each of the areas to account for the different spatial orientation of each with respect to the new high school.

Exhibit 7 shows the spatial distribution pattern for students located within the Santa Rita Union School District. The trip distribution pattern was developed using the enrollment figures at the elementary schools located within the school district as a surrogate for the spatial distribution pattern of population within the district. The following enrollment figures were used in the analysis for each school:

La Joya Elementary School	459 students
McKinnon Elementary School	540 students
New Republic Elementary School	410 students
Santa Rita Elementary School	515 students

The trip distribution was further refined to determine the percentage arriving and departing to/from the west versus the percentage arriving and departing to/from the east on Rogge Road. The results are as follows:

	To/From the West	To/From the East
Santa Rita Union District Students	80%	20%

The Phase 1 assignment of AM, Midday and PM peak hour high school trips to the study intersections is shown on Exhibits 8A, 8B and 8C, respectively.

No credit was given for the trips generated by existing high school students that would be transferred to the new school. All of the project-generated traffic was assumed to be new traffic on the local road network. As a result, the analysis of traffic impacts is conservative. Further, regionally important benefits that will occur as a result of the project are not documented in this report. For example, school commute related trip lengths for the 900 students that would attend the new school in Phase 1 of the project could be less, on average, with the school developed versus without the school. That is because these students now attend other high schools in Salinas and the new high school will be located a shorter distance from home than the other high schools. The shorter average trip lengths will reduce overall vehicle miles of school commute travel and will reduce air quality and green house gas impacts associated with school commute trips.

The start and end times for the high school was assumed to occur at or near the start and end times of the existing elementary school and middle school located on Rogge Road. Consistent with the starting and ending times of other high schools in the Salinas Union High School District, the new high school was assumed to begin the school day at or near the 8:00 AM hour and end the school day at or near the 3:00 PM hour. La Joya Elementary School begins the day at 8:00 AM and ends at 2:40 PM and the Bolsa Knolls Middle school begins school at 8:15 AM and ends at 3:10 PM.

3.5 Project Level Transit Systems

The Monterey-Salinas Transit (MST) does not provide service to Rogge Road. However, the school district operates a school busing program. Students living outside of 2½ miles of the high school would be offered bus transportation to the school. The exact number of students that would be bused to and from the school is uncertain. For purposes of this analysis, it was assumed the school would be served by six buses during the morning arrival period and afternoon departure period. The proposed project would not create significant impacts to transit facilities.

3.6 Project Level Bikeway and Pedestrian Facilities

The project will generate pedestrian and bicycle trips. Based on the statistics cited in Section 3.3, Trip Generation, approximately 135 students during Phase 1 and 225 students at buildout would bike or walk to school. This is a rough approximation of walking and bicycling demand generated by the school based on national statistics. Actual usage will depend on housing density located with reasonable walking and biking distances, the provision of pedestrian and bicycling facilities and other factors.

The predominant pedestrian and bicycle demand will be initially generated from west of the site. Future pedestrian and bicycle demand from east and south of the site will be generated when the Future Growth Area is developed.

Pedestrians and bicyclists would travel primarily from the Bolsa Knolls neighborhood using Penzance Street, Bollenbacher Drive, Jasper Way and Jade Street to access Rogge Road. Additional walking and bicycle trips to and from the site would be generated by residential housing located on the north side of Rogge Road at San Juan Grade Road and on the west side of San Juan Grade Road at Rogge Road.

The continuous sidewalk located on the south side of Rogge Road between San Juan Grade Road and the project site would serve pedestrians originating from residential development located south of Rogge Road and west of the project site. A continuous sidewalk is not currently provided on the north side of Rogge Road west of the project site to serve pedestrians originating from residential development on the north side of Rogge Road. In addition, walking trips are anticipated between the middle school located on the north side of Rogge Road west of Jasper Way and the high school. The lack of a continuous sidewalk on the north side of Rogge Road west of the project site is a significant impact considering the pedestrian traffic that the project will generate. To mitigate this impact, the project should complete the missing sections of sidewalk on Rogge Road west of the project site.

A Class II bike lane currently exists on Rogge Road between San Juan Grade Road and La Joya Elementary School, but not along the remaining sections on Rogge Road west of the project site. This analysis assumes that some of the high school students will bike to school along Rogge Road. Without Class II bike lanes along the entire portion of Rogge Road west of the project site, bicycling along Rogge Road could be dangerous and result in injury or death to students. This would be a significant safety impact. To mitigate this impact, the project should provide Class II bike lanes along both sides Rogge Road consistent with the Monterey County Bikeways Plan. This would require prohibiting parking on Rogge Road from La Joya Elementary School to the project site. In addition, minor widening of Rogge Road would be required on the north side of Rogge Road at locations that have not been improved with curb gutter and sidewalk. A crosswalk would then need to be provided at the Rogge Road/Jade Street intersection, allowing bicyclists and pedestrians to safely cross the road.

The project will provide a 10 foot wide meandering shared pedestrian/bicycle path on the south side of Rogge Road along the project frontage. The shared facility will be constructed in lieu of Class II bike lanes on Rogge Road. The shared path will continue to the west of Driveway #1 and will terminate at the sidewalk on the south side of Rogge Road that terminates at the westerly property boundary. The existing Rogge Road sidewalk at this location is only 4 feet in width, which is not wide enough to serve as a shared path facility. The planned facilities for pedestrians and bicyclists between the project's western boundary and Jade Drive will not be adequate for the pedestrian and bicycle demand anticipated for this section of roadway. This could result in collisions between pedestrians and bicyclists potentially resulting in injury. This is considered a significant safety impact. To mitigate this impact, the project should widen the existing sidewalk located on the south side of Rogge Road between Jade Drive and the school property boundary to 10 feet. In addition, as identified above, a crosswalk should be provided across Rogge Road at the Jade Drive intersection, allowing bicyclists and

pedestrians to safely cross the road. The crosswalk should be yellow in color and include additional signing and striping as required by the California Manual on Uniform Traffic Control Devices (MUTCD).

A sidewalk will be constructed on the west side of Driveway #1 that will connect to the sidewalk on Rogge Road that terminates at the westerly property boundary. This sidewalk will provide a hard surface connection between the school and the Rogge Road sidewalk that will allow pedestrians to avoid conflicting with drop-off/pick-up traffic.

A bicycle parking area should be provided on the school site.

3.7 Existing Plus Project Phase 1 Traffic Conditions - Intersection Operations

The traffic that would be generated by Phase 1 of the study project was combined with the existing traffic to achieve Existing Plus Project Phase 1 condition traffic volumes. Existing Plus Project Phase 1 morning, midday, and evening peak hour turning volumes are illustrated on Exhibits 9A, 9B and 9C. Exhibit 5A tabulates corresponding morning, midday, and evening peak hour levels of service. The level of service worksheets are presented in Appendices C through N.

The following three intersections would not operate at acceptable operations under the Existing Plus Project Phase 1 Condition:

Intersection #5 – San Juan Grade Road/Penzance Street
Intersection #6 – San Juan Grade Road/Rogge Road
Intersection #11 – Rogge Road/High School Driveway #1

In addition, the left turn storage lane on northbound Natividad Road at Rogge Road is not adequate to serve the Existing Plus Project Phase 1 travel demand at the intersection.

Traffic operations at each of these intersections under existing plus project conditions are described below.

Intersection #1 – Natividad Road/Rogge Road: This intersection will operate at satisfactory levels of service under Project Phase 1 conditions. However, the project will add trips to the northbound Natividad Road left turn lane. As described in the Existing Conditions section, this left turn lane is not adequately designed for current conditions. The addition of project trips to the intersection represents a significant impact. To mitigate the impact, the left turn lane on northbound Natividad Road at Rogge Road should be lengthened to provide for 400 feet for vehicle storage plus additional length for vehicle deceleration.

Intersection #5 – San Juan Grade Road/Penzance Street: This intersection will operate at an overall LOS D, but the westbound Penzance Street approach will operate at LOS F during the AM peak hour. Note that a small amount of project trips were assigned to this intersection on the Penzance Street approaches to account for the possibility that some high school traffic would use Penzance Street to circulate between Rogge Road and San

Juan Grade Road. Even if zero project trips were added to the Penzance Street approaches, the Penzance Street approaches to San Juan Grade Road would operate at LOS F during the AM peak hour due to the amount of project traffic added to San Juan Grade Road.

The San Juan Grade Road/Penzance Street intersection operates at an overall LOS A and the westbound Penzance Street approach operates at LOS E during the AM peak hour. By degrading the westbound intersection approach from LOS E, which is an acceptable operation, to LOS F, which is not acceptable, the project impact to this intersection is considered significant.

The Caltrans Peak Hour Signal Warrant is met at the San Juan Grade Road/Penzance Street intersection for the Existing Plus Project Phase 1 Condition. With signalization and the addition of a left turn on the northbound San Juan Grade approach to Penzance Street, the San Juan Grade Road/Penzance Street would operate at LOS C during each of the three study peak hours (AM, Midday and PM). The recommended intersection improvement is summarized on Exhibit 5B.

Intersection #6 – San Juan Grade Road/Rogge Road: This intersection is currently an all-way stop controlled intersection and it would operate at LOS F during the AM peak hour with the project developed. The intersection currently operates at LOS C during the AM peak hour. The project impact to this intersection would be significant.

The following improvements would improve the operation of the intersection to acceptable levels:

1. Add a traffic signal.
2. Modify the northbound San Juan Grade approach to provide one left turn lane, one northbound through lane and one right turn lane.
3. Modify the southbound approach to provide one left turn lane and one shared through/right turn lane.
4. Modify the westbound approach to provide one exclusive left turn lane and one shared left/through/right lane.
5. Operate the eastbound and westbound approaches with "split" signal phasing.

With these improvements, the intersection would operate at LOS D during the AM peak hour and LOS C during the Midday and PM peak hours.

Intersection #11 – Rogge Road/High School Driveway #1: This intersection would operate at an overall LOS B, but the northbound driveway would operate at LOS F during the AM peak hour. This is an unacceptable operating condition. Because this driveway serves the drop-off/pick-up area, significant vehicle queuing through the drop-off/pick-up area would occur in this situation. Potentially, the queue could extend from the northbound approach (exit) to Rogge Road, through the drop-off/pick-up area and to the inbound lane (entrance) of the driveway at Rogge Road. This situation could cause gridlock that would extend onto Rogge Road. Under these conditions, motorists

dropping students off in the morning could choose to avoid entering the drop-off area in the morning and would drop their student(s) at other locations near the school, including on Rogge Road and on Jade Drive.

Signalization of the Rogge Road/Project Driveway #1 intersection is not recommended for Existing Plus Project Phase 1 conditions with the project site plan depicted on Exhibit 2A. The peak hour signalization warrant would not be met, except for the brief 20 minute period prior to the start of school under Existing Plus Project Phase 1 conditions. In addition, signalization is not necessarily the best alternative considering the high inbound and outbound vehicle demand that would occur during the morning drop-off period and the relatively short distance between Rogge Road and the parent drop-off area for both the inbound and outbound directions. Signalization of the Rogge Road intersection with the driveway serving the drop-off/pick-up area could create gridlock in the drop-off/pick-up area during periods when the signal indication for the driveway exit approach was red.

It is recommended that the school access plan be modified to achieve acceptable traffic operations at the Rogge Road intersections with the project driveways. This could necessitate separating inbound movements to the parent loading area and outbound movements from the parent loading area to two separate driveways.

Alternative Mitigation

As an alternative to the improvements described for to mitigate impacts at San Juan Grade Road/Penzance Road (Intersection 5) and San Juan Grade Road/Rogge Road (Intersection 6), the starting time of the high school could be shifted to avoid the starting and ending times of the elementary and middle schools located on Rogge Road. La Joya Elementary School begins the day at 8:00 AM and ends at 2:40 PM and the Bolsa Knolls Middle school begins school at 8:15 AM and ends at 3:10 PM. Generally, peak traffic conditions occur in the 20 minute period prior to the beginning of school and dissipate soon after the scheduled beginning of school. By scheduling the high school to begin the first period prior to 7:45 AM or after 8:30 AM, impacts identified at the San Juan Grade Road/Penzance Road and San Juan Grade Road/Rogge Road would be reduced and the two intersections would operate at satisfactory levels of service with existing intersection geometrics and traffic control. Impacts to Intersections 5 and 6 would not be significant and mitigation improvements would not be necessary.

Impacts to Intersection 1 (Natividad Road/Rogge Road) would remain significant if the starting time for the high school was shifted to before 7:45 AM or after 8:30 AM and improving the design of the left turn lane would be warranted.

3.8 Neighborhood Impacts

The high school site is located immediately east of the Bolsa Knolls residential community and the Bolsa Knolls street network provides an alternative route to Rogge Road and San Juan Grade Road for circulation between the high school and the San Juan Grade Road at Russell Road. Some high school traffic could use Penzance Street and

Jade Drive for access to avoid San Juan Grade Road north of Penzance Street and Rogge Road between San Juan Grade Road and Jade Drive. Currently, Penzance Street between San Juan Grade Road and Bollenbacher Drive and Bollenbacher Drive between Penzance Street and Rogge Road is used by parents as an access route to La Joya Elementary School.

Whether Penzance Street is used to bypass San Juan Grade Road and Rogge Road will depend on travel time differential between the two alternative routes. The Penzance Street-Jade Drive route is subject to 25 mile per hour travel speeds on these residential streets and additional delay at two all-way stop controlled intersections on Penzance Street, at Dexter Drive and Pingree Way. Additional delay is incurred turning onto and off of Rogge Road and San Juan Grade Road. The San Juan Grade Road-Rogge Road route is subject to 35 mile per hour speed limits and additional delay at the all-way stop controlled San Juan Grade/Rogge Road intersection.

It is important that the capacity of the San Juan Grade Road – Rogge Road route and the San Juan Grade Road/Rogge Road intersection in particular, be improved to serve the projected demand unless the alternative mitigation (i.e., non-conflicting school bell schedule) is implemented. If the capacity of the route is not improved to meet the demand, traffic will seek alternatives, which is in this case, is Penzance Street and Jade Drive.

Travel times between the San Juan Grade Road/Penzance Street intersection and the Rogge Road/Jade Street intersection using the two alternative routes are compared in the table below.

Travel Time Comparison Between
San Juan Grade Road/Penzance Street and Rogge Road/Jade Drive Intersections Using Alternative Routes
Existing Plus Project Conditions - AM Peak Hour

	Inbound			Outbound		
	SJG Rd Rogge Rd (seconds)	Penzance Jade Dr. (seconds)	Time Differential (seconds)	SJG Rd Rogge Rd (seconds)	Penzance St. Jade Dr. (seconds)	Time Differential (seconds)
No Mitigation	286	135	151	263	374	-111
With Mitigation	101	157	-56	114	178	-64

Notes:

1. Segment travel time based on speed limit and travel distance. Intersection delay based on Existing Plus Project intersection delay calculations using the Traffix software.
2. Travel times for the no mitigation condition based on existing intersection geometrics and traffic control.
3. Travel times for the with mitigation condition based on intersection geometrics and traffic control recommended on Exhibit 5B that would improve intersection operations to acceptable conditions.

Under Existing Plus Project Conditions and with no improvements, the Penzance Street – Jade Drive route would provide faster travel time from San Juan Grade Road compared to the San Juan Grade Road – Rogge Road route in the inbound direction during the AM peak hour. With signalization of the San Juan Grade Road/Rogge Road and San Juan Grade/Penzance Street intersections, the San Juan Grade Road-Rogge Road route would become the faster route to the school in the morning. In the outbound direction during the AM peak hour, the San Juan Grade Road – Penzance Street route is faster than the Penzance Street – Jade Drive route with or without the recommended improvements. The comparison of travel times indicates the importance of providing the recommended improvements for the Existing Plus Project condition. Without the recommended improvements or implementation of the alternative mitigation, it is very likely that high school traffic will utilize the Penzance Street – Jade Street route to access the high school to avoid congestion at the San Juan Grade Road/Rogge Road intersection.

3.9 Project Access and Internal Circulation

The operations of the project accesses, internal site circulation, pedestrian and bicycle circulation on and near the project site are analyzed in this section.

Project Access Operations

As previously discussed, it is recommended that project access be modified. The access plan should be designed to provide acceptable operations at the Rogge Road intersections with the project driveways.

Internal Circulation and Layout

The project site plan depicts four parking areas – 1) staff parking is provided on the westerly boundary of the project site, 2) a drop-off/pick-up and visitor parking area is provided on the Rogge Road frontage on the west portion of the site, 3) the student area is provided on the Rogge Road frontage at the center of the site, and a special events parking area is located on the easterly boundary of the project site. All driveways will be accessed from Rogge Road under Phase 1 Conditions. A connection between the visitor/drop-off/pick-up area and the main student parking lot is suggested to allow for circulation between these areas. This would reduce the potential for the use of Rogge Road for internal site circulation.

The special events parking lot will have a single access to Rogge Road and will not connect to other parking lots on site. This parking lot will only be used during special events. Eighty-one parking spaces will be provided in this parking lot. Police traffic control at the driveway intersection with Rogge Road is recommended when the parking lot is used for special events because left turn channelization is not provided on Rogge Road at this driveway.

Drop-Off/Pick-Up Areas

All drop-off and pick-up activity should be performed on-site to avoid impacting the adjacent residential neighborhood and traffic operations on Rogge Road. The site plan includes one drop-off/pick-up area for students and a second area for buses. The bus drop off area for the high school would be accessed via the student parking lot driveway

and a separate exit driveway for the buses will be provided. The proposed plan will provide satisfactory access, circulation and parking for buses.

It is recommended that this drop-off/pick-up area be managed by high school staff during both the start of school and end of the school day, to minimize conflicts between students and vehicles.

The report *Traffic Operations and Safety at Schools: Recommended Guidelines*, by Scott A. Cooner, Kay Fitzpatrick, Mark D. Wooldridge, and Garry L. Ford of the Texas Transportation Institute, dated October 2003, is a recommended guide for layout of the drop-off/pick-up areas on both school campuses. This report includes recommended drop-off/pick-up area lengths utilized by various states. A copy of this report is included within this traffic report at Appendix T.

The driveway length for vehicle stacking and curb space required for drop-off/pick-up is dependent on the volume of drop-off/pick-up vehicles generated by the school. Based on the vehicle generation observed at the five high schools surveyed for the trip generation analysis, it is estimated that during the morning peak hour, 330 vehicles would drop-off students and during the mid-day peak hour, 204 vehicles would arrive to pick-up students at project buildout. For Phase 1, 198 vehicles are estimated to drop students off in the morning and 122 vehicles would arrive in the afternoon to pick up students. Note that the trip generation characteristics of Everett Alvarez High School approximate the average of the five high school survey sample. Therefore, the drop-off/pick-up estimates provided above approximate the conditions at Everett Alvarez High School factored to the planned High School No. 5 school enrolment of 1,500 students. A higher rate of walking and bicycling might be expected at the new high school compared to Everett Alvarez High School because the new high school will be located within the Santa Rita Union School District area, which is currently primarily served by Everett Alvarez High School. Therefore, the projections of drop-off/pick-up activity cited above represent worst-case (high side) estimates of drop-off/pick-up demand.

Several studies have developed curb drop-off/pick-up stacking capacity as a function of enrolment. Guidelines published by the South Carolina Department of Transportation and Texas Transportation Institute recommend a stacking area of 1,200 feet to 1,500 feet be provided for a school with an enrolment of between 800 and 2,500 students. Based on these statistics, a stacking area of 1,325 feet should be provided for buildout of the project and 1,220 feet for Phase 1 of the project. Providing these stacking areas would reduce the potential for drop-off and pick-up activity to occur off-site and reduce the potential for on-site vehicle queuing from the drop-off/pick-up area to extend to Rogge Road.

The width of Rogge Road along the project frontage will not allow for on-street parking or loading/unloading. Rogge Road along the project frontage should be marked for no stopping at anytime.

Summary of Project Access and Internal Circulation

The efficiency of traffic operations at the Rogge Road intersections with the project access driveways is dependent on the efficiency of traffic operations on-site. Vehicle queues that extend from the drop-off/pick-up area to Rogge Road would impact traffic operations at the Rogge Road intersection with the project driveway. Providing adequate stacking area for drop-off/pick-up operations on-site will ensure vehicle queues do not extend to Rogge Road from the loading area.

To reduce project impacts related to site access and internal circulation to insignificant levels, the school access plan should be modified to achieve the following:

1. Acceptable intersection operations (i.e., intersection levels of service) at all Rogge Road intersections with project driveways.
2. Separation of the physical routes for the various transportation modes (buses, cars, pedestrians/bicycles and service vehicles) as much as possible from each other.
3. Adequate loading/unloading space with an adequate driveway length for queuing vehicles on site.

3.10 Project Mitigation Measures

The following improvements are recommended to mitigate the impact of project impacts:

1. Signalize the San Juan Grade Road/Penzance Street intersection and add a left turn lane on the northbound San Juan Grade Road approach to Penzance Street.
2. Construct the following improvements to the San Juan Grade Road/Rogge Road intersections:
    a. Signalize.
    b. Modify the northbound San Juan Grade approach to provide one left turn lane, one northbound through lane and one right turn lane.
    c. Modify the southbound approach to provide one left turn lane and one shared through/right turn lane.
    d. Modify the westbound approach to provide one exclusive left turn lane and one shared left/through/right lane.
    e. Operate the eastbound and westbound approaches with "split" signal phasing.
3. As an alternative to the improvements described in recommendations 1 and 2 above, adjust the starting time of the high school to avoid the starting and ending times of the elementary and middle schools located on Rogge Road. Based on the current schedules for the elementary and middle schools, the high school should begin prior to 7:45 AM or after 8:30 AM.
4. Lengthen the left turn lane on the northbound Natividad Road approach to Rogge Road.
5. Redesign the access plan to achieve the following:
    a. Acceptable intersection operations (i.e., intersection levels of service) at all Rogge Road intersections with project driveways.

   b. Separation of the physical routes for the various transportation modes (buses, cars, pedestrians/bicycles and service vehicles) as much as possible from each other.
   c. Adequate loading/unloading space with an adequate driveway length for queuing vehicles on site.
6. A connection between the drop-off/pick-up area and the student parking area is suggested to limit the use of Rogge Road for internal trips.
7. Police traffic control should be provided at the Rogge Road driveway to the special events parking lot to expedite vehicles into and out of the driveway.
8. Construct the missing sections of sidewalk on the north side of Rogge Road, west of the project site.
9. Construct bike lanes on Rogge Road west of the project site. This would require prohibiting parking on Rogge Road from La Joya Elementary School to the project site. In addition, minor widening of Rogge Road would be required on the north side of Rogge Road at locations that have not been improved with curb gutter and sidewalk.
10. Widen the existing sidewalk located on the south side of Rogge Road between Jade Drive and the school property boundary to 10 feet.
11. Provide a crosswalk across Rogge Road at the Jade Drive intersection.
12. Provide a bicycle parking area on the high school site.
13. Rogge Road along the project frontage should be marked for no stopping at anytime.

4 CUMULATIVE WITH PROJECT BUILDOUT TRAFFIC CONDITIONS

This section describes the analysis results of the study intersection and roadway segment operations under Cumulative With Project Buildout traffic conditions with the study project developed. The cumulative condition traffic forecasts are primarily based on 2030 travel forecasts prepared for the supplemental transportation analysis for the proposed Sphere of Influence (SOI) Amendment and Annexation development north of East Boronda Road in the City of Salinas. The development area is commonly referred to as the Future Growth Area and consists of three distinct plan areas (West, Central and East). A specific plan for each of the areas has not been submitted to the City of Salinas for processing and adoption. The traffic analysis for the SOI Amendment and Annexation is documented in a 2007 study entitled *Salinas Sphere of Influence Amendment and Annexation Supplemental TIA* that was prepared in 2007. The traffic forecasts documented in that study used a horizon year of 2030 and include the full buildout of the Salinas Future Growth Area.

4.1 Cumulative Traffic Conditions – Road Network

Exhibit 10 shows the City of Salinas *Land Use and Circulation Policy Map*. The map shows the configuration of the planned long-range road network for the City of Salinas. In the vicinity of the project site, the extension of Russell Road, McKinnon Street and El Dorado Drive are key new road links that will affect traffic access opportunities for the project.

As previously stated, the traffic projections for the cumulative scenario are primarily based on 2030 travel forecasts prepared for the supplemental transportation analysis that was prepared for the Future Growth Area. The traffic forecasting for that study included several road improvements that are anticipated to be built by 2030. The traffic forecasts for the cumulative 2030 scenario assume implementation of the following road improvements:

1. Blanco Road widening to 4-lanes between Alisal Street and Davis Road.
2. Laurel Drive widening to 6-lanes between Natividad Road and Constitution Boulevard with left turn channelization east of Constitution Boulevard.
3. Davis Road widening to 4-lanes between Market Street and Reservation Road.
4. Reservation Road widening to 4-lanes between Blanco Road and Davis Road.
5. San Juan Road widening to 4-lanes between Boronda Road and Rogge Road.
6. New interchange at US 101 and Crazy Horse Canyon Road.
7. New US 101/Harrison Road diamond interchange with local roadway improvements.
8. Eastside Road between Intergarrison Road and Giggling Road.
9. Intergarrision Road widening to 4-lanes between Reservation Road and Eastside Road.
10. Sanborn Road widening to 6-lanes between John Street and Abbott Street.
11. General Jim Moore Boulevard widening to 4-lanes between McClure Road and South Boundary Road. This improvement has been completed.

12. Alisal Street widening to 4-lanes between Williams Road and Alisal Road.
13. Extension of Russell Road as a 4-lane arterial between San Juan Grade Road and Old Stage Road.
14. Extension of McKinnon Street as a 2-lane collector between Boronda Road and Russell Road.
15. Extension of El Dorado Drive as a 2-lane collector between Boronda Road and Russell Road.
16. Extension of Independence Boulevard as a 2-lane arterial between Boronda Road and Old Stage Road.
17. Extension of Constitution Boulevard as a 2-lane arterial between Boronda Road and Old Stage Road.
18. Extension of Sanborn Road as a 2-lane arterial between Boronda Road and Old Stage Road.
19. Boronda Road widening to 6-lane arterial between San Juan Grade Road and Williams Road.
20. Natividad Road widening to a 4-lane arterial between Boronda Road and Rogge Road.
21. Addition of two east-west 2-lane collectors between San Juan Grade Road and Williams Road.

Road network improvements that are included in the Salinas traffic Improvement Program that were not included in traffic forecast modeling for the Future Growth Area traffic study and are not considered to be included in the cumulative condition forecasts for this study are as follows:

1. Prunedale Bypass
2. Western Bypass
3. Eastern Bypass
4. US 101 widening through Salinas
5. Alisal Road extension
6. Moffett Street extension
7. Main Street widening to 6-lanes between Bernal Street and Market Street
8. Roadway extensions of Bernal Street and Constitution Boulevard into Carr Lake
9. Alvin Drive extension as a 4-lane arterial to include Westridge Parkway extension
10. US 101/Laurel interchange widening to 6-lanes between Davis Road and Adams street
11. Williams Road widening to 4-lanes between Freedom Parkway and Boronda Road
12. Espinosa Road widening to 4-lanes between US 101 and SR 183
13. Blanco Road extension as a 4-lane arterial between Reservation Road and Imjin Road

4.2 Cumulative Traffic Volumes

The 2030 cumulative condition volumes are primarily based upon the 2030 travel forecasts estimated using the association of Monterey Bay Area Governments (AMBAG) Regional Travel Forecasting Model that are documented in the SOI Supplemental TIA.

The forecasts in the SOI Supplemental TIA were supplemented with travel forecasts developed for the City of Salinas General Plan Circulation Study, the Rogge Road High School Traffic Analysis Report prepared in 2006 and the Creekbridge II Transportation Planning Report prepared in 2008. Traffic volumes consistent with the average daily traffic volumes (ADT's) developed from the SOI Supplemental TIA and other referenced reports were used to estimate intersection turning volumes at the study intersections.

4.3 Project Description – Buildout

At buildout, the capacity of the school would be 1,500 students. Access to the school as described for Phase 1 would be maintained with access provided via five driveways to Rogge Road. The easterly most driveway would only be utilized during special school events.

4.4 Project Trip Generation

Exhibit 6B contains the trip generation estimate for buildout of the study project. This trip generation estimate is a combination of the previous trip generation under Phase 1, plus the additional trips that would be generated by the additional students originating in the Future Growth Area.

The high school at full buildout would generate 2,768 trips per day, with 825 trips (495 in, 330 out) during the AM peak hour, 510 trips (204 in, 306 out) during the midday peak hour and 270 trips (119 in, 151 out) during the PM street peak hour.

4.5 Project Trip Distribution and Assignment

A project trip assignment for the buildout of the school was developed that included Phase 1 trips and the trips that will be generated by the enrollment that would be generated within the Future Growth Area. The Phase 1 project trip distribution origins remain unchanged from the Existing Plus Project Phase 1 analysis previously described. However, the assignment of Phase 1 trips was revised to account for the new roadways that would be constructed in conjunction with the development of the Future Growth Area. Exhibit 11 shows the trip distribution pattern for the high school trips that would be generated within the Future Growth Area.

The assignment of AM, Midday and PM peak hour high school trips to the study intersections for the buildout condition is shown on Exhibits 12A, 12B and 12C, respectively.

The construction of the Future Growth Area road network that includes the extensions of Russell Road, McKinnon Street and El Dorado Drive would alter travel patterns for motorists traveling to and from the school. For the buildout condition, the arrival/distribution pattern for the school shifts from a predominate westerly orientation under Phase 1 to a predominant easterly orientation with buildout. Under the Phase 1 scenario, 80% of the high school trips were estimated to arrive and depart to and from the west. With buildout, 78% of the high school trips were estimated to arrive and depart to and from the east.

4.6 Cumulative With Project Buildout Traffic Conditions - Intersection Operations

Cumulative With Project Buildout morning, midday, and evening peak hour turning volumes are illustrated on Exhibits 13A, 13B, and 13C. Exhibit 5A tabulates corresponding morning, midday, and evening peak hour levels of service, the details of which are presented in Appendix C through N.

Cumulative conditions were evaluated based on existing intersection geometrics and traffic control. The exception was the San Juan Grade Road/Russell Road extension. Because this Russell Road will be extended to the east, which will add a fourth leg to the intersection, the initial intersection level of service calculation was based on the intersection lane configuration documented in the *City of Salinas Transportation Improvement Program, 2010 Update*.

Subsequent to the initial intersection calculation, intersection geometrics documented in the *City of Salinas Transportation Improvement Program, 2010 Update* were analyzed.

Based on existing intersection geometrics, the following five intersections would not operate at acceptable levels of service under Cumulative With Project Buildout Conditions:

1. Natividad Road/Rogge Road
2. Natividad Road/Boronda Road
3. San Juan Grade Road/Boronda Road
4. San Juan Grade Road/Penzance Street
5. San Juan Grade Road/Rogge Road

In addition, the San Juan Grade Road/Russell Road intersection will not operate at a satisfactory level of service with the intersection improvements described in the Salinas TIP. The intersection of Rogge Road and project driveway #1 will also not operate at a satisfactory level of service during the AM peak hour under cumulative conditions.

The Rogge Road/El Dorado Drive intersection would operate at LOS D during the AM peak hour and LOS C during the midday and PM peak hours with signal traffic control and the following lane configuration:

- Westbound – one left turn lane and one through lane,
- Eastbound – one through lane and one right turn lane,
- Northbound – one left turn lane and one right turn lane.

A discussion of the traffic operations for each intersection with operational deficiencies under Cumulative With Project Buildout Conditions is provided below.

Intersection #1 – Natividad Road/Rogge Road

This intersection is currently stop controlled on the eastbound Rogge Road approach to Natividad Road. The eastbound approach is projected to operate at LOS F during the AM and Midday peak hours.

Signalization of the intersection is warranted under Cumulative With Project Buildout conditions. In addition, widening of Natividad Road between Boronda Road and Rogge Road to a four-lane road is planned in conjunction with the development of the Future Growth Area. It is recommended that the eastbound right turn lane be designed as a free right turn movement that becomes the second southbound right turn lane on Natividad Road south of Rogge Road. With these improvements the intersection would operate at LOS C during the AM peak hour and LOS B during the Midday and PM peak hours.

Intersection #2 – Natividad Road/Boronda Road

The Natividad Road/Boronda Road intersection would operate at LOS F during the AM, Midday and PM peak hours under Cumulative With Project Buildout conditions with existing geometrics. Boronda Road and Natividad Road are planned for widening in conjunction with the development of the Future Growth Area. The Salinas TIP indicates that the Natividad Road/Boronda Road intersection approaches will be widened to provide the following intersection design:

o Northbound: Two left turn lanes, two through lanes and one right turn lane.
o Southbound: Two left turn lanes, two through lanes and one right turn lane.
o Eastbound: Two left turn lanes, three through lanes and one right turn lane.
o Westbound: Two left turn lanes, three through lanes and one right turn lane.

With the intersection improved as described above, the intersection would operate at LOS E during the Midday peak hours. To achieve acceptable operations, a fourth westbound through lane would be required. Alternatively, the traffic forecasts do not reflect the addition of the Alvin Drive extension over Highway 101. This improvement would divert traffic from Boronda Road and improve operations at the Natividad Road/Boronda Road intersection.

Intersection #3 – San Juan Grade Road/Boronda Road

The San Juan Grade Road/Boronda Road intersection would operate at LOS F during the Midday and PM peak hours under Cumulative With Project Buildout conditions with existing geometrics. Boronda Road and San Juan Grade Road are planned for widening in conjunction with the development of the Future Growth Area. The north, south and east legs of the intersection have been widened to their ultimate widths as described in the Salinas TIP. The Salinas TIP indicates that the west leg will be widened to provide 2 left turn lanes, 3 through lanes and one right turn lane. With the intersection improved as planned in the Salinas TIP, the intersection would operate at LOS D during the AM and PM peak hours, but at an unacceptable LOS E during the Midday peak hour. To achieve an acceptable level of service, the northbound San Juan Grade right turn lane would need to be continued onto eastbound Boronda Road as a free right turn and the southbound

right turn operated with an overlap phase. Provision of the third eastbound through lane as well as the northbound to eastbound free right turn is problematic given that the existing development located in the southwest and southeast quadrant of the intersection.

The analysis road network that was modeled for the Cumulative With Project Buildout Condition does not include the Alvin Street extension. The extension of Alvin Street over U.S. 101 to N. Davis Street will reduce traffic on Boronda Road. This improvement would improve traffic operations on Boronda Road and at the San Juan Grade Road/Boronda Road intersection.

Intersection #4 – San Juan Grade Road/Russell Road

This intersection would operate at LOS E during the AM and mid-day peak hours under cumulative conditions. The improvements described in the Salinas TIP for the San Juan Grade Road/Russell Road intersection provide the following lane configuration on the intersection approaches:

o Northbound: Two left turn lanes, one through lane and one shared/right turn lane.
o Southbound: Two left turn lanes, two through lanes and one right turn lane.
o Eastbound: Two left turn lanes, two through lanes and one right turn lane.
o Westbound: Two left turn lanes, two through lanes and one right turn lane.

Providing a right turn lane operated with an overlap phase on the northbound San Juan Grade approach would achieve LOS D operations during the AM peak hour and LOS C during the mid-day peak hours. The northbound approach would be configured to provide two left turn lanes, two through lanes and one right turn lane.

Intersection #5 – San Juan Grade Road/Penzance Street

The westbound Penzance Street approach to San Juan Grade Road would operate at LOS F during the AM peak hour. With signalization and the addition of a northbound left turn lane, the intersection would operate at LOS B during the AM peak hour under cumulative conditions. Intersection levels of service with the recommended improvements are summarized on Exhibit 5A.

Intersection #6 – San Juan Grade Road/Rogge Road

As an all-way stop controlled intersection, the San Juan Grade Road/Rogge Road intersection would operate at LOS E during the AM peak hour under cumulative conditions. The peak hour signal warrant is met for the AM peak hour condition. Signalization of the intersection and modification of the intersection as described under Existing Plus Project Phase 1 conditions would improve intersection operations to LOS C during the AM peak hour. The following improvements would improve the operation of the intersection to acceptable levels:

1. Add a traffic signal.
2. Modify the northbound San Juan Grade approach to provide one left turn lane, one northbound through lane and one right turn lane.

3. Modify the southbound approach to provide one left turn lane and one shared through/right turn lane.
4. Modify the westbound approach to provide one exclusive left turn lane and one shared left/through/right lane.
5. Operate the eastbound and westbound approaches with "split "signal phasing.

Intersection #11 – Rogge Road/High School Driveway #1: This intersection would operate at an overall LOS F and the northbound driveway would operate at LOS F during the AM peak hour. This is an unacceptable operating condition.

As with Existing Plus Project Phase 1 Conditions, signalization of the Rogge Road/Project Driveway #1 intersection is not recommended for Buildout Conditions. To improve driveway operations, the access plan for the school be modified as described for the Existing Plus Project Condition.

4.7 Traffic Impact Fees

The City of Salinas administers a traffic impact fee to fund planned improvements to the City's road network. The improvements funded by the traffic impact fee include the following improvements in the immediate vicinity of the project:

TIP 8 – Russell Road Extension east of San Juan Grade Road
TIP 9 – Natividad Road widening between Boronda Road and Rogge Road
TIP 10 – El Dorado Drive Extension between Boronda Road and Rogge Road
TIP 11 – McKinnon Street Extension between Boronda Road and Russell Road
TIP 12- Russell Road widening between Main Street and San Juan Grade Road
TIP 13- San Juan Grade widening between Boronda Road and Rogge Road
TIP 49 – San Juan Grade/Russell Road intersection improvements
TIP 50 – San Juan Grade/Boronda Road intersection improvements
TIP 51 – Boronda Road/Natividad Road intersection improvement
TIP 58 – Natividad Road / Russell Road intersection improvements

Signalization of the Natividad Road/Rogge Road intersection is not included in the traffic impact fee program and the project should provide a pro-rata contribution based on the percentage of trips at the intersection that are generated by the new high school. The right turn lane recommended for the northbound San Juan Grade approach to Russell Road for the Buildout Condition should be added to the Salinas Traffic Improvement Program. Signalization of the San Juan Grade/Penzance and San Juan Grade/Rogge Road intersections were recommended to mitigate project impacts under the Existing Plus Project Phase 1 scenario. The results of the analysis also indicate that the Alvin Street extension is required for the long-term buildout development condition. The Alvin Street extension will divert traffic from Boronda Road resulting in better operations than forecast in this study.

The improvements listed above will mitigate cumulative project impacts. With the specific exception of improvements recommended for the Natividad Road/Rogge Road, San Juan Grade Road/Penzance Street and San Juan Grade Road/Rogge Road

intersections, the City of Salinas is collecting fees for the construction of the improvements described above via the Traffic Impact Fee program. New development, including new development in the Future Growth Area, will pay traffic impact fees to the City of Salinas.

5 ALTERNATIVE SITE PLANS

Two alternative site plans for the high school are displayed on Exhibits 14A and 14B. These site plans maintain access to the project from Rogge Road, but relocate the driveways to the easterly portion of the project site. Peak hour traffic volume projections for the Project Phase 1 and Buildout Conditions are shown on Exhibits 15A and 15B and level of service calculations for the Rogge Road intersections with the project driveways are shown on Exhibit 16.

Both alternative site plans locate an access driveway adjacent to the easterly property boundary. In the event that site plan Alternative 1 or Alternative 2 is adopted and a collector street is ultimately constructed directly adjacent to the school's eastern property boundary, it is recommended that access to the easterly high school driveway be relocated from Rogge Road to the new north-south collector street. This would leave one access driveway connection to Rogge Road and one access driveway to the north-south collector. Overall, this configuration, if achievable, would reduce high school related traffic on Rogge Road as it is expected that when the Future Growth Area develops high school traffic will access the site from the south and east to a greater degree than during Phase 1 of the project. Alternatively, access could also be provided via a connection to the Russell Road extension.

By locating the driveways to the easterly portion of the site, vehicular access is separated from the primary pedestrian and bicycle activity, which will be primarily to and from the west, at least for Phase 1. The plans for the project alternatives do not show a shared path along the project frontage on Rogge Road. This should be included in any alternative plan for the project. In addition, left turn channelization on Rogge Road at the project driveways is not show on the alternative plans. Left turn channelization should be included on Rogge Road at the project driveways for the project alternatives.

The access plan for Site Plan Alternative 1 is very similar to the access plan for the preferred project except the number of driveways to Rogge Road have been consolidated from five to two and an internal connection is provided between the student parking lot and the visitor parking lot. Both of these changes are positive improvements to the access plan. However, with access Alternative 1, student parking lot access would be primarily limited to the westerly driveway (Driveway #1) and visitor/staff/drop-off/pick-off access would be primarily concentrated at the easterly driveway (Driveway #2). Because of this, intersection operations at the Rogge Road/Driveway #2 intersection are unacceptable during the AM peak hour for both the Phase 1 and Buildout Conditions. Given the long driveways provided on-site between Rogge Road and the drop-off/pick-up area, signalization of the Rogge Road/Driveway #2 intersection is recommended for the Project Phase 1 and Buildout Conditions. In addition, a free right turn movement from northbound Driveway 2 to eastbound Rogge Road would be required for the buildout condition, assuming access is not reconfigured to a new north-south collector street built adjacent to the school's eastern property line. Both driveway approaches to Rogge Road should be designed to provide separate left and right turn lanes. These improvements would improve traffic operations to acceptable levels.

The access plan for Site Plan Alternative 2 provides two driveways to Rogge Road and an internal circulation plan that would balance turning volumes at the two driveways. For this

reason, acceptable driveway operations are projected for the Phase 1 access plan for Alternative 2. Left turn channelization would be required on Rogge Road at both intersection driveways and both driveways should be designed to provide separate left and right turn lanes on the approach to Rogge Road.

Under Buildout Conditions, signalization of the easterly most driveway is recommended and a free right turn should be provided from the northbound driveway approach to eastbound Rogge Road at the same driveway. This assumes access is not relocated to a new north-south collector street built on the school's eastern property boundary.

In terms of access from Rogge Road, Site Plan Alternative 2 provides a better access plan than Alternative 1 because the internal connections between parking areas on-site will allow for the distribution of inbound and outbound traffic between the two driveways. In terms of access from Rogge Road, Alternative 2 is at least equal if not better than the project plan shown on Exhibit 2A.

Both Alternatives locate the parent loading area to the interior of the site, which will provide on-site queuing area on the approach to the drop-off/pick-up area and on the exiting approach to Rogge Road that is not provided with the project plan. With regards to on-site vehicle queuing for parent loading, Alternatives 1 and 2 are preferred over the project plan shown on Exhibit 2A. However, the area provided for drop-offs is not adequate for Alternatives 1 and 2.

6 RECOMMENDATIONS

The following sections summarize the recommended improvements within this report.

6.1 Recommended Improvements Under Existing Conditions

The following improvement is recommended for Existing Conditions:

1. The left turn lane on northbound Natividad Road at Rogge Road should be lengthened to provide for vehicle deceleration and vehicle storage.

6.2 Recommended Improvements Under Existing Plus Project Phase 1 Conditions

The following improvements are recommended under Existing Plus Project Phase 1 conditions:

2. Signalize the San Juan Grade Road/Penzance Street intersection and add a left turn lane on the northbound San Juan Grade Road approach to Penzance Street.
3. Construct the following improvements to the San Juan Grade Road/Rogge Road intersections:
    a. Signalize
    b. Modify the northbound San Juan Grade approach to provide one left turn lane, one northbound through lane and one right turn lane.
    c. Modify the southbound approach to provide on left turn lane and one shared through/right turn lane.
    d. Modify the westbound approach to provide one exclusive left turn lane and one shared left/through/right lane.
    e. Operate the eastbound and westbound approaches with “split” signal phasing.
4. As an alternative to the improvements described in recommendations 1 and 2 above, adjust the starting time of the high school to avoid the starting and ending times of the elementary and middle schools located on Rogge Road.
5. Lengthen the left turn lane on the northbound Natividad Road approach to Rogge Road.
6. Redesign the access plan to achieve the following:
    a. Acceptable intersection operations (i.e., intersection levels of service) at all Rogge Road intersections with project driveways.
    b. Separation of the physical routes for the various transportation modes (buses, cars, pedestrians/bicycles and service vehicles) as much as possible from each other.
    c. Adequate loading/unloading space with an adequate driveway length for queuing vehicles on site.
7. A connection between the parent drop-off/pick-up area and student parking area is suggested to limit the use of Rogge Road for internal trips.

8. Police traffic control should be provided at the Rogge Road driveway to the special events parking lot to expedite vehicles into and out of the driveway.
9. Construct the missing sections of sidewalk on the north side of Rogge Road, west of the project site.
10. Construct bike lanes on Rogge Road west of the project site. This would require prohibiting parking on Rogge Road from La Joya Elementary School to the project site. In addition, minor widening of Rogge Road would be required on the north side of Rogge Road at locations that have not been improved with curb gutter and sidewalk.
11. Widen the existing sidewalk located on the south side of Rogge Road between Jade Drive and the school property boundary to 10 feet.
12. Provide a crosswalk across Rogge Road at the Jade Drive intersection.
13. Provide a bicycle parking area on the high school site.
14. Rogge Road along the project frontage should be marked for no stopping at anytime.

6.3 Recommended Improvements Under Cumulative With Project Buildout Conditions

The following improvements are recommended under Cumulative With Project Buildout conditions:

1. Signalize the Natividad Road/Rogge Road intersection and widen Natividad Road between Boronda Road and Rogge Road to a four-lane road as planned in conjunction with the development of the Future Growth Area. The eastbound right turn lane from Rogge Road to southbound Natividad Road should be designed as a free right turn movement that becomes the second southbound right turn lane on Natividad Road south of Rogge Road.
2. Widen the Natividad Road/Boronda Road intersection as described in the Salinas Transportation Improvement Program as follows:
   o Northbound: Two left turn lanes, two through lanes and one right turn lane.
   o Southbound: Two left turn lanes, two through lanes and one right turn lane.
   o Eastbound: Two left turn lanes, three through lanes and one right turn lane.
   o Westbound: Two left turn lanes, three through lanes and one right turn lane.
   In addition to these improvements, a fourth westbound through lane would be required. In lieu of the fourth westbound through lane, construct the Alvin Street extension to Westridge Parkway.
3. Widen the west leg of the San Juan Grade Road/Boronda Road intersection as described in the Salinas Transportation Improvement Program to provide two left turn lanes, three through lanes and one right turn lane. Also, convert the northbound San Juan Grade right turn lane to a free right turn lane. In lieu of these improvements, construct the Alvin Street extension to Westridge Parkway.
4. In addition to the improvements described in the Salinas TIP for the San Juan Grade Road/Russell Road intersection, a right turn lane should be added on the northbound San Juan Grade Road approach to Russell Road and the right turn movement should be operated with a right turn overlap phase.

5. Signalize the San Juan Grade Road/Penzance Street intersection and add a left turn lane on the northbound San Juan Grade Road approach to Penzance Street.
6. Construct the following improvements to the San Juan Grade Road/Rogge Road intersections:
    a. Signalize
    b. Modify the northbound San Juan Grade approach to provide one left turn lane, one northbound through lane and one right turn lane.
    c. Modify the southbound approach to provide on left turn lane and one shared through/right turn lane.
    d. Modify the westbound approach to provide one exclusive left turn lane and one shared left/through/right lane.
    e. Operate the eastbound and westbound approaches with "split" signal phasing.
7. If a collector street is located on the immediate boundary of the school property, access to the special events parking area should be relocated to the collector street.
8. The project access should be modified as described for Existing Plus Project Conditions.

The right turn lane recommended for the northbound San Juan Grade approach to Russell Road for the Buildout Condition should be added to the Salinas Traffic Improvement Program. The project should provide a pro-rata contribution to the signalization of the Natividad Road/Rogge Road intersection (Improvement #1). Signalization of the San Juan Grade/Penzance and San Juan Grade/Rogge Road intersections were recommended to mitigate project impacts under the Existing Plus Project Phase 1 scenario.

APPENDIX A
LEVEL OF SERVICE DESCRIPTIONS

APPENDIX A1

LEVEL OF SERVICE (LOS) DESCRIPTION
SIGNALIZED INTERSECTIONS

The capacity of an urban street is related primarily to the signal timing and the geometric characteristics of the facility as well as to the composition of traffic on the facility. Geometrics are a fixed characteristic of a facility. Thus, while traffic composition may vary somewhat over time, the capacity of a facility is generally a stable value that can be significantly improved only by initiating geometric improvements. A traffic signal essentially allocates time among conflicting traffic movements that seek to use the same space. The way in which time is allocated significantly affects the operation and the capacity of the intersection and its approaches.

The methodology for signalized intersection is designed to consider individual intersection approaches and individual lane groups within approaches. A lane group consists of one or more lanes on an intersection approach. The outputs from application of the method described in the HCM 2000 are reported on the basis of each lane. For a given lane group at a signalized intersection, three indications are displayed: green, yellow and red. The red indication may include a short period during which all indications are red, referred to as an all-red interval and the yellow indication forms the change and clearance interval between two green phases.

The methodology for analyzing the capacity and level of service must consider a wide variety of prevailing conditions, including the amount and distribution of traffic movements, traffic composition, geometric characteristics, and details of intersection signalization. The methodology addresses the capacity, LOS, and other performance measures for lane groups and the intersection approaches and the LOS for the intersection as a whole.

Capacity is evaluated in terms of the ratio of demand flow rate to capacity (v/c ratio), whereas LOS is evaluated on the basis of control delay per vehicle (in seconds per vehicle). The methodology does not take into account the potential impact of downstream congestion on intersection operation, nor does the methodology detect and adjust for the impacts of turn-pocket overflows on through traffic and intersection operation.

LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS
(Reference Highway Capacity Manual 2000)

Level of Service	Control Delay (seconds / vehicle)
A	**<10**
B	**>10 - 20**
C	**>20 - 35**
D	**>35 - 55**
E	**>55 - 80**
F	**>80**

APPENDIX A2

LEVEL OF SERVICE (LOS) DESCRIPTION
UNSIGNALIZED INTERSECTIONS WITH ALL-WAY STOP CONTROL (AWSC)

AWSC intersections require every vehicle to stop at the intersection before proceeding. Since each driver must stop, the judgement as to whether to proceed into the intersection is a function of traffic conditions on the other approaches. While giving priority to the driver on the right is a recognized rule in some areas, it is not a good descriptor of actual intersection operations. What happens is the development of a consensus of right-of-way that alternates between the drivers on the intersection approaches, a consensus that depends primarily on the intersection geometry and the arrival patterns at the stop line.

If no traffic is present on the other approaches, a driver can proceed immediately after the stop is made. If there is traffic on one or more of the other approaches, a driver proceeds only after determining that there are no vehicles currently in the intersection and that it is the driver's turn to proceed. Since no traffic signal controls the stream movement or allocates the right-of-way to each conflicting stream, the rate of departure is controlled by the interaction between the traffic streams themselves.

For AWSC intersections, the average control delay (in seconds per vehicle) is used as the primary measure of performance. Control delay is the increased time of travel for a vehicle approaching and passing through an AWSC intersection, compared with a free-flow vehicle if it were not required to slow down or stop at the intersection.

The criteria for AWSC intersections have different threshold values than do those for signalized intersections, primarily because drivers expect different levels of performance from different kinds of traffic control devices (i.e traffic signals, two way stop or all way stop, etc.). The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection and a higher level of control delay is acceptable at a signalized intersection for the same LOS.

For AWSC analysis using the HCM 2000 method, the LOS shown reflects the weighted average of the delay on each of the approaches.

LEVEL OF SERVICE (LOS) CRITERIA FOR AWSC INTERSECTIONS
(Reference Highway Capacity Manual 2000)

Level of Service	Control Delay (seconds / vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

APPENDIX A3

LEVEL OF SERVICE (LOS) DESCRIPTION
UNSIGNALIZED INTERSECTIONS WITH TWO-WAY STOP CONTROL (TWSC)

TWSC intersections are widely used and stop signs are used to control vehicle movements at such intersections. At TWSC intersections, the stop-controlled approaches are referred to as the minor street approaches; they can be either public streets or private driveways. The intersection approaches that are not controlled by stop signs are referred to as the major street approaches. A three-leg intersection is considered to be a standard type of TWSC intersection if the single minor street approach (i.e. the stem of the T configuration) is controlled by a stop sign. Three-leg intersections where two of the three approaches are controlled by stop signs are a special form of unsignalized intersection control.

At TWSC intersections, drivers on the controlled approaches are required to select gaps in the major street flow through which to execute crossing or turning maneuvers on the basis of judgement. In the presence of a queue, each driver on the controlled approach must use some time to move into the front-of-queue position and prepare to evaluate gaps in the major street flow. Capacity analysis at TWSC intersections depends on a clear description and understanding of the interaction of drivers on the minor or stop-controlled approach with drivers on the major street. Both gap acceptance and empirical models have been developed to describe this interaction.

Thus, the capacity of the controlled legs is based on three factors:

- the distribution of gaps in the major street traffic stream,;
- driver judgement in selecting gaps through which to execute the desired maneuvers; and
- the follow-up time required by each driver in a queue.

The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incident, control, traffic or geometric delay. Average control delay for any particular minor movement is a function of the capacity of the approach and the degree of saturation and referred to as level of service.

LEVEL OF SERVICE (LOS) CRITERIA FOR TWSC INTERSECTIONS
(Reference Highway Capacity Manual 2000)

Level of Service	Control Delay (seconds / vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

APPENDIX B
INTERSECTION TURNING MOVEMENT VOLUME COUNT DATES

SALINAS #5 HIGH SCHOOL TRAFFIC ANALYSIS
INTERSECTION TURNING MOVEMENT VOLUME COUNT DATE

	Intersection		AM Peak Period	Midday Peak Period	PM Peak Period
	North-South Street	East-West Street			
1	Natividad Road	Rogge Road	Wed, March 2, 2011	Wed, March 2, 2011	Wed, March 2, 2011
2	Natividad Road	Boronda Road	Wed, May 11, 2011	Wed, March 2, 2011	Wed, May 11, 2011
3	San Juan Grade Road	Boronda Road	Thur, May 12, 2011	Thur, March 3, 2011	Thur, May 12, 2011
4	San Juan Grade Road	Russell Road	Tue, March 1, 2011	Tue, March 1, 2011	Tue, March 1, 2011
5	San Juan Grade Road	Penzance Street	Tue, April 26, 2011	Tue, April 26, 2011	Tue, April 26, 2011
6	San Juan Grade Road	Rogge Road	Tue, March 1, 2011	Tue, March 1, 2011	Tue, March 1, 2011
7	Kelton Drive	Rogge Road	Tue, May 3, 2011	Tue, May 3, 2011	Tue, May 3, 2011
8	Bollenbacher Drive	Rogge Road	Wed, April 27, 2011	Wed, April 27, 2011	Wed, April 27, 2011
9	Jasper Way	Rogge Road	Thur, April 28, 2011	Thur, April 28, 2011	Thur, April 28, 2011
10	Jade Drive	Rogge Road	Thur, April 28, 2011	Thur, April 28, 2011	Thur, April 28, 2011

APPENDIX C
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

Natividad Road/Rogge Road

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

Intersection #1 Natividad / Rogge

Average Delay (sec/veh): 7.5 Worst Case Level Of Service: B[15.0]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0 1	0	0	0 0	0	1 0	1 0	0	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	235	172	0	0	139	34	49	0	270	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:	235	172	0	0	139	34	49	0	270	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:	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
PHF Volume:	305	223	0	0	181	44	64	0	351	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	305	223	0	0	181	44	64	0	351	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	225	xxxx	xxxxx	xxxx	xxxx	xxxxx	1036	xxxx	203	xxxx	xxxx	xxxxx
Potent Cap.:	1344	xxxx	xxxxx	xxxx	xxxx	xxxxx	255	xxxx	836	xxxx	xxxx	xxxxx
Move Cap.:	1344	xxxx	xxxxx	xxxx	xxxx	xxxxx	211	xxxx	836	xxxx	xxxx	xxxxx
Volume/Cap:	0.23	xxxx	xxxx	xxxx	xxxx	xxxx	0.30	xxxx	0.42	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.9	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.2	xxxx	2.1	xxxx	xxxx	xxxxx
Control Del:	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	29.3	xxxx	12.4	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	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:	xxxxxx			xxxxxx			15.0			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 #1 Natividad / Rogge

Average Delay (sec/veh): 5.8 Worst Case Level Of Service: B[14.8]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0 1	0	0	0 0	0	1 0	1 0	0	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	198	313	0	0	172	48	37	0	245	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:	198	313	0	0	172	48	37	0	245	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:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	248	391	0	0	215	60	46	0	306	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	248	391	0	0	215	60	46	0	306	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.3	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	275	xxxx	xxxxx	xxxx	xxxx	xxxxx	1131	xxxx	245	xxxx	xxxx	xxxxx
Potent Cap.:	1271	xxxx	xxxxx	xxxx	xxxx	xxxxx	222	xxxx	786	xxxx	xxxx	xxxxx
Move Cap.:	1271	xxxx	xxxxx	xxxx	xxxx	xxxxx	189	xxxx	786	xxxx	xxxx	xxxxx
Volume/Cap:	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	0.25	xxxx	0.39	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.7	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.9	xxxx	1.9	xxxx	xxxx	xxxxx
Control Del:	8.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	30.2	xxxx	12.5	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	D	*	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:	xxxxxx			xxxxxx			14.8			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 #1 Natividad / Rogge

Average Delay (sec/veh): 4.3 Worst Case Level Of Service: B[11.7]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0	1 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	144	138	0	0	219	50	27	0	135	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:	144	138	0	0	219	50	27	0	135	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	160	153	0	0	243	56	30	0	150	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	160	153	0	0	243	56	30	0	150	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	299	xxxx	xxxxx	xxxx	xxxx	xxxxx	744	xxxx	271	xxxx	xxxx	xxxxx
Potent Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	383	xxxx	770	xxxx	xxxx	xxxxx
Move Cap.:	1262	xxxx	xxxxx	xxxx	xxxx	xxxxx	346	xxxx	770	xxxx	xxxx	xxxxx
Volume/Cap:	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	0.19	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	0.7	xxxx	xxxx	xxxxx
Control Del:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	16.4	xxxx	10.8	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	C	*	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:	xxxxxx			xxxxxx			11.7			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 #1 Natividad / Rogge

Average Delay (sec/veh): 10.1 Worst Case Level Of Service: C[20.8]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0	1 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	289	172	0	0	139	40	53	0	306	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:	289	172	0	0	139	40	53	0	306	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:	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
PHF Volume:	407	242	0	0	196	56	75	0	431	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	407	242	0	0	196	56	75	0	431	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	252	xxxx	xxxxx	xxxx	xxxx	xxxxx	1280	xxxx	224	xxxx	xxxx	xxxxx
Potent Cap.:	1313	xxxx	xxxxx	xxxx	xxxx	xxxxx	182	xxxx	813	xxxx	xxxx	xxxxx
Move Cap.:	1313	xxxx	xxxxx	xxxx	xxxx	xxxxx	138	xxxx	813	xxxx	xxxx	xxxxx
Volume/Cap:	0.31	xxxx	xxxx	xxxx	xxxx	xxxx	0.54	xxxx	0.53	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	1.3	xxxx	xxxxx	xxxx	xxxx	xxxxx	2.6	xxxx	3.2	xxxx	xxxx	xxxxx
Control Del:	9.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	58.0	xxxx	14.3	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	F	*	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:	xxxxxx			xxxxxx			20.8			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

Intersection #1 Natividad / Rogge

Average Delay (sec/veh): 6.7 Worst Case Level Of Service: C[16.5]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0 1	0	0	0 0	0	1 0	1 0	0	0 1	0 0	0	0 0
Volume Module:												
Base Vol:	220	313	0	0	172	50	41	0	277	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:	220	313	0	0	172	50	41	0	277	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:	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
PHF Volume:	282	401	0	0	221	64	53	0	355	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	282	401	0	0	221	64	53	0	355	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.3	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	285	xxxx	xxxxx	xxxx	xxxx	xxxxx	1218	xxxx	253	xxxx	xxxx	xxxxx
Potent Cap.:	1261	xxxx	xxxxx	xxxx	xxxx	xxxxx	197	xxxx	779	xxxx	xxxx	xxxxx
Move Cap.:	1261	xxxx	xxxxx	xxxx	xxxx	xxxxx	163	xxxx	779	xxxx	xxxx	xxxxx
Volume/Cap:	0.22	xxxx	xxxx	xxxx	xxxx	xxxx	0.32	xxxx	0.46	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.9	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.3	xxxx	2.4	xxxx	xxxx	xxxxx
Control Del:	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	37.3	xxxx	13.4	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	E	*	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:	xxxxxx			xxxxxx			16.5			xxxxxx		
ApproachLOS:	*			*			C			*		

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

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

Intersection #1 Natividad / Rogge

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: B[12.3]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0 1 0 0			0 0 0 1 0			1 0 0 0 1			0 0 0 0 0		
Volume Module:												
Base Vol:	157	138	0	0	219	51	29	0	151	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:	157	138	0	0	219	51	29	0	151	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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	183	160	0	0	255	59	34	0	176	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	183	160	0	0	255	59	34	0	176	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	314	xxxx	xxxxx	xxxx	xxxx	xxxxx	810	xxxx	284	xxxx	xxxx	xxxxx
Potent Cap.:	1246	xxxx	xxxxx	xxxx	xxxx	xxxxx	351	xxxx	757	xxxx	xxxx	xxxxx
Move Cap.:	1246	xxxx	xxxxx	xxxx	xxxx	xxxxx	311	xxxx	757	xxxx	xxxx	xxxxx
Volume/Cap:	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	0.11	xxxx	0.23	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	0.9	xxxx	xxxx	xxxxx
Control Del:	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.0	xxxx	11.2	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	C	*	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:	xxxxxx			xxxxxx			12.3			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 #1 Natividad / Rogge

Average Delay (sec/veh): 88.7 Worst Case Level Of Service: F[274.6]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0 1	0 0		0 0 0	1 0		1 0 0	0 1		0 0 0	0 0	
Volume Module:												
Base Vol:	290	360	0	0	290	120	170	0	320	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:	290	360	0	0	290	120	170	0	320	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:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	358	444	0	0	358	148	210	0	395	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	358	444	0	0	358	148	210	0	395	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	506	xxxx	xxxxx	xxxx	xxxx	xxxxx	1593	xxxx	432	xxxx	xxxx	xxxxx
Potent Cap.:	1059	xxxx	xxxxx	xxxx	xxxx	xxxxx	117	xxxx	621	xxxx	xxxx	xxxxx
Move Cap.:	1059	xxxx	xxxxx	xxxx	xxxx	xxxxx	86	xxxx	621	xxxx	xxxx	xxxxx
Volume/Cap:	0.34	xxxx	xxxx	xxxx	xxxx	xxxx	2.43	xxxx	0.64	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	1.5	xxxx	xxxxx	xxxx	xxxx	xxxxx	19.5	xxxx	4.5	xxxx	xxxx	xxxxx
Control Del:	10.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	753.0	xxxx	20.4	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	F	*	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:	xxxxxx			xxxxxx			274.6			xxxxxx		
ApproachLOS:	*			*			F			*		

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

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

Intersection #1 Natividad / Rogge

Average Delay (sec/veh): 57.9 Worst Case Level Of Service: F[224.9]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0	1 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	240	575	0	0	315	180	140	0	300	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:	240	575	0	0	315	180	140	0	300	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:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	282	676	0	0	371	212	165	0	353	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	282	676	0	0	371	212	165	0	353	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.3	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	582	xxxx	xxxxx	xxxx	xxxx	xxxxx	1718	xxxx	476	xxxx	xxxx	xxxxx
Potent Cap.:	977	xxxx	xxxxx	xxxx	xxxx	xxxxx	97	xxxx	582	xxxx	xxxx	xxxxx
Move Cap.:	977	xxxx	xxxxx	xxxx	xxxx	xxxxx	75	xxxx	582	xxxx	xxxx	xxxxx
Volume/Cap:	0.29	xxxx	xxxx	xxxx	xxxx	xxxx	2.19	xxxx	0.61	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	1.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	15.2	xxxx	4.0	xxxx	xxxx	xxxxx
Control Del:	10.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	663.5	xxxx	20.2	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	F	*	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:	xxxxxx			xxxxxx			224.9			xxxxxx		
ApproachLOS:	*			*			F			*		

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

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

Intersection #1 Natividad / Rogge

Average Delay (sec/veh): 13.0 Worst Case Level Of Service: F[59.1]

Street Name:	Natividad						Rogge					
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			Channel			Include		
Lanes:	1 0	1 0	0	0 0	0 1	0	1 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	190	300	0	0	460	200	110	0	170	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:	190	300	0	0	460	200	110	0	170	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:	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:	209	330	0	0	505	220	121	0	187	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	209	330	0	0	505	220	121	0	187	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.3	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	725	xxxx	xxxxx	xxxx	xxxx	xxxxx	1363	xxxx	615	xxxx	xxxx	xxxxx
Potent Cap.:	864	xxxx	xxxxx	xxxx	xxxx	xxxxx	161	xxxx	485	xxxx	xxxx	xxxxx
Move Cap.:	864	xxxx	xxxxx	xxxx	xxxx	xxxxx	131	xxxx	485	xxxx	xxxx	xxxxx
Volume/Cap:	0.24	xxxx	xxxx	xxxx	xxxx	xxxx	0.93	xxxx	0.38	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.9	xxxx	xxxxx	xxxx	xxxx	xxxxx	6.1	xxxx	1.8	xxxx	xxxx	xxxxx
Control Del:	10.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	124.2	xxxx	17.0	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	*	*	*	*	F	*	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:	xxxxxx			xxxxxx			59.1			xxxxxx		
ApproachLOS:	*			*			F			*		

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

APPENDIX D
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

Natividad Road/Boronda Road

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	12	Average Delay (sec/veh):	34.0
Optimal Cycle:	67	Level Of Service:	C

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 1	1	0	0 1 0	1	0	1 0 1	1	0	0 1 0
Volume Module:												
Base Vol:	97	174	256	164	207	38	32	359	76	184	431	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	174	256	164	207	38	32	359	76	184	431	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	113	202	298	191	241	44	37	417	88	214	501	234
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	113	202	298	191	241	44	37	417	88	214	501	234
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:	113	202	298	191	241	44	37	417	88	214	501	234
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.96	0.82	0.90	0.92	0.92	0.90	0.95	0.81	0.93	0.93	0.93
Lanes:	1.00	1.00	1.00	1.00	0.84	0.16	1.00	1.00	1.00	1.00	0.68	0.32
Final Sat.:	1736	1828	1554	1702	1479	272	1718	1809	1537	1769	1209	564
Capacity Analysis Module:												
Vol/Sat:	0.06	0.11	0.19	0.11	0.16	0.16	0.02	0.23	0.06	0.12	0.41	0.41
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.14	0.35	0.14	0.20	0.20	0.06	0.39	0.47	0.20	0.53	0.68
Volume/Cap:	0.79	0.78	0.55	0.78	0.79	0.79	0.36	0.59	0.12	0.59	0.78	0.61
Uniform Del:	45.1	41.3	26.4	41.2	37.8	37.8	45.2	24.2	14.8	36.0	18.6	8.9
IncremntDel:	25.8	13.7	1.3	14.5	11.6	11.6	2.2	1.4	0.1	2.6	4.1	0.9
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:	70.9	55.1	27.7	55.7	49.4	49.4	47.3	25.6	14.9	38.7	22.7	9.8
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:	70.9	55.1	27.7	55.7	49.4	49.4	47.3	25.6	14.9	38.7	22.7	9.8
LOS by Move:	E	E	C	E	D	D	D	C	B	D	C	A
HCM2kAvgQ:	5	8	8	8	10	10	2	11	2	7	19	13

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.847
Loss Time (sec):	12	Average Delay (sec/veh):	40.4
Optimal Cycle:	90	Level Of Service:	D

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	140	125	399	201	187	30	58	553	101	254	606	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	125	399	201	187	30	58	553	101	254	606	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	157	140	448	226	210	34	65	621	113	285	681	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	140	448	226	210	34	65	621	113	285	681	146
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:	157	140	448	226	210	34	65	621	113	285	681	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.91	0.94	0.94	0.93	0.98	0.83	0.93	0.95	0.95
Lanes:	1.00	1.00	1.00	1.00	0.86	0.14	1.00	1.00	1.00	1.00	0.82	0.18
Final Sat.:	1769	1862	1583	1736	1542	247	1769	1862	1583	1769	1492	320
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.28	0.13	0.14	0.14	0.04	0.33	0.07	0.16	0.46	0.46
Crit Moves:			****	****			****				****	
Green/Cycle:	0.12	0.14	0.33	0.15	0.18	0.18	0.06	0.40	0.51	0.19	0.53	0.68
Volume/Cap:	0.77	0.53	0.85	0.86	0.77	0.77	0.61	0.84	0.14	0.84	0.86	0.67
Uniform Del:	43.0	39.9	31.0	41.5	39.3	39.3	45.9	27.3	12.8	38.9	20.5	9.5
IncremntDel:	16.5	2.1	12.5	24.4	11.2	11.2	10.3	8.6	0.1	17.0	8.2	1.5
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:	59.5	42.0	43.6	65.9	50.4	50.4	56.1	35.9	12.9	55.9	28.7	11.0
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:	59.5	42.0	43.6	65.9	50.4	50.4	56.1	35.9	12.9	55.9	28.7	11.0
LOS by Move:	E	D	D	E	D	D	E	D	B	E	C	B
HCM2kAvgQ:	7	5	16	10	9	9	3	20	2	11	25	16

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.817
Loss Time (sec):	12	Average Delay (sec/veh):	40.1
Optimal Cycle:	81	Level Of Service:	D

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	109	124	474	247	139	30	13	569	108	273	608	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	124	474	247	139	30	13	569	108	273	608	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	111	127	484	252	142	31	13	581	110	279	620	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	111	127	484	252	142	31	13	581	110	279	620	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	111	127	484	252	142	31	13	581	110	279	620	148
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.92	0.94	0.94	0.93	0.98	0.83	0.94	0.96	0.96
Lanes:	1.00	1.00	1.00	1.00	0.82	0.18	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1787	1881	1599	1753	1476	319	1769	1862	1583	1787	1475	352
Capacity Analysis Module:												
Vol/Sat:	0.06	0.07	0.30	0.14	0.10	0.10	0.01	0.31	0.07	0.16	0.42	0.42
Crit Moves:			****	****			****				****	
Green/Cycle:	0.13	0.17	0.35	0.17	0.20	0.20	0.06	0.36	0.50	0.18	0.49	0.65
Volume/Cap:	0.47	0.40	0.86	0.87	0.47	0.47	0.12	0.86	0.14	0.86	0.87	0.65
Uniform Del:	40.2	37.0	30.2	40.6	35.1	35.1	44.5	29.4	13.7	39.7	22.9	10.5
IncremntDel:	1.5	0.8	13.0	23.0	1.0	1.0	0.5	10.6	0.1	19.8	9.1	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:	41.7	37.8	43.2	63.6	36.1	36.1	45.0	40.1	13.8	59.4	32.0	11.8
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:	41.7	37.8	43.2	63.6	36.1	36.1	45.0	40.1	13.8	59.4	32.0	11.8
LOS by Move:	D	D	D	E	D	D	D	D	B	E	C	B
HCM2kAvgQ:	4	4	17	11	5	5	0	19	2	11	24	15

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.830
Loss Time (sec):	12	Average Delay (sec/veh):	37.5
Optimal Cycle:	85	Level Of Service:	D

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	97	204	256	164	227	54	56	359	76	184	431	201
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	97	204	256	164	227	54	56	359	76	184	431	201
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	117	246	308	198	273	65	67	433	92	222	519	242
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	246	308	198	273	65	67	433	92	222	519	242
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:	117	246	308	198	273	65	67	433	92	222	519	242
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.96	0.82	0.90	0.92	0.92	0.90	0.95	0.81	0.93	0.93	0.93
Lanes:	1.00	1.00	1.00	1.00	0.81	0.19	1.00	1.00	1.00	1.00	0.68	0.32
Final Sat.:	1736	1828	1554	1702	1405	334	1718	1809	1537	1769	1209	564
Capacity Analysis Module:												
Vol/Sat:	0.07	0.13	0.20	0.12	0.19	0.19	0.04	0.24	0.06	0.13	0.43	0.43
Crit Moves:	****				****		****				****	
Green/Cycle:	0.08	0.17	0.36	0.14	0.23	0.23	0.06	0.37	0.45	0.20	0.51	0.65
Volume/Cap:	0.84	0.81	0.55	0.81	0.84	0.84	0.65	0.64	0.13	0.64	0.84	0.66
Uniform Del:	45.4	40.1	25.4	41.5	36.7	36.7	46.0	25.8	15.9	37.0	21.1	10.5
IncremntDel:	35.0	14.6	1.1	17.6	14.9	14.9	14.2	2.1	0.1	4.0	7.3	1.4
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:	80.4	54.7	26.5	59.1	51.6	51.6	60.1	27.9	16.0	41.0	28.4	11.9
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:	80.4	54.7	26.5	59.1	51.6	51.6	60.1	27.9	16.0	41.0	28.4	11.9
LOS by Move:	F	D	C	E	D	D	E	C	B	D	C	B
HCM2kAvgQ:	6	10	8	8	13	13	3	12	2	7	23	15

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.864
Loss Time (sec):	12	Average Delay (sec/veh):	43.2
Optimal Cycle:	95	Level Of Service:	D

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	1	0 1	0 1	1	0 0	1 0
Volume Module:												
Base Vol:	140	137	399	201	205	44	68	553	101	254	606	130
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	140	137	399	201	205	44	68	553	101	254	606	130
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	159	156	453	228	233	50	77	628	115	289	689	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	156	453	228	233	50	77	628	115	289	689	148
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	156	453	228	233	50	77	628	115	289	689	148
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.91	0.94	0.94	0.93	0.98	0.83	0.93	0.95	0.95
Lanes:	1.00	1.00	1.00	1.00	0.82	0.18	1.00	1.00	1.00	1.00	0.82	0.18
Final Sat.:	1769	1862	1583	1736	1464	314	1769	1862	1583	1769	1492	320
Capacity Analysis Module:												
Vol/Sat:	0.09	0.08	0.29	0.13	0.16	0.16	0.04	0.34	0.07	0.16	0.46	0.46
Crit Moves:			****	****			****				****	
Green/Cycle:	0.11	0.14	0.33	0.15	0.19	0.19	0.06	0.40	0.50	0.19	0.53	0.68
Volume/Cap:	0.85	0.59	0.86	0.87	0.85	0.85	0.73	0.85	0.14	0.85	0.87	0.68
Uniform Del:	44.0	40.2	31.2	41.5	39.4	39.4	46.2	27.5	13.4	39.0	20.7	9.6
IncremntDel:	29.8	3.6	13.5	26.1	18.9	18.9	22.3	9.3	0.1	18.2	9.0	1.6
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:	73.7	43.8	44.7	67.6	58.3	58.3	68.5	36.8	13.5	57.2	29.6	11.1
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:	73.7	43.8	44.7	67.6	58.3	58.3	68.5	36.8	13.5	57.2	29.6	11.1
LOS by Move:	E		D	D	E	E	E	D	B	E	C	B
HCM2kAvgQ:	7		5	16	10	11	11	4	20	2	11	26	16

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.829
Loss Time (sec):	12	Average Delay (sec/veh):	40.9
Optimal Cycle:	84	Level Of Service:	D

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	109	131	474	247	148	37	19	569	108	273	608	145
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	109	131	474	247	148	37	19	569	108	273	608	145
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	112	135	489	255	153	38	20	587	111	281	627	149
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	112	135	489	255	153	38	20	587	111	281	627	149
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:	112	135	489	255	153	38	20	587	111	281	627	149
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.94	0.99	0.84	0.92	0.94	0.94	0.93	0.98	0.83	0.94	0.96	0.96
Lanes:	1.00	1.00	1.00	1.00	0.80	0.20	1.00	1.00	1.00	1.00	0.81	0.19
Final Sat.:	1787	1881	1599	1753	1432	358	1769	1862	1583	1787	1475	352
Capacity Analysis Module:												
Vol/Sat:	0.06	0.07	0.31	0.15	0.11	0.11	0.01	0.32	0.07	0.16	0.43	0.43
Crit Moves:			****	****			****				****	
Green/Cycle:	0.12	0.17	0.35	0.17	0.21	0.21	0.06	0.36	0.49	0.18	0.49	0.65
Volume/Cap:	0.51	0.42	0.87	0.88	0.51	0.51	0.18	0.87	0.14	0.87	0.88	0.65
Uniform Del:	40.9	37.2	30.4	40.7	34.9	34.9	44.7	29.6	14.1	39.7	23.1	10.6
IncremntDel:	1.9	0.9	13.9	24.4	1.1	1.1	0.8	11.4	0.1	21.0	9.8	1.3
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:	42.8	38.1	44.3	65.1	36.0	36.0	45.5	41.0	14.2	60.8	32.9	11.9
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:	42.8	38.1	44.3	65.1	36.0	36.0	45.5	41.0	14.2	60.8	32.9	11.9
LOS by Move:	D	D	D	E	D	D	D	D	B	E	C	B
HCM2kAvgQ:	4	4	17	11	6	6	1	20	2	11	24	15

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	2.452
Loss Time (sec):	12	Average Delay (sec/veh):	483.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	450	700	350	200	660	200	200	1100	250	200	1800	200
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	450	700	350	200	660	200	200	1100	250	200	1800	200
User Adj:	1.00	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:	495	769	385	220	725	220	220	1209	275	220	1978	220
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	495	769	385	220	725	220	220	1209	275	220	1978	220
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:	495	769	385	220	725	220	220	1209	275	220	1978	220
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.96	0.82	0.90	0.91	0.91	0.90	0.95	0.81	0.93	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	0.77	0.23	1.00	1.00	1.00	1.00	0.90	0.10
Final Sat.:	1736	1828	1554	1702	1327	402	1718	1809	1537	1769	1651	183
Capacity Analysis Module:												
Vol/Sat:	0.28	0.42	0.25	0.13	0.55	0.55	0.13	0.67	0.18	0.12	1.20	1.20
Crit Moves:	****				****		****				****	
Green/Cycle:	0.12	0.26	0.34	0.08	0.22	0.22	0.06	0.46	0.57	0.09	0.48	0.56
Volume/Cap:	2.48	1.64	0.72	1.64	2.48	2.48	2.13	1.46	0.31	1.46	2.48	2.13
Uniform Del:	44.2	37.1	28.7	46.1	39.0	39.0	47.0	27.1	11.1	45.7	25.8	21.9
IncremntDel:	678.6	296	4.9	317.9	672	671.7	540.3	212	0.2	238.3	667	511.1
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:	722.9	334	33.6	364.0	711	710.6	587.3	239	11.3	284.0	693	533.0
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:	722.9	334	33.6	364.0	711	710.6	587.3	239	11.3	284.0	693	533.0
LOS by Move:	F	F	C	F	F	F	F	F	B	F	F	F
HCM2kAvgQ:	52	61	12	19	98	98	22	84	4	17	226	209

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	2.767
Loss Time (sec):	12	Average Delay (sec/veh):	624.3
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0 1	0	1 0	1 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	480	670	250	300	1010	170	330	1710	345	160	1870	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	480	670	250	300	1010	170	330	1710	345	160	1870	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	522	728	272	326	1098	185	359	1859	375	174	2033	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	522	728	272	326	1098	185	359	1859	375	174	2033	207
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:	522	728	272	326	1098	185	359	1859	375	174	2033	207
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.91	0.94	0.94	0.93	0.98	0.83	0.93	0.97	0.97
Lanes:	1.00	1.00	1.00	1.00	0.86	0.14	1.00	1.00	1.00	1.00	0.91	0.09
Final Sat.:	1769	1862	1583	1736	1530	258	1769	1862	1583	1769	1667	169
Capacity Analysis Module:												
Vol/Sat:	0.29	0.39	0.17	0.19	0.72	0.72	0.20	1.00	0.24	0.10	1.22	1.22
Crit Moves:	****				****		****				****	
Green/Cycle:	0.11	0.25	0.29	0.12	0.26	0.26	0.07	0.47	0.57	0.05	0.44	0.56
Volume/Cap:	2.77	1.58	0.59	1.58	2.77	2.77	2.77	2.13	0.41	2.13	2.77	2.18
Uniform Del:	44.7	37.6	30.1	44.1	37.0	37.0	46.3	26.6	11.9	47.7	28.0	22.0
IncremntDel:	809.8	272	1.9	283.8	801	801.1	816.3	514	0.3	548.5	799	534.2
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:	854.4	310	32.1	327.9	838	838.2	862.6	540	12.2	596.2	827	556.2
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:	854.4	310	32.1	327.9	838	838.2	862.6	540	12.2	596.2	827	556.2
LOS by Move:	F	F	C	F	F	F	F	F	B	F	F	F
HCM2kAvgQ:	58	56	8	26	140	140	40	177	7	18	242	216

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

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

Intersection #2 Natividad / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	2.513
Loss Time (sec):	12	Average Delay (sec/veh):	571.4
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Natividad						Boronda					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Ovl			Ovl		
Min. Green:	6	6	6	6	6	6	6	6	4	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1 0	1	1 0	0	1 0	1 0	1 0	1	1 0	0	1 0
Volume Module:												
Base Vol:	400	740	200	270	900	170	280	2100	400	300	1500	280
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	400	740	200	270	900	170	280	2100	400	300	1500	280
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	417	771	208	281	938	177	292	2188	417	313	1563	292
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	417	771	208	281	938	177	292	2188	417	313	1563	292
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:	417	771	208	281	938	177	292	2188	417	313	1563	292
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.83	0.91	0.94	0.94	0.93	0.98	0.83	0.93	0.96	0.96
Lanes:	1.00	1.00	1.00	1.00	0.84	0.16	1.00	1.00	1.00	1.00	0.84	0.16
Final Sat.:	1769	1862	1583	1736	1501	283	1769	1862	1583	1769	1531	286
Capacity Analysis Module:												
Vol/Sat:	0.24	0.41	0.13	0.16	0.62	0.62	0.16	1.17	0.26	0.18	1.02	1.02
Crit Moves:	****				****			****		****		
Green/Cycle:	0.09	0.25	0.32	0.10	0.25	0.25	0.07	0.47	0.56	0.07	0.46	0.56
Volume/Cap:	2.51	1.68	0.42	1.68	2.51	2.51	2.20	2.51	0.47	2.51	2.20	1.82
Uniform Del:	45.3	37.7	26.9	45.2	37.6	37.6	46.3	26.6	13.1	46.5	26.9	22.0
IncremntDel:	698.6	317	0.6	331.8	688	687.7	565.7	684	0.4	704.3	546	375.0
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:	743.9	354	27.5	376.9	725	725.3	612.0	711	13.5	750.8	573	397.0
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:	743.9	354	27.5	376.9	725	725.3	612.0	711	13.5	750.8	573	397.0
LOS by Move:	F	F	C	F	F	F	F	F	B	F	F	F
HCM2kAvgQ:	45	63	5	24	116	116	30	227	8	34	180	158

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

APPENDIX E
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

San Juan Grade Road/Boronda Road

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.564
Loss Time (sec):	12	Average Delay (sec/veh):	27.8
Optimal Cycle:	45	Level Of Service:	C

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2		0 1	2 0 2		0 1	2 0 1		1 0	2 0 3		0 1
Volume Module:												
Base Vol:	61	157	23	361	167	305	70	409	39	23	581	304
Growth Adj:	1.00	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	157	23	361	167	305	70	409	39	23	581	304
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
PHF Volume:	70	180	26	415	192	351	80	470	45	26	668	349
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	180	26	415	192	351	80	470	45	26	668	349
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:	70	180	26	415	192	351	80	470	45	26	668	349
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.90	0.81	0.88	0.90	0.81	0.86	0.88	0.88	0.89	0.88	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.83	0.17	2.00	3.00	1.00
Final Sat.:	3334	3437	1537	3334	3437	1537	3274	3041	290	3400	5037	1568
Capacity Analysis Module:												
Vol/Sat:	0.02	0.05	0.02	0.12	0.06	0.23	0.02	0.15	0.15	0.01	0.13	0.22
Crit Moves:	****					****	****					****
Green/Cycle:	0.06	0.14	0.14	0.30	0.38	0.38	0.06	0.31	0.31	0.12	0.38	0.38
Volume/Cap:	0.35	0.36	0.12	0.42	0.15	0.59	0.41	0.49	0.49	0.06	0.35	0.59
Uniform Del:	45.1	38.6	37.2	28.0	20.1	24.5	45.3	27.8	27.8	38.9	22.5	25.1
IncremntDel:	1.1	0.5	0.2	0.3	0.1	1.6	1.4	0.4	0.4	0.1	0.1	1.6
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:	46.2	39.1	37.5	28.3	20.1	26.2	46.7	28.2	28.2	38.9	22.6	26.7
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:	46.2	39.1	37.5	28.3	20.1	26.2	46.7	28.2	28.2	38.9	22.6	26.7
LOS by Move:	D	D	D	C	C	C	D	C	C	D	C	C
HCM2kAvgQ:	1	3	1	5	2	9	2	7	7	0	5	9

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.487
Loss Time (sec):	12	Average Delay (sec/veh):	28.1
Optimal Cycle:	40	Level Of Service:	C

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	1 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	157	274	77	273	204	161	82	697	63	88	554	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	274	77	273	204	161	82	697	63	88	554	238
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	167	291	82	290	217	171	87	741	67	94	589	253
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	167	291	82	290	217	171	87	741	67	94	589	253
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:	167	291	82	290	217	171	87	741	67	94	589	253
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.89	0.92	0.83	0.89	0.91	0.91	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.83	0.17	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3400	3505	1568	3400	3176	287	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.05	0.09	0.06	0.11	0.03	0.23	0.23	0.03	0.12	0.16
Crit Moves:		****		****				****		****		
Green/Cycle:	0.12	0.17	0.17	0.17	0.22	0.22	0.15	0.48	0.48	0.06	0.39	0.39
Volume/Cap:	0.40	0.49	0.31	0.49	0.28	0.49	0.18	0.49	0.49	0.45	0.30	0.41
Uniform Del:	40.6	37.7	36.5	37.3	32.3	34.0	37.4	17.8	17.8	45.4	21.0	22.1
IncremntDel:	0.6	0.6	0.7	0.6	0.2	1.1	0.2	0.2	0.2	1.6	0.1	0.4
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:	41.2	38.3	37.1	37.9	32.5	35.1	37.6	18.1	18.1	47.0	21.1	22.5
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:	41.2	38.3	37.1	37.9	32.5	35.1	37.6	18.1	18.1	47.0	21.1	22.5
LOS by Move:	D	D	D	D	C	D	D	B	B	D	C	C
HCM2kAvgQ:	3	5	2	5	3	5	1	9	9	2	5	6

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.491
Loss Time (sec):	12	Average Delay (sec/veh):	26.9
Optimal Cycle:	40	Level Of Service:	C

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2		0 1	2 0 2		0 1	2 0 1		1 0	2 0 3		0 1
Volume Module:												
Base Vol:	168	254	81	229	180	134	120	812	75	107	491	241
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	254	81	229	180	134	120	812	75	107	491	241
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	173	262	84	236	186	138	124	837	77	110	506	248
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	173	262	84	236	186	138	124	837	77	110	506	248
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	173	262	84	236	186	138	124	837	77	110	506	248
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.94	0.84	0.89	0.92	0.83	0.90	0.92	0.92	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.83	0.17	2.00	3.00	1.00
Final Sat.:	3467	3574	1599	3400	3505	1568	3432	3197	295	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.07	0.05	0.07	0.05	0.09	0.04	0.26	0.26	0.03	0.10	0.16
Crit Moves:	****					****		****		****		
Green/Cycle:	0.10	0.14	0.14	0.14	0.18	0.18	0.17	0.53	0.53	0.07	0.43	0.43
Volume/Cap:	0.49	0.51	0.36	0.51	0.30	0.49	0.22	0.49	0.49	0.49	0.23	0.36
Uniform Del:	42.5	39.5	38.6	40.0	35.5	36.9	36.1	14.8	14.8	45.1	17.8	19.1
IncremntDel:	1.1	0.8	1.0	0.9	0.3	1.3	0.2	0.2	0.2	1.7	0.1	0.3
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:	43.5	40.3	39.6	41.0	35.8	38.3	36.3	15.0	15.0	46.8	17.9	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:	43.5	40.3	39.6	41.0	35.8	38.3	36.3	15.0	15.0	46.8	17.9	19.4
LOS by Move:	D	D	D	D	D	D	D	B	B	D	B	B
HCM2kAvgQ:	3	5	3	4	3	4	2	9	9	2	4	5

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.667
Loss Time (sec):	12	Average Delay (sec/veh):	28.5
Optimal Cycle:	55	Level Of Service:	C

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	1 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	61	172	23	408	177	309	76	409	39	23	581	375
Growth Adj:	1.00	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	172	23	408	177	309	76	409	39	23	581	375
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
PHF Volume:	74	210	28	498	216	377	93	499	48	28	709	457
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	210	28	498	216	377	93	499	48	28	709	457
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	210	28	498	216	377	93	499	48	28	709	457
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.90	0.81	0.88	0.90	0.81	0.86	0.88	0.88	0.89	0.88	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.83	0.17	2.00	3.00	1.00
Final Sat.:	3334	3437	1537	3334	3437	1537	3274	3041	290	3400	5037	1568
Capacity Analysis Module:												
Vol/Sat:	0.02	0.06	0.02	0.15	0.06	0.25	0.03	0.16	0.16	0.01	0.14	0.29
Crit Moves:	****					****	****					****
Green/Cycle:	0.06	0.12	0.12	0.29	0.35	0.35	0.06	0.35	0.35	0.13	0.41	0.41
Volume/Cap:	0.37	0.52	0.15	0.52	0.18	0.71	0.47	0.47	0.47	0.07	0.34	0.71
Uniform Del:	45.2	41.4	39.6	29.7	22.7	28.2	45.5	25.6	25.6	38.5	20.1	24.3
IncremntDel:	1.2	1.2	0.4	0.5	0.1	4.3	1.8	0.3	0.3	0.1	0.1	3.6
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:	46.4	42.6	40.0	30.2	22.8	32.5	47.3	25.9	25.9	38.5	20.2	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:	46.4	42.6	40.0	30.2	22.8	32.5	47.3	25.9	25.9	38.5	20.2	27.9
LOS by Move:	D	D	D	C	C	C	D	C	C	D	C	C
HCM2kAvgQ:	2	4	1	7	2	11	2	7	7	0	5	13

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	12	Average Delay (sec/veh):	28.5
Optimal Cycle:	42	Level Of Service:	C

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2	0	1	2 0 2	0	1	2 0 1	1	0	2 0 3	0	1
Volume Module:												
Base Vol:	157	280	77	317	213	165	85	697	63	88	554	268
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	280	77	317	213	165	85	697	63	88	554	268
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	171	304	84	345	232	179	92	758	68	96	602	291
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	304	84	345	232	179	92	758	68	96	602	291
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:	171	304	84	345	232	179	92	758	68	96	602	291
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.89	0.92	0.83	0.89	0.91	0.91	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.83	0.17	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3400	3505	1568	3400	3176	287	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.09	0.05	0.10	0.07	0.11	0.03	0.24	0.24	0.03	0.12	0.18
Crit Moves:		****		****				****		****		
Green/Cycle:	0.12	0.17	0.17	0.20	0.24	0.24	0.13	0.46	0.46	0.06	0.39	0.39
Volume/Cap:	0.40	0.52	0.32	0.52	0.28	0.48	0.21	0.52	0.52	0.46	0.30	0.47
Uniform Del:	40.4	38.1	36.8	36.0	31.2	32.9	39.1	19.2	19.2	45.4	21.0	22.7
IncremntDel:	0.6	0.8	0.7	0.7	0.2	1.0	0.2	0.3	0.3	1.7	0.1	0.6
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:	41.0	38.9	37.5	36.8	31.4	33.9	39.4	19.5	19.5	47.1	21.1	23.2
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:	41.0	38.9	37.5	36.8	31.4	33.9	39.4	19.5	19.5	47.1	21.1	23.2
LOS by Move:	D	D	D	D	C	C	D	B	B	D	C	C
HCM2kAvgQ:	3	5	3	5	3	5	1	10	10	2	5	7

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	0.516
Loss Time (sec):	12	Average Delay (sec/veh):	27.3
Optimal Cycle:	42	Level Of Service:	C

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	1 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	168	258	81	251	184	136	121	812	75	107	491	258
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	168	258	81	251	184	136	121	812	75	107	491	258
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	177	272	85	264	194	143	127	855	79	113	517	272
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	177	272	85	264	194	143	127	855	79	113	517	272
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	177	272	85	264	194	143	127	855	79	113	517	272
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.94	0.84	0.89	0.92	0.83	0.90	0.92	0.92	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.83	0.17	2.00	3.00	1.00
Final Sat.:	3467	3574	1599	3400	3505	1568	3432	3197	295	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.05	0.08	0.05	0.08	0.06	0.09	0.04	0.27	0.27	0.03	0.10	0.17
Crit Moves:		****		****				****		****		
Green/Cycle:	0.12	0.15	0.15	0.15	0.18	0.18	0.15	0.52	0.52	0.06	0.43	0.43
Volume/Cap:	0.43	0.52	0.36	0.52	0.31	0.51	0.25	0.52	0.52	0.52	0.24	0.40
Uniform Del:	41.0	39.3	38.4	39.1	35.6	37.0	37.4	15.8	15.8	45.3	18.0	19.5
IncremntDel:	0.7	0.9	1.0	0.9	0.3	1.5	0.2	0.3	0.3	2.1	0.1	0.4
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:	41.7	40.2	39.4	40.0	35.9	38.5	37.7	16.1	16.1	47.5	18.1	19.9
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:	41.7	40.2	39.4	40.0	35.9	38.5	37.7	16.1	16.1	47.5	18.1	19.9
LOS by Move:	D	D	D	D	D	D	D	B	B	D	B	B
HCM2kAvgQ:	3	5	3	4	3	5	2	10	10	2	4	6

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	1.158
Loss Time (sec):	12	Average Delay (sec/veh):	75.7
Optimal Cycle:	180	Level Of Service:	E

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	1 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	250	170	290	420	180	430	100	1460	160	290	2070	360
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	170	290	420	180	430	100	1460	160	290	2070	360
User Adj:	1.00	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:	275	187	319	462	198	473	110	1604	176	319	2275	396
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	275	187	319	462	198	473	110	1604	176	319	2275	396
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:	275	187	319	462	198	473	110	1604	176	319	2275	396
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.90	0.81	0.88	0.90	0.81	0.86	0.87	0.87	0.89	0.88	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.80	0.20	2.00	3.00	1.00
Final Sat.:	3334	3437	1537	3334	3437	1537	3274	2996	328	3400	5037	1568
Capacity Analysis Module:												
Vol/Sat:	0.08	0.05	0.21	0.14	0.06	0.31	0.03	0.54	0.54	0.09	0.45	0.25
Crit Moves:	****					****		****		****		
Green/Cycle:	0.07	0.20	0.20	0.13	0.27	0.27	0.06	0.46	0.46	0.08	0.48	0.48
Volume/Cap:	1.16	0.27	1.03	1.03	0.22	1.16	0.53	1.16	1.16	1.16	0.94	0.53
Uniform Del:	46.4	33.7	39.9	43.3	28.6	36.7	45.4	26.9	26.9	46.0	24.7	18.1
IncremntDel:	107.7	0.2	58.2	49.5	0.1	95.2	2.5	78.8	78.8	103.9	8.3	0.7
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:	154.2	33.9	98.1	92.8	28.7	131.9	47.8	106	105.7	149.8	33.0	18.8
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:	154.2	33.9	98.1	92.8	28.7	131.9	47.8	106	105.7	149.8	33.0	18.8
LOS by Move:	F	C	F	F	C	F	D	F	F	F	C	B
HCM2kAvgQ:	10	3	16	12	3	26	2	47	47	11	29	9

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	1.461
Loss Time (sec):	12	Average Delay (sec/veh):	155.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0 2		0 1	2 0 2		0 1	2 0 1		1 0	2 0 3		0 1
Volume Module:												
Base Vol:	430	280	380	350	210	290	140	2390	170	440	1900	300
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	430	280	380	350	210	290	140	2390	170	440	1900	300
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	457	298	404	372	223	309	149	2543	181	468	2021	319
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	457	298	404	372	223	309	149	2543	181	468	2021	319
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:	457	298	404	372	223	309	149	2543	181	468	2021	319
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.89	0.92	0.83	0.89	0.91	0.91	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.87	0.13	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3400	3505	1568	3400	3240	230	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.13	0.08	0.26	0.11	0.06	0.20	0.04	0.78	0.78	0.14	0.40	0.20
Crit Moves:			****	****				****		****		
Green/Cycle:	0.10	0.17	0.17	0.07	0.15	0.15	0.08	0.54	0.54	0.09	0.55	0.55
Volume/Cap:	1.32	0.48	1.46	1.46	0.43	1.32	0.53	1.46	1.46	1.46	0.73	0.37
Uniform Del:	45.0	37.2	41.3	46.3	38.7	42.6	44.0	23.2	23.2	45.3	17.0	12.8
IncremntDel:	163.7	0.6	226.6	228.0	0.6	171.5	1.9	211	210.7	224.2	1.0	0.3
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:	208.6	37.8	267.8	274.3	39.3	214.1	45.9	234	233.8	269.5	18.0	13.1
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:	208.6	37.8	267.8	274.3	39.3	214.1	45.9	234	233.8	269.5	18.0	13.1
LOS by Move:	F	D	F	F	D	F	D	F	F	F	B	B
HCM2kAvgQ:	17	5	30	15	4	21	3	99	99	19	18	6

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

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

Intersection #3 San Juan Grade / Boronda

Cycle (sec):	100	Critical Vol./Cap.(X):	1.642
Loss Time (sec):	12	Average Delay (sec/veh):	196.2
Optimal Cycle:	180	Level Of Service:	F

Street Name:	San Juan Grade						Boronda					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	2 0	1	2 0	2 0	1	2 0	1 1	0	2 0	3 0	1
Volume Module:												
Base Vol:	250	260	500	370	280	180	260	2600	370	340	1740	240
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	250	260	500	370	280	180	260	2600	370	340	1740	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	260	271	521	385	292	188	271	2708	385	354	1813	250
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	260	271	521	385	292	188	271	2708	385	354	1813	250
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:	260	271	521	385	292	188	271	2708	385	354	1813	250
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.83	0.89	0.92	0.83	0.89	0.90	0.90	0.90	0.89	0.83
Lanes:	2.00	2.00	1.00	2.00	2.00	1.00	2.00	1.75	0.25	2.00	3.00	1.00
Final Sat.:	3432	3538	1583	3400	3505	1568	3400	3010	428	3432	5083	1583
Capacity Analysis Module:												
Vol/Sat:	0.08	0.08	0.33	0.11	0.08	0.12	0.08	0.90	0.90	0.10	0.36	0.16
Crit Moves:			****	****				****		****		
Green/Cycle:	0.10	0.20	0.20	0.07	0.16	0.16	0.11	0.55	0.55	0.06	0.50	0.50
Volume/Cap:	0.73	0.38	1.64	1.64	0.50	0.73	0.71	1.64	1.64	1.64	0.71	0.32
Uniform Del:	43.4	34.6	40.0	46.5	38.0	39.6	42.9	22.6	22.6	46.9	19.5	14.9
IncremntDel:	7.2	0.3	302.9	307.5	0.7	9.8	6.3	292	291.5	309.0	1.0	0.2
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:	50.6	35.0	342.9	354.1	38.8	49.4	49.2	314	314.1	355.9	20.5	15.1
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:	50.6	35.0	342.9	354.1	38.8	49.4	49.2	314	314.1	355.9	20.5	15.1
LOS by Move:	D	C	F	F	D	D	D	F	F	F	C	B
HCM2kAvgQ:	6	4	42	17	5	7	6	127	127	16	17	5

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

APPENDIX F
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

San Juan Grade Road/Russell Road

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.749
Loss Time (sec):	9	Average Delay (sec/veh):	28.4
Optimal Cycle:	58	Level Of Service:	C

Street Name:	San Juan Grade						Russell					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	0	6	6	6	6	0	6	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 0	1	0	1 0 1	1	0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	154	210	0	0	477	330	331	0	128	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:	154	210	0	0	477	330	331	0	128	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:	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
PHF Volume:	197	269	0	0	612	423	424	0	164	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	269	0	0	612	423	424	0	164	0	0	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:	197	269	0	0	612	423	424	0	164	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.95	1.00	1.00	1.00	0.85	0.91	1.00	0.82	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1718	1809	0	1900	1900	1615	1736	0	1554	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.15	0.00	0.00	0.32	0.26	0.24	0.00	0.11	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.15	0.58	0.00	0.00	0.43	0.43	0.33	0.00	0.33	0.00	0.00	0.00
Volume/Cap:	0.75	0.26	0.00	0.00	0.75	0.61	0.75	0.00	0.32	0.00	0.00	0.00
Uniform Del:	40.5	10.2	0.0	0.0	24.0	22.0	30.0	0.0	25.4	0.0	0.0	0.0
IncremntDel:	11.2	0.1	0.0	0.0	3.9	1.6	5.5	0.0	0.4	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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	51.7	10.3	0.0	0.0	27.8	23.6	35.5	0.0	25.7	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.7	10.3	0.0	0.0	27.8	23.6	35.5	0.0	25.7	0.0	0.0	0.0
LOS by Move:	D	B	A	A	C	C	D	A	C	A	A	A
HCM2kAvgQ:	8	4	0	0	17	11	13	0	4	0	0	0

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.570
Loss Time (sec):	9	Average Delay (sec/veh):	23.7
Optimal Cycle:	39	Level Of Service:	C

Street Name:	San Juan Grade						Russell					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	0	6	6	6	6	0	6	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 0	1	0	1 0 1	1	0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	116	224	0	0	336	227	257	0	120	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:	116	224	0	0	336	227	257	0	120	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:	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
PHF Volume:	151	291	0	0	436	295	334	0	156	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	151	291	0	0	436	295	334	0	156	0	0	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:	151	291	0	0	436	295	334	0	156	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	1.00	1.00	0.96	0.82	0.90	1.00	0.81	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1753	1845	0	1900	1828	1554	1718	0	1537	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.16	0.00	0.00	0.24	0.19	0.19	0.00	0.10	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.15	0.57	0.00	0.00	0.42	0.42	0.34	0.00	0.34	0.00	0.00	0.00
Volume/Cap:	0.57	0.28	0.00	0.00	0.57	0.45	0.57	0.00	0.30	0.00	0.00	0.00
Uniform Del:	39.5	11.0	0.0	0.0	22.2	20.9	27.0	0.0	24.2	0.0	0.0	0.0
IncremntDel:	3.0	0.1	0.0	0.0	1.0	0.5	1.3	0.0	0.3	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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	42.4	11.2	0.0	0.0	23.2	21.4	28.3	0.0	24.5	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.4	11.2	0.0	0.0	23.2	21.4	28.3	0.0	24.5	0.0	0.0	0.0
LOS by Move:	D	B	A	A	C	C	C	A	C	A	A	A
HCM2kAvgQ:	5	5	0	0	11	7	9	0	4	0	0	0

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.421
Loss Time (sec):	9	Average Delay (sec/veh):	25.1
Optimal Cycle:	30	Level Of Service:	C

Street Name:	San Juan Grade						Russell					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	0	6	6	6	6	0	6	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 0	1	0	1 0 1	1	0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	116	217	0	4	260	127	258	0	78	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:	116	217	0	4	260	127	258	0	78	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	126	236	0	4	283	138	280	0	85	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	126	236	0	4	283	138	280	0	85	0	0	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:	126	236	0	4	283	138	280	0	85	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	0.93	0.98	0.83	0.92	1.00	0.83	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	1769	1862	1583	1753	0	1568	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.07	0.13	0.00	0.00	0.15	0.09	0.16	0.00	0.05	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.17	0.36	0.00	0.17	0.36	0.36	0.38	0.00	0.38	0.00	0.00	0.00
Volume/Cap:	0.42	0.35	0.00	0.01	0.42	0.24	0.42	0.00	0.14	0.00	0.00	0.00
Uniform Del:	37.1	23.5	0.0	34.5	24.1	22.4	22.9	0.0	20.3	0.0	0.0	0.0
IncremntDel:	1.0	0.3	0.0	0.0	0.4	0.2	0.4	0.0	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	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	38.1	23.8	0.0	34.5	24.5	22.6	23.3	0.0	20.4	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	23.8	0.0	34.5	24.5	22.6	23.3	0.0	20.4	0.0	0.0	0.0
LOS by Move:	D	C	A	C	C	C	C	A	C	A	A	A
HCM2kAvgQ:	4	5	0	0	7	3	6	0	2	0	0	0

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.954
Loss Time (sec):	9	Average Delay (sec/veh):	41.6
Optimal Cycle:	141	Level Of Service:	D

Street Name:	San Juan Grade						Russell					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	0	6	6	6	6	0	6	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 0	1	0 1	0 1	1	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	154	332	0	0	558	360	375	0	128	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:	154	332	0	0	558	360	375	0	128	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:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	223	481	0	0	809	522	543	0	186	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	481	0	0	809	522	543	0	186	0	0	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:	223	481	0	0	809	522	543	0	186	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.95	1.00	1.00	1.00	0.85	0.91	1.00	0.82	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1718	1809	0	1900	1900	1615	1736	0	1554	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.13	0.27	0.00	0.00	0.43	0.32	0.31	0.00	0.12	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.14	0.58	0.00	0.00	0.45	0.45	0.33	0.00	0.33	0.00	0.00	0.00
Volume/Cap:	0.95	0.46	0.00	0.00	0.95	0.72	0.95	0.00	0.36	0.00	0.00	0.00
Uniform Del:	42.9	11.9	0.0	0.0	26.7	22.7	32.9	0.0	25.6	0.0	0.0	0.0
IncremntDel:	46.0	0.3	0.0	0.0	20.6	3.7	26.7	0.0	0.4	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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	88.9	12.2	0.0	0.0	47.3	26.3	59.5	0.0	26.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	88.9	12.2	0.0	0.0	47.3	26.3	59.5	0.0	26.1	0.0	0.0	0.0
LOS by Move:	F	B	A	A	D	C	E	A	C	A	A	A
HCM2kAvgQ:	11	8	0	0	30	14	22	0	4	0	0	0

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.679
Loss Time (sec):	9	Average Delay (sec/veh):	24.6
Optimal Cycle:	49	Level Of Service:	C

Street Name:	San Juan Grade						Russell					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	0	6	6	6	6	0	6	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 0	1	0	1 0 1	1	0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	116	275	0	0	411	255	275	0	120	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:	116	275	0	0	411	255	275	0	120	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:	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
PHF Volume:	159	377	0	0	563	349	377	0	164	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	377	0	0	563	349	377	0	164	0	0	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	159	377	0	0	563	349	377	0	164	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	1.00	1.00	0.96	0.82	0.90	1.00	0.81	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1753	1845	0	1900	1828	1554	1718	0	1537	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.20	0.00	0.00	0.31	0.22	0.22	0.00	0.11	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.13	0.59	0.00	0.00	0.45	0.45	0.32	0.00	0.32	0.00	0.00	0.00
Volume/Cap:	0.68	0.35	0.00	0.00	0.68	0.50	0.68	0.00	0.33	0.00	0.00	0.00
Uniform Del:	41.3	10.7	0.0	0.0	21.6	19.3	29.4	0.0	25.7	0.0	0.0	0.0
IncremntDel:	7.8	0.2	0.0	0.0	2.3	0.6	3.4	0.0	0.4	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	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	49.1	10.9	0.0	0.0	23.9	19.8	32.8	0.0	26.1	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.1	10.9	0.0	0.0	23.9	19.8	32.8	0.0	26.1	0.0	0.0	0.0
LOS by Move:	D	B	A	A	C	B	C	A	C	A	A	A
HCM2kAvgQ:	6	6	0	0	14	8	11	0	4	0	0	0

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.495
Loss Time (sec):	9	Average Delay (sec/veh):	25.0
Optimal Cycle:	34	Level Of Service:	C

Street Name:	San Juan Grade						Russell					
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			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	0	6	6	6	6	0	6	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1 0 0	1	0	1 0 1	1	0	0 0 1	0	0	0 0 0
Volume Module:												
Base Vol:	116	246	0	4	297	141	269	0	78	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:	116	246	0	4	297	141	269	0	78	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:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	138	293	0	5	354	168	320	0	93	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	293	0	5	354	168	320	0	93	0	0	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:	138	293	0	5	354	168	320	0	93	0	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	1.00	0.93	0.98	0.83	0.92	1.00	0.83	1.00	1.00	1.00
Lanes:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1769	1862	0	1769	1862	1583	1753	0	1568	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.08	0.16	0.00	0.00	0.19	0.11	0.18	0.00	0.06	0.00	0.00	0.00
Crit Moves:	****				****		****					
Green/Cycle:	0.16	0.39	0.00	0.15	0.38	0.38	0.37	0.00	0.37	0.00	0.00	0.00
Volume/Cap:	0.50	0.40	0.00	0.02	0.50	0.28	0.50	0.00	0.16	0.00	0.00	0.00
Uniform Del:	38.5	22.0	0.0	36.3	23.5	21.3	24.4	0.0	21.2	0.0	0.0	0.0
IncremntDel:	1.4	0.4	0.0	0.0	0.5	0.2	0.6	0.0	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	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00
Delay/Veh:	39.9	22.3	0.0	36.3	24.0	21.5	25.0	0.0	21.3	0.0	0.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	39.9	22.3	0.0	36.3	24.0	21.5	25.0	0.0	21.3	0.0	0.0	0.0
LOS by Move:	D	C	A	D	C	C	C	A	C	A	A	A
HCM2kAvgQ:	4	7	0	0	8	4	8	0	2	0	0	0

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	1.131
Loss Time (sec):	12	Average Delay (sec/veh):	70.7
Optimal Cycle:	180	Level Of Service:	E

Street Name:	San Juan Grade						Russell					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1	1 0	2 0	2	0 1	2 0	2	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	300	230	510	530	490	270	280	690	250	400	740	450
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	300	230	510	530	490	270	280	690	250	400	740	450
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	349	267	593	616	570	314	326	802	291	465	860	523
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	349	267	593	616	570	314	326	802	291	465	860	523
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:	349	267	593	616	570	314	326	802	291	465	860	523
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.83	0.83	0.88	0.90	0.81	0.89	0.91	0.82	0.89	0.91	0.82
Lanes:	2.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	1572	1572	3334	3437	1537	3369	3473	1554	3369	3473	1554
Capacity Analysis Module:												
Vol/Sat:	0.10	0.17	0.38	0.18	0.17	0.20	0.10	0.23	0.19	0.14	0.25	0.34
Crit Moves:			****	****			****					****
Green/Cycle:	0.17	0.33	0.33	0.16	0.33	0.33	0.09	0.24	0.24	0.14	0.30	0.30
Volume/Cap:	0.62	0.51	1.13	1.13	0.50	0.62	1.13	0.96	0.78	0.96	0.83	1.13
Uniform Del:	38.7	26.8	33.3	41.8	26.8	28.1	45.7	37.6	35.5	42.6	32.8	35.1
IncremntDel:	2.1	0.3	75.1	80.1	0.4	2.3	93.2	22.6	10.1	31.6	5.9	83.0
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:	40.8	27.0	108.4	121.9	27.2	30.4	139.0	60.1	45.7	74.2	38.6	118.1
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:	40.8	27.0	108.4	121.9	27.2	30.4	139.0	60.1	45.7	74.2	38.6	118.1
LOS by Move:	D	C	F	F	C	C	F	E	D	E	D	F
HCM2kAvgQ:	6	7	32	18	8	9	11	18	10	12	15	27

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	1.121
Loss Time (sec):	12	Average Delay (sec/veh):	71.4
Optimal Cycle:	180	Level Of Service:	E

Street Name:	San Juan Grade						Russell					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1	1 0	2 0	2	0 1	2 0	2	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	280	230	430	490	360	160	180	800	290	540	740	580
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	280	230	430	490	360	160	180	800	290	540	740	580
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	326	267	500	570	419	186	209	930	337	628	860	674
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	326	267	500	570	419	186	209	930	337	628	860	674
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:	326	267	500	570	419	186	209	930	337	628	860	674
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.83	0.83	0.89	0.91	0.82	0.88	0.90	0.81	0.88	0.90	0.81
Lanes:	2.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	1581	1581	3369	3473	1554	3334	3437	1537	3334	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.10	0.17	0.32	0.17	0.12	0.12	0.06	0.27	0.22	0.19	0.25	0.44
Crit Moves:			****	****			****					****
Green/Cycle:	0.19	0.28	0.28	0.15	0.24	0.24	0.06	0.26	0.26	0.18	0.39	0.39
Volume/Cap:	0.50	0.60	1.13	1.13	0.50	0.50	1.05	1.02	0.83	1.02	0.64	1.13
Uniform Del:	36.2	31.1	36.0	42.5	32.8	32.8	47.0	36.8	34.6	40.8	24.9	30.5
IncremntDel:	0.6	0.8	75.0	79.7	0.5	1.1	76.4	35.4	13.2	41.9	1.1	76.9
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:	36.8	32.0	111.0	122.2	33.3	33.9	123.4	72.2	47.8	82.7	26.0	107.5
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:	36.8	32.0	111.0	122.2	33.3	33.9	123.4	72.2	47.8	82.7	26.0	107.5
LOS by Move:	D	C	F	F	C	C	F	E	D	F	C	F
HCM2kAvgQ:	5	8	27	17	6	5	7	22	12	16	12	34

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

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

Intersection #4 San Juan Grade / Russell

Cycle (sec):	100	Critical Vol./Cap.(X):	0.597
Loss Time (sec):	12	Average Delay (sec/veh):	31.7
Optimal Cycle:	48	Level Of Service:	C

Street Name:	San Juan Grade						Russell					
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:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2 0	1	1 0	2 0	2	0 1	2 0	2	0 1	2 0	2	0 1
Volume Module:												
Base Vol:	220	150	215	245	340	120	120	400	300	270	370	290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	220	150	215	245	340	120	120	400	300	270	370	290
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	239	163	234	266	370	130	130	435	326	293	402	315
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	239	163	234	266	370	130	130	435	326	293	402	315
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:	239	163	234	266	370	130	130	435	326	293	402	315
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.84	0.84	0.89	0.91	0.82	0.88	0.90	0.81	0.88	0.90	0.81
Lanes:	2.00	1.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00	2.00	2.00	1.00
Final Sat.:	3400	1598	1598	3369	3473	1554	3334	3437	1537	3334	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.07	0.10	0.15	0.08	0.11	0.08	0.04	0.13	0.21	0.09	0.12	0.21
Crit Moves:			****	****					****	****		
Green/Cycle:	0.15	0.24	0.24	0.13	0.23	0.23	0.11	0.36	0.36	0.15	0.39	0.39
Volume/Cap:	0.47	0.42	0.60	0.60	0.47	0.37	0.34	0.36	0.60	0.60	0.30	0.53
Uniform Del:	38.8	31.7	33.4	40.9	33.4	32.6	40.9	23.8	26.4	39.8	21.1	23.5
IncremntDel:	0.7	0.3	1.5	2.2	0.4	0.7	0.5	0.2	1.8	2.0	0.1	0.9
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:	39.5	32.0	34.9	43.1	33.9	33.3	41.4	24.0	28.2	41.9	21.3	24.4
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:	39.5	32.0	34.9	43.1	33.9	33.3	41.4	24.0	28.2	41.9	21.3	24.4
LOS by Move:	D	C	C	D	C	C	D	C	C	D	C	C
HCM2kAvgQ:	4	5	7	5	6	4	2	5	9	5	4	8

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

APPENDIX G
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

San Juan Grade Road/Penzance Streeet

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

Intersection #5 San Juan Grade / Penzance

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

Street Name:	San Juan Grade						Penzance					
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	1 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	1	411	118	8	497	0	1	1	5	168	3	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:	1	411	118	8	497	0	1	1	5	168	3	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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	1	478	137	9	578	0	1	1	6	195	3	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	478	137	9	578	0	1	1	6	195	3	12
Critical Gap Module:												
Critical Gp:	7.2	6.6	6.3	7.2	6.6	6.3	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	695	412	4	714	409	9	15	xxxx	xxxxx	7	xxxx	xxxxx
Potent Cap.:	352	525	1071	342	527	1064	1616	xxxx	xxxxx	1627	xxxx	xxxxx
Move Cap.:	0	454	1071	0	456	1064	1616	xxxx	xxxxx	1627	xxxx	xxxxx
Volume/Cap:	xxxx	1.05	0.13	xxxx	1.27	0.00	0.00	xxxx	xxxx	0.12	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	7.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	456	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	24.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	163.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	F	*	*	*	*	*	*
ApproachDel:	xxxxxx			+Inf			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

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

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

Intersection #5 San Juan Grade / Penzance

Average Delay (sec/veh): 25.9 Worst Case Level Of Service: D[29.9]

Street Name:	San Juan Grade						Penzance					
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	1	0 0 1	0	0 0 1!	0	0	0 0 1!	0	0
Volume Module:												
Base Vol:	9	394	97	13	453	3	1	2	3	92	3	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	394	97	13	453	3	1	2	3	92	3	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	10	419	103	14	482	3	1	2	3	98	3	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	419	103	14	482	3	1	2	3	98	3	16
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.2	6.6	6.3	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.6	4.1	3.4	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	455	221	4	474	214	11	19	xxxx	xxxxx	5	xxxx	xxxxx
Potent Cap.:	512	674	1074	494	676	1058	1610	xxxx	xxxxx	1629	xxxx	xxxxx
Move Cap.:	183	631	1074	199	633	1058	1610	xxxx	xxxxx	1629	xxxx	xxxxx
Volume/Cap:	0.05	0.66	0.10	0.07	0.76	0.00	0.00	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	24.4	xxxx	xxxxx	7.2	xxxx	xxxxx	7.4	xxxx	xxxxx
LOS by Move:	*	*	*	C	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	655	xxxxx	xxxx	xxxx	635	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	8.4	xxxxx	xxxxx	xxxx	7.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	29.9	xxxxx	xxxxx	xxxx	26.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	*	D	*	*	*	*	*	*
ApproachDel:		29.9			26.6			xxxxxx			xxxxxx	
ApproachLOS:		D			D			*			*	

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

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

Intersection #5 San Juan Grade / Penzance

Average Delay (sec/veh): 18.8 Worst Case Level Of Service: C[22.4]

Street Name:	San Juan Grade						Penzance					
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	1 0	0	1 0	0 0 1!	0	0	0 0 1!	0	0
Volume Module:												
Base Vol:	10	382	86	11	353	4	2	4	4	61	2	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	382	86	11	353	4	2	4	4	61	2	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	11	429	97	12	397	4	2	4	4	69	2	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	429	97	12	397	4	2	4	4	69	2	7
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	354	157	7	417	156	6	9	xxxx	xxxxx	9	xxxx	xxxxx
Potent Cap.:	601	735	1076	545	734	1074	1624	xxxx	xxxxx	1624	xxxx	xxxxx
Move Cap.:	320	702	1076	246	701	1074	1624	xxxx	xxxxx	1624	xxxx	xxxxx
Volume/Cap:	0.04	0.61	0.09	0.05	0.57	0.00	0.00	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	20.4	xxxx	xxxxx	7.2	xxxx	xxxxx	7.3	xxxx	xxxxx
LOS by Move:	*	*	*	C	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	729	xxxxx	xxxx	xxxx	704	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	6.6	xxxxx	xxxxx	xxxx	3.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	22.4	xxxxx	xxxxx	xxxx	16.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	C	*	*	*	*	*	*
ApproachDel:		22.4			16.8			xxxxxx			xxxxxx	
ApproachLOS:		C			C			*			*	

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

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

Intersection #5 San Juan Grade / Penzance

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

Street Name:	San Juan Grade						Penzance					
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	1 0	0	1 0	0 0 1!	0	0	0 0 1!	0	0
Volume Module:												
Base Vol:	1	577	118	8	608	0	1	7	5	168	7	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:	1	577	118	8	608	0	1	7	5	168	7	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:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	1	801	164	11	844	0	1	10	7	233	10	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	801	164	11	844	0	1	10	7	233	10	14
Critical Gap Module:												
Critical Gp:	7.2	6.6	6.3	7.2	6.6	6.3	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	922	506	13	982	503	17	24	xxxx	xxxxx	17	xxxx	xxxxx
Potent Cap.:	248	465	1058	225	467	1054	1604	xxxx	xxxxx	1614	xxxx	xxxxx
Move Cap.:	0	387	1058	0	389	1054	1604	xxxx	xxxxx	1614	xxxx	xxxxx
Volume/Cap:	xxxx	2.07	0.15	xxxx	2.17	0.00	0.00	xxxx	xxxx	0.14	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.5	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.2	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	389	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	62.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	558.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	F	*	*	*	*	*	*
ApproachDel:	xxxxxx			+Inf			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

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

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

Intersection #5 San Juan Grade / Penzance

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

Street Name:	San Juan Grade						Penzance					
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	1 0	0	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	9	463	97	13	556	3	1	5	3	92	7	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	463	97	13	556	3	1	5	3	92	7	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	11	551	115	15	662	4	1	6	4	110	8	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	551	115	15	662	4	1	6	4	110	8	18
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.2	6.6	6.3	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.6	4.1	3.4	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	579	255	8	580	248	17	26	xxxx	xxxxx	10	xxxx	xxxxx
Potent Cap.:	423	645	1069	420	648	1050	1601	xxxx	xxxxx	1623	xxxx	xxxxx
Move Cap.:	0	598	1069	70	601	1050	1601	xxxx	xxxxx	1623	xxxx	xxxxx
Volume/Cap:	xxxx	0.92	0.11	0.22	1.10	0.00	0.00	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	0.0	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	71.0	xxxx	xxxxx	7.3	xxxx	xxxxx	7.4	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	602	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	20.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	94.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	F	*	*	*	*	*	*
ApproachDel:	xxxxxx			93.7			xxxxxx			xxxxxx		
ApproachLOS:	F			F			*			*		

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

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

Intersection #5 San Juan Grade / Penzance

Average Delay (sec/veh): 33.7 Worst Case Level Of Service: E[45.5]

Street Name:	San Juan Grade						Penzance					
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	1 0	0	1 0	0 0 1!	0	0	0 0 1!	0	0
Volume Module:												
Base Vol:	10	422	86	11	404	4	2	5	4	61	4	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	422	86	11	404	4	2	5	4	61	4	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	13	528	108	14	505	5	3	6	5	76	5	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	13	528	108	14	505	5	3	6	5	76	5	8
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	430	179	9	493	178	9	13	xxxx	xxxxx	11	xxxx	xxxxx
Potent Cap.:	535	715	1073	485	714	1070	1619	xxxx	xxxxx	1621	xxxx	xxxxx
Move Cap.:	202	679	1073	152	678	1070	1619	xxxx	xxxxx	1621	xxxx	xxxxx
Volume/Cap:	0.06	0.78	0.10	0.09	0.74	0.00	0.00	xxxx	xxxx	0.05	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	31.1	xxxx	xxxxx	7.2	xxxx	xxxxx	7.3	xxxx	xxxxx
LOS by Move:	*	*	*	D	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	689	xxxxx	xxxx	xxxx	681	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	13.2	xxxxx	xxxxx	xxxx	6.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	45.5	xxxxx	xxxxx	xxxx	24.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	E	*	*	*	C	*	*	*	*	*	*
ApproachDel:		45.5			24.5			xxxxxx			xxxxxx	
ApproachLOS:		E			C			*			*	

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

w/mitigation

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

Intersection #5 San Juan Grade / Penzance

Cycle (sec):	100	Critical Vol./Cap.(X):	0.816
Loss Time (sec):	9	Average Delay (sec/veh):	25.1
Optimal Cycle:	72	Level Of Service:	C

Street Name:	San Juan Grade						Penzance					
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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	0	6	6	6	6	6	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	1	577	118	8	608	0	1	7	5	168	7	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:	1	577	118	8	608	0	1	7	5	168	7	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:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	1	801	164	11	844	0	1	10	7	233	10	14
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	801	164	11	844	0	1	10	7	233	10	14
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	801	164	11	844	0	1	10	7	233	10	14
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.93	0.90	0.95	1.00	0.93	0.93	0.93	0.72	0.72	0.72
Lanes:	1.00	0.83	0.17	1.00	1.00	0.00	0.08	0.54	0.38	0.91	0.04	0.05
Final Sat.:	1718	1464	299	1718	1809	0	136	953	681	1235	51	74
Capacity Analysis Module:												
Vol/Sat:	0.00	0.55	0.55	0.01	0.47	0.00	0.01	0.01	0.01	0.19	0.19	0.19
Crit Moves:		****		****							****	
Green/Cycle:	0.08	0.63	0.63	0.06	0.61	0.00	0.22	0.22	0.22	0.22	0.22	0.22
Volume/Cap:	0.01	0.87	0.87	0.11	0.76	0.00	0.05	0.05	0.05	0.87	0.87	0.87
Uniform Del:	42.5	15.0	15.0	44.5	14.0	0.0	30.9	30.9	30.9	37.7	37.7	37.7
IncremntDel:	0.0	7.3	7.3	0.5	3.2	0.0	0.1	0.1	0.1	22.5	22.5	22.5
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	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Delay/Veh:	42.5	22.3	22.3	44.9	17.2	0.0	30.9	30.9	30.9	60.2	60.2	60.2
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:	42.5	22.3	22.3	44.9	17.2	0.0	30.9	30.9	30.9	60.2	60.2	60.2
LOS by Move:	D	C	C	D	B	A	C	C	C	E	E	E
HCM2kAvgQ:	0	27	27	0	20	0	0	0	0	11	11	11

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

w/mitigation

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

Intersection #5 San Juan Grade / Penzance

Cycle (sec):	100	Critical Vol./Cap.(X):	0.522
Loss Time (sec):	9	Average Delay (sec/veh):	13.8
Optimal Cycle:	35	Level Of Service:	B

Street Name:	San Juan Grade						Penzance					
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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	9	463	97	13	556	3	1	5	3	92	7	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	463	97	13	556	3	1	5	3	92	7	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	11	551	115	15	662	4	1	6	4	110	8	18
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	551	115	15	662	4	1	6	4	110	8	18
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	551	115	15	662	4	1	6	4	110	8	18
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.94	0.94	0.90	0.94	0.94	0.94	0.94	0.94	0.73	0.73	0.73
Lanes:	1.00	0.83	0.17	1.00	0.99	0.01	0.11	0.56	0.33	0.81	0.06	0.13
Final Sat.:	1736	1472	308	1702	1780	10	198	988	593	1126	86	184
Capacity Analysis Module:												
Vol/Sat:	0.01	0.37	0.37	0.01	0.37	0.37	0.01	0.01	0.01	0.10	0.10	0.10
Crit Moves:	****				****						****	
Green/Cycle:	0.06	0.63	0.63	0.10	0.67	0.67	0.18	0.18	0.18	0.18	0.18	0.18
Volume/Cap:	0.10	0.59	0.59	0.09	0.55	0.55	0.03	0.03	0.03	0.55	0.55	0.55
Uniform Del:	44.5	10.8	10.8	40.8	8.5	8.5	34.1	34.1	34.1	37.6	37.6	37.6
IncremntDel:	0.4	0.8	0.8	0.2	0.6	0.6	0.0	0.0	0.0	2.7	2.7	2.7
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:	44.9	11.6	11.6	41.0	9.0	9.0	34.2	34.2	34.2	40.3	40.3	40.3
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:	44.9	11.6	11.6	41.0	9.0	9.0	34.2	34.2	34.2	40.3	40.3	40.3
LOS by Move:	D	B	B	D	A	A	C	C	C	D	D	D
HCM2kAvgQ:	0	12	12	0	11	11	0	0	0	5	5	5

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

w/ mitigation

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

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Intersection #5 San Juan Grade / Penzance

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.464	
Loss Time (sec):	9	Average Delay (sec/veh):	11.1	
Optimal Cycle:	32	Level Of Service:	B	

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Street Name:	San Juan Grade						Penzance					
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			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	1 0	1 0	0	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module:												
Base Vol:	10	422	86	11	404	4	2	5	4	61	4	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	422	86	11	404	4	2	5	4	61	4	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	13	528	108	14	505	5	3	6	5	76	5	8
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	13	528	108	14	505	5	3	6	5	76	5	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:	13	528	108	14	505	5	3	6	5	76	5	8
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.96	0.96	0.92	0.97	0.97	0.91	0.91	0.91	0.73	0.73	0.73
Lanes:	1.00	0.83	0.17	1.00	0.99	0.01	0.18	0.46	0.36	0.86	0.06	0.08
Final Sat.:	1769	1508	307	1753	1825	18	316	789	631	1188	78	117
Capacity Analysis Module:												
Vol/Sat:	0.01	0.35	0.35	0.01	0.28	0.28	0.01	0.01	0.01	0.06	0.06	0.06
Crit Moves:		****		****							****	
Green/Cycle:	0.14	0.72	0.72	0.06	0.64	0.64	0.13	0.13	0.13	0.13	0.13	0.13
Volume/Cap:	0.05	0.49	0.49	0.13	0.43	0.43	0.06	0.06	0.06	0.49	0.49	0.49
Uniform Del:	37.4	6.1	6.1	44.5	9.0	9.0	38.0	38.0	38.0	40.3	40.3	40.3
IncremntDel:	0.1	0.3	0.3	0.6	0.3	0.3	0.1	0.1	0.1	2.0	2.0	2.0
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:	37.4	6.4	6.4	45.1	9.2	9.2	38.1	38.1	38.1	42.3	42.3	42.3
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:	37.4	6.4	6.4	45.1	9.2	9.2	38.1	38.1	38.1	42.3	42.3	42.3
LOS by Move:	D	A	A	D	A	A	D	D	D	D	D	D
HCM2kAvgQ:	0	9	9	1	8	8	0	0	0	3	3	3

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

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

Intersection #5 San Juan Grade / Penzance

Average Delay (sec/veh): 15.4 Worst Case Level Of Service: F[132.6]

Street Name:	San Juan Grade						Penzance					
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			1 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	1	590	118	8	700	0	1	7	5	168	7	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:	1	590	118	8	700	0	1	7	5	168	7	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:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	1	702	140	10	833	0	1	8	6	200	8	12
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	702	140	10	833	0	1	8	6	200	8	12
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	833	xxxx	xxxxx	843	xxxx	xxxxx	1638	1698	833	1635	1627	773
Potent Cap.:	787	xxxx	xxxxx	785	xxxx	xxxxx	81	93	371	82	103	402
Move Cap.:	787	xxxx	xxxxx	785	xxxx	xxxxx	73	92	371	74	102	402
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	196	212	xxxxx	199	225	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	0.01	xxxx	xxxx	0.01	0.04	0.02	1.01	0.04	0.03
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.6	xxxx	xxxxx	9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
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	252	xxxxx	xxxx	205	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	10.1	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	20.2	xxxxx	xxxxx	133	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			20.2			132.6		
ApproachLOS:	*			*			C			F		

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

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

Intersection #5 San Juan Grade / Penzance

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: D[34.8]

Street Name:	San Juan Grade						Penzance					
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			1 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	9	590	97	13	680	3	1	5	3	92	7	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	590	97	13	680	3	1	5	3	92	7	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	10	641	105	14	739	3	1	5	3	100	8	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	641	105	14	739	3	1	5	3	100	8	16
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	742	xxxx	xxxxx	747	xxxx	xxxxx	1495	1535	741	1487	1484	694
Potent Cap.:	847	xxxx	xxxxx	853	xxxx	xxxxx	102	117	420	104	126	446
Move Cap.:	847	xxxx	xxxxx	853	xxxx	xxxxx	92	114	420	97	122	446
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	217	235	xxxxx	224	245	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	0.02	xxxx	xxxx	0.01	0.02	0.01	0.45	0.03	0.04
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.3	xxxx	xxxxx	9.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
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	273	xxxxx	xxxx	241	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	2.7	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	18.7	xxxxx	xxxxx	34.8	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			18.7			34.8		
ApproachLOS:	*			*			C			D		

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

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

Intersection #5 San Juan Grade / Penzance

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: D[25.6]

Street Name:	San Juan Grade						Penzance					
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			1 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	10	470	86	11	670	4	2	5	4	61	4	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	10	470	86	11	670	4	2	5	4	61	4	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	11	528	97	12	753	4	2	6	4	69	4	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	11	528	97	12	753	4	2	6	4	69	4	7
Critical Gap Module:												
Critical Gp:	4.2	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.3	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	757	xxxx	xxxxx	625	xxxx	xxxxx	1384	1427	755	1384	1381	576
Potent Cap.:	836	xxxx	xxxxx	947	xxxx	xxxxx	122	136	412	122	145	520
Move Cap.:	836	xxxx	xxxxx	947	xxxx	xxxxx	115	133	412	115	142	520
Total Cap:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	243	255	xxxxx	240	262	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	0.01	xxxx	xxxx	0.01	0.02	0.01	0.29	0.02	0.01
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	9.4	xxxx	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
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	293	xxxxx	xxxx	253	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	1.3	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	17.8	xxxxx	xxxxx	25.6	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			17.8			25.6		
ApproachLOS:	*			*			C			D		

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

APPENDIX H
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

San Juan Grade Road/Rogge Road

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

Intersection #6 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.729
Loss Time (sec):	0	Average Delay (sec/veh):	18.3
Optimal Cycle:	0	Level Of Service:	C

Street Name:	San Juan Grade						Rogge					
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 1	0	1 0	0 0	1!	0 0	1 0	0	1 0
Volume Module:												
Base Vol:	1	123	317	67	221	3	8	22	8	278	6	39
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	123	317	67	221	3	8	22	8	278	6	39
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
PHF Volume:	1	152	391	83	273	4	10	27	10	343	7	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	152	391	83	273	4	10	27	10	343	7	48
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:	1	152	391	83	273	4	10	27	10	343	7	48
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:	0.01	0.99	1.00	0.46	1.52	0.02	0.21	0.58	0.21	1.00	0.13	0.87
Final Sat.:	4	514	582	221	744	10	88	241	88	471	72	470
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.67	0.37	0.37	0.36	0.11	0.11	0.11	0.73	0.10	0.10
Crit Moves:			****	****			****			****		
Delay/Veh:	12.2	12.2	19.6	14.0	13.7	13.4	11.7	11.7	11.7	26.7	9.8	9.8
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:	12.2	12.2	19.6	14.0	13.7	13.4	11.7	11.7	11.7	26.7	9.8	9.8
LOS by Move:	B	B	C	B	B	B	B	B	B	D	A	A
ApproachDel:		17.5			13.7			11.7			24.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		17.5			13.7			11.7			24.4	
LOS by Appr:		C			B			B			C	
AllWayAvgQ:	0.4	0.4	1.8	0.5	0.5	0.5	0.1	0.1	0.1	2.2	0.1	0.1

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.488
Loss Time (sec):	0	Average Delay (sec/veh):	12.0
Optimal Cycle:	0	Level Of Service:	B

Street Name:	San Juan Grade						Rogge					
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 1	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	4	138	195	36	205	1	13	7	4	207	2	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	138	195	36	205	1	13	7	4	207	2	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	5	164	232	43	244	1	15	8	5	246	2	57
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	164	232	43	244	1	15	8	5	246	2	57
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:	5	164	232	43	244	1	15	8	5	246	2	57
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:	0.03	0.97	1.00	0.30	1.69	0.01	0.54	0.29	0.17	1.00	0.04	0.96
Final Sat.:	16	557	647	163	943	5	263	142	81	505	24	576
Capacity Analysis Module:												
Vol/Sat:	0.30	0.30	0.36	0.26	0.26	0.26	0.06	0.06	0.06	0.49	0.10	0.10
Crit Moves:			****	****				****		****		
Delay/Veh:	11.2	11.2	10.9	11.2	11.0	10.9	10.2	10.2	10.2	15.5	9.0	9.0
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:	11.2	11.2	10.9	11.2	11.0	10.9	10.2	10.2	10.2	15.5	9.0	9.0
LOS by Move:	B	B	B	B	B	B	B	B	B	C	A	A
ApproachDel:		11.0			11.0			10.2			14.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.0			11.0			10.2			14.3	
LOS by Appr:		B			B			B			B	
AllWayAvgQ:	0.4	0.4	0.5	0.3	0.3	0.3	0.1	0.1	0.1	0.8	0.1	0.1

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.371
Loss Time (sec):	0	Average Delay (sec/veh):	10.7
Optimal Cycle:	0	Level Of Service:	B

Street Name:	San Juan Grade						Rogge					
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 1	0	1 0	0 0	1! 0	0	1 0	0	1 0
Volume Module:												
Base Vol:	7	183	109	43	202	2	10	4	10	146	0	27
Growth Adj:	1.00	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	183	109	43	202	2	10	4	10	146	0	27
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	8	220	131	52	243	2	12	5	12	176	0	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	220	131	52	243	2	12	5	12	176	0	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:	8	220	131	52	243	2	12	5	12	176	0	33
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:	0.04	0.96	1.00	0.35	1.63	0.02	0.41	0.17	0.42	1.00	0.00	1.00
Final Sat.:	23	595	700	206	987	10	217	87	217	516	0	620
Capacity Analysis Module:												
Vol/Sat:	0.37	0.37	0.19	0.25	0.25	0.24	0.06	0.06	0.06	0.34	xxxx	0.05
Crit Moves:		****		****			****			****		
Delay/Veh:	11.5	11.5	8.8	10.5	10.3	10.2	9.7	9.7	9.7	12.5	0.0	8.4
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:	11.5	11.5	8.8	10.5	10.3	10.2	9.7	9.7	9.7	12.5	0.0	8.4
LOS by Move:	B	B	A	B	B	B	A	A	A	B	*	A
ApproachDel:		10.5			10.3			9.7			11.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.5			10.3			9.7			11.9	
LOS by Appr:		B			B			A			B	
AllWayAvgQ:	0.5	0.5	0.2	0.3	0.3	0.3	0.0	0.0	0.0	0.5	0.0	0.0

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	1.411
Loss Time (sec):	0	Average Delay (sec/veh):	133.6
Optimal Cycle:	0	Level Of Service:	F

Street Name:	San Juan Grade						Rogge					
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 1	0 1	0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	1	123	483	76	221	3	8	40	8	389	18	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	123	483	76	221	3	8	40	8	389	18	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	1	184	721	113	330	4	12	60	12	581	27	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	184	721	113	330	4	12	60	12	581	27	70
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:	1	184	721	113	330	4	12	60	12	581	27	70
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:	0.01	0.99	1.00	0.51	1.47	0.02	0.14	0.72	0.14	1.00	0.28	0.72
Final Sat.:	4	460	511	216	643	9	55	274	55	432	135	353
Capacity Analysis Module:												
Vol/Sat:	0.40	0.40	1.41	0.52	0.51	0.51	0.22	0.22	0.22	1.35	0.20	0.20
Crit Moves:			****	****				****		****		
Delay/Veh:	15.5	15.5	216.5	19.9	19.2	18.9	14.7	14.7	14.7	194.0	11.8	11.8
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:	15.5	15.5	216.5	19.9	19.2	18.9	14.7	14.7	14.7	194.0	11.8	11.8
LOS by Move:	C	C	F	C	C	C	B	B	B	F	B	B
ApproachDel:	175.4			19.4			14.7			167.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	175.4			19.4			14.7			167.9		
LOS by Appr:	F			C			B			F		
AllWayAvgQ:	0.6	0.6	29.3	1.0	1.0	1.0	0.3	0.3	0.3	21.9	0.2	0.2

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.871
Loss Time (sec):	0	Average Delay (sec/veh):	23.0
Optimal Cycle:	0	Level Of Service:	C

Street Name:	San Juan Grade						Rogge					
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 1	0	1 0	0 0	1! 0	0	1 0	0 1	0
Volume Module:												
Base Vol:	4	138	264	41	205	1	13	14	4	310	13	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	138	264	41	205	1	13	14	4	310	13	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
PHF Volume:	5	184	352	55	273	1	17	19	5	413	17	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	184	352	55	273	1	17	19	5	413	17	73
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:	5	184	352	55	273	1	17	19	5	413	17	73
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:	0.03	0.97	1.00	0.33	1.66	0.01	0.42	0.45	0.13	1.00	0.19	0.81
Final Sat.:	14	481	553	154	781	4	173	186	53	474	104	439
Capacity Analysis Module:												
Vol/Sat:	0.38	0.38	0.64	0.35	0.35	0.35	0.10	0.10	0.10	0.87	0.17	0.17
Crit Moves:			****	****					****	****		
Delay/Veh:	13.9	13.9	19.0	14.0	13.8	13.7	11.8	11.8	11.8	41.7	10.4	10.4
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:	13.9	13.9	19.0	14.0	13.8	13.7	11.8	11.8	11.8	41.7	10.4	10.4
LOS by Move:	B	B	C	B	B	B	B	B	B	E	B	B
ApproachDel:	17.2			13.8			11.8			36.1		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	17.2			13.8			11.8			36.1		
LOS by Appr:	C			B			B			E		
AllWayAvgQ:	0.6	0.6	1.5	0.5	0.5	0.5	0.1	0.1	0.1	4.2	0.2	0.2

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.540
Loss Time (sec):	0	Average Delay (sec/veh):	13.2
Optimal Cycle:	0	Level Of Service:	B

Street Name:	San Juan Grade						Rogge					
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 1	0 1	0	0 0	1! 0	0	1	0 0	1 0
Volume Module:												
Base Vol:	7	183	149	46	202	2	10	8	10	197	5	31
Growth Adj:	1.00	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	183	149	46	202	2	10	8	10	197	5	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
PHF Volume:	9	247	201	62	273	3	14	11	14	266	7	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	247	201	62	273	3	14	11	14	266	7	42
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:	9	247	201	62	273	3	14	11	14	266	7	42
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:	0.04	0.96	1.00	0.37	1.61	0.02	0.36	0.28	0.36	1.00	0.14	0.86
Final Sat.:	21	541	631	196	875	9	167	133	167	493	80	494
Capacity Analysis Module:												
Vol/Sat:	0.46	0.46	0.32	0.32	0.31	0.31	0.08	0.08	0.08	0.54	0.08	0.08
Crit Moves:		****		****				****		****		
Delay/Veh:	13.8	13.8	10.7	12.1	11.9	11.7	10.6	10.6	10.6	17.2	9.2	9.2
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:	13.8	13.8	10.7	12.1	11.9	11.7	10.6	10.6	10.6	17.2	9.2	9.2
LOS by Move:	B	B	B	B	B	B	B	B	B	C	A	A
ApproachDel:		12.4			11.9			10.6			16.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.4			11.9			10.6			16.0	
LOS by Appr:		B			B			B			C	
AllWayAvgQ:	0.8	0.8	0.4	0.4	0.4	0.4	0.1	0.1	0.1	1.0	0.1	0.1

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

w/mitigation

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

Intersection #6 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.659
Loss Time (sec):	12	Average Delay (sec/veh):	23.5
Optimal Cycle:	54	Level Of Service:	C

Street Name:	San Juan Grade						Rogge					
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			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	0	0 1!	0 0	1	0 1!	0 0
Volume Module:												
Base Vol:	1	123	483	76	221	3	8	40	8	389	18	47
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	123	483	76	221	3	8	40	8	389	18	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	1	184	721	113	330	4	12	60	12	581	27	70
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	184	721	113	330	4	12	60	12	581	27	70
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:	1	184	721	113	330	4	12	60	12	581	27	70
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.96	0.82	0.87	0.92	0.92	0.94	0.94	0.94	0.91	0.91	0.91
Lanes:	1.00	1.00	1.00	1.00	0.99	0.01	0.14	0.72	0.14	1.75	0.07	0.18
Final Sat.:	1736	1828	1554	1655	1716	23	254	1272	254	3018	120	312
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.46	0.07	0.19	0.19	0.05	0.05	0.05	0.19	0.22	0.22
Crit Moves:			****	****			****				****	
Green/Cycle:	0.11	0.36	0.70	0.10	0.36	0.36	0.07	0.07	0.07	0.34	0.34	0.34
Volume/Cap:	0.01	0.28	0.66	0.66	0.54	0.54	0.66	0.66	0.66	0.56	0.66	0.66
Uniform Del:	39.5	22.5	8.1	43.1	25.6	25.6	45.2	45.2	45.2	26.9	28.0	28.0
IncremntDel:	0.0	0.2	1.5	9.0	1.0	1.0	12.0	12.0	12.0	0.6	1.6	1.6
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:	39.5	22.7	9.6	52.1	26.6	26.6	57.3	57.3	57.3	27.5	29.6	29.6
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:	39.5	22.7	9.6	52.1	26.6	26.6	57.3	57.3	57.3	27.5	29.6	29.6
LOS by Move:	D	C	A	D	C	C	E	E	E	C	C	C
HCM2kAvgQ:	0	4	13	5	9	9	4	4	4	9	11	11

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

w/Mitigation

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

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Intersection #6 San Juan Grade / Rogge

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Cycle (sec):	100	Critical Vol./Cap.(X):	0.406
Loss Time (sec):	12	Average Delay (sec/veh):	21.2
Optimal Cycle:	36	Level Of Service:	C

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Street Name:	San Juan Grade						Rogge					
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			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Include		
Min. Green:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	0	0 1!	0 0	1	0 1!	0 0
Volume Module:												
Base Vol:	4	138	264	41	205	1	13	14	4	310	13	55
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	138	264	41	205	1	13	14	4	310	13	55
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
PHF Volume:	5	184	352	55	273	1	17	19	5	413	17	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	184	352	55	273	1	17	19	5	413	17	73
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:	5	184	352	55	273	1	17	19	5	413	17	73
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.94	0.80	0.90	0.94	0.94	0.96	0.96	0.96	0.88	0.88	0.88
Lanes:	1.00	1.00	1.00	1.00	0.99	0.01	0.42	0.45	0.13	1.69	0.06	0.25
Final Sat.:	1702	1792	1523	1702	1781	9	767	826	236	2830	97	412
Capacity Analysis Module:												
Vol/Sat:	0.00	0.10	0.23	0.03	0.15	0.15	0.02	0.02	0.02	0.15	0.18	0.18
Crit Moves:	****				****			****			****	
Green/Cycle:	0.06	0.26	0.67	0.15	0.35	0.35	0.06	0.06	0.06	0.41	0.41	0.41
Volume/Cap:	0.05	0.40	0.35	0.21	0.44	0.44	0.38	0.38	0.38	0.36	0.44	0.44
Uniform Del:	44.3	30.5	7.2	37.2	24.8	24.8	45.2	45.2	45.2	20.5	21.3	21.3
IncremntDel:	0.2	0.6	0.2	0.4	0.5	0.5	2.2	2.2	2.2	0.2	0.3	0.3
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:	44.5	31.1	7.4	37.6	25.3	25.3	47.4	47.4	47.4	20.7	21.6	21.6
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:	44.5	31.1	7.4	37.6	25.3	25.3	47.4	47.4	47.4	20.7	21.6	21.6
LOS by Move:	D	C	A	D	C	C	D	D	D	C	C	C
HCM2kAvgQ:	0	5	5	2	7	7	2	2	2	5	7	7

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

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w/mitigation

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

Intersection #6 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.319
Loss Time (sec):	12	Average Delay (sec/veh):	22.0
Optimal Cycle:	36	Level Of Service:	C

Street Name:	San Juan Grade						Rogge					
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			Split Phase			Split Phase		
Rights:		Ovl			Include			Include			Include	
Min. Green:	6	6	6	6	6	6	6	6	6	6	6	6
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0 1	0 1	1	0 0	1 0	0	0 1!	0 0	1	0 1!	0 0
Volume Module:												
Base Vol:	7	183	149	46	202	2	10	8	10	197	5	31
Growth Adj:	1.00	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	183	149	46	202	2	10	8	10	197	5	31
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
PHF Volume:	9	247	201	62	273	3	14	11	14	266	7	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	9	247	201	62	273	3	14	11	14	266	7	42
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:	9	247	201	62	273	3	14	11	14	266	7	42
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.97	0.83	0.91	0.96	0.96	0.92	0.92	0.92	0.93	0.93	0.93
Lanes:	1.00	1.00	1.00	1.00	0.99	0.01	0.36	0.28	0.36	1.73	0.04	0.23
Final Sat.:	1753	1845	1568	1736	1808	18	622	497	622	3062	66	407
Capacity Analysis Module:												
Vol/Sat:	0.01	0.13	0.13	0.04	0.15	0.15	0.02	0.02	0.02	0.09	0.10	0.10
Crit Moves:	****				****			****				****
Green/Cycle:	0.06	0.35	0.66	0.16	0.45	0.45	0.06	0.06	0.06	0.31	0.31	0.31
Volume/Cap:	0.09	0.38	0.20	0.23	0.34	0.34	0.34	0.34	0.34	0.28	0.34	0.34
Uniform Del:	44.4	24.3	6.7	36.8	17.9	17.9	44.7	44.7	44.7	26.4	26.8	26.8
IncremntDel:	0.4	0.4	0.1	0.4	0.2	0.2	1.8	1.8	1.8	0.1	0.2	0.2
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:	44.8	24.6	6.8	37.2	18.1	18.1	46.5	46.5	46.5	26.5	27.1	27.1
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:	44.8	24.6	6.8	37.2	18.1	18.1	46.5	46.5	46.5	26.5	27.1	27.1
LOS by Move:	D	C	A	D	B	B	D	D	D	C	C	C
HCM2kAvgQ:	0	6	2	2	5	5	1	1	1	4	4	4

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	1.003
Loss Time (sec):	0	Average Delay (sec/veh):	49.2
Optimal Cycle:	0	Level Of Service:	E

Street Name:	San Juan Grade						Rogge					
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 1	0	1 0	0 0	1! 0	0	1 0	0	1 0
Volume Module:												
Base Vol:	1	265	370	120	475	3	8	40	8	320	18	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	265	370	120	475	3	8	40	8	320	18	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
PHF Volume:	1	331	463	150	594	4	10	50	10	400	23	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	331	463	150	594	4	10	50	10	400	23	88
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:	1	331	463	150	594	4	10	50	10	400	23	88
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:	0.01	0.99	1.00	0.40	1.59	0.01	0.14	0.72	0.14	1.00	0.20	0.80
Final Sat.:	2	439	483	171	687	4	53	264	53	399	90	350
Capacity Analysis Module:												
Vol/Sat:	0.75	0.75	0.96	0.88	0.86	0.86	0.19	0.19	0.19	1.00	0.25	0.25
Crit Moves:			****	****				****		****		
Delay/Veh:	31.8	31.8	58.1	47.3	44.8	43.3	14.9	14.9	14.9	76.3	13.2	13.2
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:	31.8	31.8	58.1	47.3	44.8	43.3	14.9	14.9	14.9	76.3	13.2	13.2
LOS by Move:	D	D	F	E	E	E	B	B	B	F	B	B
ApproachDel:		47.1			45.3			14.9			62.7	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		47.1			45.3			14.9			62.7	
LOS by Appr:		E			E			B			F	
AllWayAvgQ:	2.6	2.6	6.4	4.3	3.9	3.9	0.2	0.2	0.2	7.2	0.3	0.3

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.797
Loss Time (sec):	0	Average Delay (sec/veh):	23.8
Optimal Cycle:	0	Level Of Service:	C

Street Name:	San Juan Grade						Rogge					
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 1	0	1 0	0 0	1!	0 0	1 0	0	1 0
Volume Module:												
Base Vol:	4	330	230	75	490	1	13	14	4	250	13	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	330	230	75	490	1	13	14	4	250	13	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	5	384	267	87	570	1	15	16	5	291	15	116
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	384	267	87	570	1	15	16	5	291	15	116
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:	5	384	267	87	570	1	15	16	5	291	15	116
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:	0.01	0.99	1.00	0.26	1.73	0.01	0.42	0.45	0.13	1.00	0.12	0.88
Final Sat.:	6	482	533	127	839	2	161	174	50	424	55	426
Capacity Analysis Module:												
Vol/Sat:	0.80	0.80	0.50	0.69	0.68	0.67	0.09	0.09	0.09	0.69	0.27	0.27
Crit Moves:	****			****				****		****		
Delay/Veh:	32.3	32.3	15.5	24.3	23.7	23.3	12.6	12.6	12.6	26.5	12.5	12.5
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:	32.3	32.3	15.5	24.3	23.7	23.3	12.6	12.6	12.6	26.5	12.5	12.5
LOS by Move:	D	D	C	C	C	C	B	B	B	D	B	B
ApproachDel:		25.5			23.8			12.6			22.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		25.5			23.8			12.6			22.1	
LOS by Appr:		D			C			B			C	
AllWayAvgQ:	3.0	3.0	0.9	1.9	1.8	1.8	0.1	0.1	0.1	1.8	0.3	0.3

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 San Juan Grade / Rogge

Cycle (sec):	100	Critical Vol./Cap.(X):	0.924
Loss Time (sec):	0	Average Delay (sec/veh):	26.4
Optimal Cycle:	0	Level Of Service:	D

Street Name:	San Juan Grade						Rogge					
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 1	0	1 0	0 0	1!	0 0	1 0	0	1 0
Volume Module:												
Base Vol:	7	410	140	90	450	2	10	8	10	180	5	60
Growth Adj:	1.00	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	410	140	90	450	2	10	8	10	180	5	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	8	482	165	106	529	2	12	9	12	212	6	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	8	482	165	106	529	2	12	9	12	212	6	71
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:	8	482	165	106	529	2	12	9	12	212	6	71
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:	0.02	0.98	1.00	0.33	1.66	0.01	0.36	0.28	0.36	1.00	0.08	0.92
Final Sat.:	9	522	580	170	864	4	147	118	147	428	38	455
Capacity Analysis Module:												
Vol/Sat:	0.92	0.92	0.28	0.62	0.61	0.61	0.08	0.08	0.08	0.50	0.16	0.16
Crit Moves:	****			****			****			****		
Delay/Veh:	47.4	47.4	11.0	20.0	19.4	19.0	11.9	11.9	11.9	18.2	11.0	11.0
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:	47.4	47.4	11.0	20.0	19.4	19.0	11.9	11.9	11.9	18.2	11.0	11.0
LOS by Move:	E	E	B	C	C	C	B	B	B	C	B	B
ApproachDel:		38.3			19.5			11.9			16.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		38.3			19.5			11.9			16.3	
LOS by Appr:		E			C			B			C	
AllWayAvgQ:	5.6	5.6	0.4	1.5	1.4	1.4	0.1	0.1	0.1	0.9	0.2	0.2

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

APPENDIX I
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

Kelton Drive/Rogge Road

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

Intersection #7 Kelton / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.9]

Street Name:	Kelton						Rogge					
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	0	0	1 0 1	0	0
Volume Module:												
Base Vol:	2	0	19	0	0	0	0	392	0	11	321	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:	2	0	19	0	0	0	0	392	0	11	321	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:	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
PHF Volume:	3	0	27	0	0	0	0	552	0	15	452	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	0	27	0	0	0	0	552	0	15	452	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:	1035	1035	552	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	552	xxxx	xxxxx
Potent Cap.:	259	234	537	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1008	xxxx	xxxxx
Move Cap.:	256	230	537	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1008	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.05	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	8.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	486	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	12.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		12.9			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

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

Intersection #7 Kelton / Rogge

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[12.1]

Street Name:	Kelton						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	1 0 1	0	0
Volume Module:												
Base Vol:	5	0	11	0	0	0	0	237	4	22	274	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:	5	0	11	0	0	0	0	237	4	22	274	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:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	7	0	16	0	0	0	0	343	6	32	397	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	0	16	0	0	0	0	343	6	32	397	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	807	807	346	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	349	xxxx	xxxxx
Potent Cap.:	353	317	701	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1182	xxxx	xxxxx
Move Cap.:	346	309	701	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1182	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	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	531	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	12.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		12.1			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 #7 Kelton / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: A[9.7]

Street Name:	Kelton						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0 0		0 0 0	0 0		0 0 0	1 0		1 0 1	0 0	
Volume Module:												
Base Vol:	1	0	11	0	0	0	0	202	7	14	179	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:	1	0	11	0	0	0	0	202	7	14	179	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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	1	0	13	0	0	0	0	230	8	16	203	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	13	0	0	0	0	230	8	16	203	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	234	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	238	xxxx	xxxxx
Potent Cap.:	557	495	811	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1335	xxxx	xxxxx
Move Cap.:	552	489	811	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1335	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	780	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	9.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	A	*	*	*	*	*	*	*	*	*	*
ApproachDel:		9.7		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 #7 Kelton / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[22.4]

Street Name:	Kelton						Rogge					
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	0	0	1 0 1	0	0
Volume Module:												
Base Vol:	2	0	22	0	0	0	0	588	0	13	452	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:	2	0	22	0	0	0	0	588	0	13	452	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:	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
PHF Volume:	3	0	37	0	0	0	0	997	0	22	766	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	0	37	0	0	0	0	997	0	22	766	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:	1807	1807	997	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	997	xxxx	xxxxx
Potent Cap.:	88	80	299	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	686	xxxx	xxxxx
Move Cap.:	86	77	299	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	686	xxxx	xxxxx
Volume/Cap:	0.04	0.00	0.12	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	10.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	248	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	22.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:		22.4			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #7 Kelton / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[15.6]

Street Name:	Kelton						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	1 0 1	0	0
Volume Module:												
Base Vol:	5	0	12	0	0	0	0	318	4	24	395	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:	5	0	12	0	0	0	0	318	4	24	395	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:	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
PHF Volume:	8	0	19	0	0	0	0	505	6	38	627	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	8	0	19	0	0	0	0	505	6	38	627	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1211	1211	508	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	511	xxxx	xxxxx
Potent Cap.:	203	184	569	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1029	xxxx	xxxxx
Move Cap.:	198	177	569	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1029	xxxx	xxxxx
Volume/Cap:	0.04	0.00	0.03	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	8.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	366	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	15.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:		15.6		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		C		*			*			*		

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

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

Intersection #7 Kelton / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[10.7]

Street Name:	Kelton						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	1 0 1	0	0
Volume Module:												
Base Vol:	1	0	12	0	0	0	0	249	7	15	239	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:	1	0	12	0	0	0	0	249	7	15	239	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:	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
PHF Volume:	1	0	17	0	0	0	0	351	10	21	337	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	17	0	0	0	0	351	10	21	337	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:	735	735	356	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	361	xxxx	xxxxx
Potent Cap.:	390	350	693	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx
Move Cap.:	385	343	693	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.02	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	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	653	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	10.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		10.7		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 #7 Kelton / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: C[16.4]

Street Name:	Kelton						Rogge					
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 0 0			1 0 1 0 0		
Volume Module:												
Base Vol:	2	0	22	0	0	0	0	520	0	13	405	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:	2	0	22	0	0	0	0	520	0	13	405	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:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	3	0	33	0	0	0	0	776	0	19	604	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	3	0	33	0	0	0	0	776	0	19	604	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:	1419	1419	776	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	776	xxxx	xxxxx
Potent Cap.:	152	138	401	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	831	xxxx	xxxxx
Move Cap.:	149	135	401	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	831	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	351	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	16.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	*	*	*
ApproachDel:		16.4			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #7 Kelton / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[14.2]

Street Name:	Kelton						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	1 0	1	0 0
Volume Module:												
Base Vol:	5	0	12	0	0	0	0	323	4	24	380	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:	5	0	12	0	0	0	0	323	4	24	380	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:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	7	0	17	0	0	0	0	461	6	34	543	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	0	17	0	0	0	0	461	6	34	543	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1076	1076	464	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	467	xxxx	xxxxx
Potent Cap.:	245	221	602	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1069	xxxx	xxxxx
Move Cap.:	239	214	602	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1069	xxxx	xxxxx
Volume/Cap:	0.03	0.00	0.03	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	8.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	416	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	14.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		14.2		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B		*			*			*		

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

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

Intersection #7 Kelton / Rogge

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[10.7]

Street Name:	Kelton						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	1 0	1	0 0
Volume Module:												
Base Vol:	1	0	12	0	0	0	0	290	7	15	330	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:	1	0	12	0	0	0	0	290	7	15	330	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:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	1	0	14	0	0	0	0	345	8	18	393	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	14	0	0	0	0	345	8	18	393	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	778	778	349	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	354	xxxx	xxxxx
Potent Cap.:	368	330	698	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1178	xxxx	xxxxx
Move Cap.:	363	325	698	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1178	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.02	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	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	652	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	10.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		10.7			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

APPENDIX J
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

Bollenbacher Drive/Rogge Road

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

Intersection #8 Bollenbacher / Rogge

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: B[11.8]

Street Name:	Bollenbacher						Rogge					
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 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	0	0	53	0	0	0	0	261	95	66	232	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	53	0	0	0	0	261	95	66	232	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	0	0	78	0	0	0	0	384	140	97	341	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	78	0	0	0	0	384	140	97	341	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	454	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	524	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	610	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1033	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	610	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1033	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.13	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
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 Unsignalized Method (Base Volume Alternative)

Intersection #8 Bollenbacher / Rogge

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[11.7]

Street Name:	Bollenbacher						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	1	0	30	0	0	0	0	261	95	28	199	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:	1	0	30	0	0	0	0	261	95	28	199	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:	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
PHF Volume:	2	0	45	0	0	0	0	395	144	42	302	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	45	0	0	0	0	395	144	42	302	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	854	854	467	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	539	xxxx	xxxxx
Potent Cap.:	332	298	600	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1004	xxxx	xxxxx
Move Cap.:	321	285	600	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1004	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.08	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	8.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	583	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.7			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 #8 Bollenbacher / Rogge

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: A[9.3]

Street Name:	Bollenbacher						Rogge					
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 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	0	0	11	0	0	0	0	159	12	21	165	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	11	0	0	0	0	159	12	21	165	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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	0	0	13	0	0	0	0	185	14	24	192	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	13	0	0	0	0	185	14	24	192	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	192	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	199	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	855	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1380	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	855	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1380	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	9.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
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	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	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 Unsignalized Method (Base Volume Alternative)

Intersection #8 Bollenbacher / Rogge

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[19.6]

Street Name:	Bollenbacher						Rogge					
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 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	0	0	56	0	0	0	0	460	95	68	365	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	56	0	0	0	0	460	95	68	365	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:	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
PHF Volume:	0	0	98	0	0	0	0	807	167	119	640	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	98	0	0	0	0	807	167	119	640	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	890	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	974	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	344	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	700	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	344	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	700	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.29	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.17	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	1.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.6	xxxx	xxxxx
Control Del:	xxxxx	xxxx	19.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.2	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	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	0.6	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	11.2	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	B	*	*
ApproachDel:		19.6			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #8 Bollenbacher / Rogge

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[13.8]

Street Name:	Bollenbacher						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	1	0	31	0	0	0	0	343	95	30	322	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:	1	0	31	0	0	0	0	343	95	30	322	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:	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
PHF Volume:	2	0	50	0	0	0	0	553	153	48	519	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	50	0	0	0	0	553	153	48	519	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1246	1246	630	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	706	xxxx	xxxxx
Potent Cap.:	194	175	485	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	869	xxxx	xxxxx
Move Cap.:	185	165	485	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	869	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	462	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		13.8			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 #8 Bollenbacher / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[10.0]

Street Name:	Bollenbacher						Rogge					
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 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	0	0	12	0	0	0	0	207	12	22	226	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	12	0	0	0	0	207	12	22	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:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	0	0	17	0	0	0	0	300	17	32	328	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	17	0	0	0	0	300	17	32	328	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	309	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	317	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	736	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1248	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	736	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1248	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.03	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	10.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
ApproachDel:		10.0			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

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

Intersection #8 Bollenbacher / Rogge

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: B[14.7]

Street Name:	Bollenbacher						Rogge					
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 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	0	0	56	0	0	0	0	392	95	68	318	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	56	0	0	0	0	392	95	68	318	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:	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
PHF Volume:	0	0	86	0	0	0	0	603	146	105	489	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	86	0	0	0	0	603	146	105	489	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	676	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	749	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	457	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	851	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	457	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	851	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	xxxxx	xxxx	14.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.8	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.8	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
ApproachDel:		14.7			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 #8 Bollenbacher / Rogge

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[13.1]

Street Name:	Bollenbacher						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	1	0	31	0	0	0	0	348	95	30	307	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:	1	0	31	0	0	0	0	348	95	30	307	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:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	1	0	46	0	0	0	0	519	142	45	458	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	46	0	0	0	0	519	142	45	458	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1138	1138	590	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	661	xxxx	xxxxx
Potent Cap.:	225	203	511	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	904	xxxx	xxxxx
Move Cap.:	216	193	511	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	904	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	490	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		13.1			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 #8 Bollenbacher / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: A[9.9]

Street Name:	Bollenbacher						Rogge					
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 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	0	0	12	0	0	0	0	240	12	22	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:	0	0	12	0	0	0	0	240	12	22	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:	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
PHF Volume:	0	0	14	0	0	0	0	289	14	27	386	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	14	0	0	0	0	289	14	27	386	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	296	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	304	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	748	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1229	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	748	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1229	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	xxxxx	xxxx	9.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
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	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
ApproachDel:	9.9			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	A			*			*			*		

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

APPENDIX K
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

Jasper Way/Rogge Road

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

Intersection #9 Jasper / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.3]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0 0		0 0 0	0 0		0 0 0	1 0		0 1	0 0 0	
Volume Module:												
Base Vol:	14	0	4	0	0	0	0	290	1	2	265	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:	14	0	4	0	0	0	0	290	1	2	265	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:	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
PHF Volume:	19	0	5	0	0	0	0	397	1	3	363	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	19	0	5	0	0	0	0	397	1	3	363	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:	766	766	398	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	399	xxxx	xxxxx
Potent Cap.:	373	335	656	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1149	xxxx	xxxxx
Move Cap.:	373	334	656	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1149	xxxx	xxxxx
Volume/Cap:	0.05	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	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	412	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	14.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		14.3			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 #9 Jasper / Rogge

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[13.3]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	16	0	7	0	0	0	0	268	21	7	225	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:	16	0	7	0	0	0	0	268	21	7	225	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:	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
PHF Volume:	22	0	9	0	0	0	0	362	28	9	304	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	22	0	9	0	0	0	0	362	28	9	304	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	699	699	376	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	391	xxxx	xxxxx
Potent Cap.:	409	366	675	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1141	xxxx	xxxxx
Move Cap.:	406	363	675	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1141	xxxx	xxxxx
Volume/Cap:	0.05	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	462	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		13.3		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 #9 Jasper / Rogge

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[9.8]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	4	0	5	0	0	0	0	151	6	6	180	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	0	5	0	0	0	0	151	6	6	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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	4	0	5	0	0	0	0	161	6	6	191	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	0	5	0	0	0	0	161	6	6	191	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:	368	368	164	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	167	xxxx	xxxxx
Potent Cap.:	636	564	886	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1417	xxxx	xxxxx
Move Cap.:	634	562	886	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1417	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	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	753	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	9.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
Shared LOS:	*	A	*	*	*	*	*	*	*	A	*	*
ApproachDel:		9.8		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 #9 Jasper / Rogge

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: E[35.4]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	14	0	7	0	0	0	0	492	1	4	400	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:	14	0	7	0	0	0	0	492	1	4	400	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:	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
PHF Volume:	25	0	12	0	0	0	0	863	2	7	702	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	25	0	12	0	0	0	0	863	2	7	702	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:	1580	1580	864	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	865	xxxx	xxxxx
Potent Cap.:	121	110	357	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	770	xxxx	xxxxx
Move Cap.:	121	109	357	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	770	xxxx	xxxxx
Volume/Cap:	0.20	0.00	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	155	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	35.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.7	xxxx	xxxxx
Shared LOS:	*	E	*	*	*	*	*	*	*	A	*	*
ApproachDel:		35.4		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		E		*			*			*		

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

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

Intersection #9 Jasper / Rogge

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: C[19.3]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	16	0	8	0	0	0	0	351	21	9	350	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:	16	0	8	0	0	0	0	351	21	9	350	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:	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
PHF Volume:	24	0	12	0	0	0	0	532	32	14	530	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	24	0	12	0	0	0	0	532	32	14	530	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1105	1105	548	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	564	xxxx	xxxxx
Potent Cap.:	235	212	540	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	983	xxxx	xxxxx
Move Cap.:	233	209	540	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	983	xxxx	xxxxx
Volume/Cap:	0.10	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	287	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	19.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	A	*	*
ApproachDel:		19.3			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #9 Jasper / Rogge

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.2]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	4	0	6	0	0	0	0	200	6	7	242	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	0	6	0	0	0	0	200	6	7	242	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:	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
PHF Volume:	6	0	8	0	0	0	0	278	8	10	336	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	0	8	0	0	0	0	278	8	10	336	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:	638	638	282	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	286	xxxx	xxxxx
Potent Cap.:	444	397	762	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1282	xxxx	xxxxx
Move Cap.:	442	394	762	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1282	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	591	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.2			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

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

Intersection #9 Jasper / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[20.6]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	14	0	7	0	0	0	0	424	1	4	353	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:	14	0	7	0	0	0	0	424	1	4	353	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:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	21	0	10	0	0	0	0	633	1	6	527	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	21	0	10	0	0	0	0	633	1	6	527	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:	1172	1172	634	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	634	xxxx	xxxxx
Potent Cap.:	214	194	483	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	939	xxxx	xxxxx
Move Cap.:	213	193	483	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	939	xxxx	xxxxx
Volume/Cap:	0.10	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	262	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	20.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	A	*	*
ApproachDel:		20.6			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #9 Jasper / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[16.8]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module:												
Base Vol:	16	0	8	0	0	0	0	356	21	9	335	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:	16	0	8	0	0	0	0	356	21	9	335	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:	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
PHF Volume:	22	0	11	0	0	0	0	481	28	12	453	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	22	0	11	0	0	0	0	481	28	12	453	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	972	972	495	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	509	xxxx	xxxxx
Potent Cap.:	282	254	578	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1030	xxxx	xxxxx
Move Cap.:	280	251	578	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1030	xxxx	xxxxx
Volume/Cap:	0.08	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	338	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	16.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	A	*	*
ApproachDel:		16.8			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #9 Jasper / Rogge

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.4]

Street Name:	Jasper						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	4	0	6	0	0	0	0	240	6	7	330	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	4	0	6	0	0	0	0	240	6	7	330	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:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	5	0	7	0	0	0	0	279	7	8	384	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	5	0	7	0	0	0	0	279	7	8	384	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	683	683	283	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	286	xxxx	xxxxx
Potent Cap.:	418	374	761	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1248	xxxx	xxxxx
Move Cap.:	416	372	761	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1248	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	572	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.4			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

APPENDIX L
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

Jade Drive/Rogge Road

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

Intersection #10 Jade / Rogge

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.8]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	7	0	28	0	0	0	0	291	3	9	260	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	28	0	0	0	0	291	3	9	260	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:	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
PHF Volume:	9	0	37	0	0	0	0	383	4	12	342	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	0	37	0	0	0	0	383	4	12	342	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:	751	751	385	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	387	xxxx	xxxxx
Potent Cap.:	382	342	667	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1161	xxxx	xxxxx
Move Cap.:	379	339	667	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1161	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	579	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
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 Unsignalized Method (Base Volume Alternative)

Intersection #10 Jade / Rogge

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: A[9.5]

Street Name:	Jade						Rogge					
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	0	0 0	1!	0 0
Volume Module:												
Base Vol:	3	0	16	0	0	0	0	266	9	11	229	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	16	0	0	0	0	266	9	11	229	6
User Adj:	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
PHF Adj:	1.00	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	0	11	0	0	0	0	189	6	8	163	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	11	0	0	0	0	189	6	8	163	4
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	372	375	192	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	195	xxxx	xxxxx
Potent Cap.:	632	559	855	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1348	xxxx	xxxxx
Move Cap.:	630	556	855	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1348	xxxx	xxxxx
Volume/Cap:	0.00	0.00	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	809	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	9.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	A	*	*	*	*	*	*	*	*	*	*
ApproachDel:		9.5		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 #10 Jade / Rogge

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: A[9.8]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0 0		0 0 0	0 0		0 0 0	1 0		0 1 0	0 0	
Volume Module:												
Base Vol:	6	0	13	0	0	0	0	149	7	14	180	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	0	13	0	0	0	0	149	7	14	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:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	6	0	14	0	0	0	0	160	8	15	194	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	6	0	14	0	0	0	0	160	8	15	194	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:	388	388	164	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	168	xxxx	xxxxx
Potent Cap.:	620	550	886	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1416	xxxx	xxxxx
Move Cap.:	615	544	886	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1416	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	778	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	9.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
Shared LOS:	*	A	*	*	*	*	*	*	*	A	*	*
ApproachDel:		9.8			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 #10 Jade / Rogge

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: D[26.9]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	7	0	60	0	0	0	0	496	3	30	397	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	0	60	0	0	0	0	496	3	30	397	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:	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
PHF Volume:	12	0	105	0	0	0	0	870	5	53	696	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	12	0	105	0	0	0	0	870	5	53	696	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:	1675	1675	873	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	875	xxxx	xxxxx
Potent Cap.:	106	96	353	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	763	xxxx	xxxxx
Move Cap.:	100	90	353	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	763	xxxx	xxxxx
Volume/Cap:	0.12	0.00	0.30	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	279	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	2.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	26.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.1	xxxx	xxxxx
Shared LOS:	*	D	*	*	*	*	*	*	*	B	*	*
ApproachDel:		26.9			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		D			*			*			*	

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

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

Intersection #10 Jade / Rogge

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[13.8]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 0 1!	0	0
Volume Module:												
Base Vol:	3	0	30	0	0	0	0	350	9	32	356	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	30	0	0	0	0	350	9	32	356	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
PHF Volume:	5	0	47	0	0	0	0	547	14	50	556	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	5	0	47	0	0	0	0	547	14	50	556	9
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1215	1220	554	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	561	xxxx	xxxxx
Potent Cap.:	202	182	536	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	986	xxxx	xxxxx
Move Cap.:	194	172	536	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	986	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	462	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	13.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		13.8		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 #10 Jade / Rogge

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[11.1]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	6	0	20	0	0	0	0	199	7	24	243	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	0	20	0	0	0	0	199	7	24	243	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:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	9	0	29	0	0	0	0	284	10	34	347	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	0	29	0	0	0	0	284	10	34	347	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:	705	705	289	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	294	xxxx	xxxxx
Potent Cap.:	406	363	755	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1273	xxxx	xxxxx
Move Cap.:	397	353	755	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1273	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.04	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	7.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	625	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.1			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 #10 Jade / Rogge

Average Delay (sec/veh): 1.6 Worst Case Level Of Service: C[16.6]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	7	0	61	0	0	0	0	428	3	31	350	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	61	0	0	0	0	428	3	31	350	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:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	10	0	91	0	0	0	0	639	4	46	522	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	0	91	0	0	0	0	639	4	46	522	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:	1256	1256	641	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	643	xxxx	xxxxx
Potent Cap.:	191	173	478	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	932	xxxx	xxxxx
Move Cap.:	184	164	478	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	932	xxxx	xxxxx
Volume/Cap:	0.06	0.00	0.19	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	410	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Shrd ConDel:	xxxxx	16.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.1	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	A	*	*
ApproachDel:		16.6			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #10 Jade / Rogge

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[13.0]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	3	0	30	0	0	0	0	355	9	32	341	6
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3	0	30	0	0	0	0	355	9	32	341	6
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	4	0	43	0	0	0	0	507	13	46	487	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	4	0	43	0	0	0	0	507	13	46	487	9
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1096	1101	514	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	520	xxxx	xxxxx
Potent Cap.:	238	214	565	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1021	xxxx	xxxxx
Move Cap.:	230	204	565	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1021	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.08	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	8.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	499	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	13.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		13.0			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

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

Intersection #10 Jade / Rogge

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: B[11.1]

Street Name:	Jade						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module:												
Base Vol:	6	0	20	0	0	0	0	236	7	24	333	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6	0	20	0	0	0	0	236	7	24	333	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:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	7	0	24	0	0	0	0	281	8	29	396	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	7	0	24	0	0	0	0	281	8	29	396	0
Critical Gap Module:												
Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	739	739	285	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	289	xxxx	xxxxx
Potent Cap.:	388	348	759	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1244	xxxx	xxxxx
Move Cap.:	381	340	759	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1244	xxxx	xxxxx
Volume/Cap:	0.02	0.00	0.03	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	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	617	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd ConDel:	xxxxx	11.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		11.1			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

APPENDIX M
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

High School Driveway #1/Rogge Road

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

Intersection #11 Driveway 1 / Rogge

Average Delay (sec/veh): 18.5 Worst Case Level Of Service: F[99.8]

Street Name:	Driveway 1						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	158	0	34	0	0	0	0	386	170	43	269	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:	158	0	34	0	0	0	0	386	170	43	269	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:	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
PHF Volume:	282	0	61	0	0	0	0	689	304	77	480	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	282	0	61	0	0	0	0	689	304	77	480	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1475	xxxx	841	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	993	xxxx	xxxxx
Potent Cap.:	141	xxxx	368	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	689	xxxx	xxxxx
Move Cap.:	129	xxxx	368	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	689	xxxx	xxxxx
Total Cap:	263	235	xxxxx	159	181	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	1.07	xxxx	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.11	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	11.5	xxxx	0.6	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx
Control Del:	117.7	xxxx	16.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.9	xxxx	xxxxx
LOS by Move:	F	*	C	*	*	*	*	*	*	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:	99.8			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	F			*			*			*		

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

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

Intersection #11 Driveway 1 / Rogge

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: C[20.3]

Street Name:	Driveway 1						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	105	0	20	0	0	0	0	282	98	24	289	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:	105	0	20	0	0	0	0	282	98	24	289	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:	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
PHF Volume:	167	0	32	0	0	0	0	448	156	38	459	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	167	0	32	0	0	0	0	448	156	38	459	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1060	xxxx	525	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	603	xxxx	xxxxx
Potent Cap.:	250	xxxx	556	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	950	xxxx	xxxxx
Move Cap.:	243	xxxx	556	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	950	xxxx	xxxxx
Total Cap:	376	336	xxxxx	304	307	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.44	xxxx	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.04	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	2.2	xxxx	0.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Control Del:	22.0	xxxx	11.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	C	*	B	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:		20.3			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #11 Driveway 1 / Rogge

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[12.2]

Street Name:	Driveway 1						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	46	0	11	0	0	0	0	192	27	7	221	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:	46	0	11	0	0	0	0	192	27	7	221	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	68	0	16	0	0	0	0	282	40	10	325	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	68	0	16	0	0	0	0	282	40	10	325	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	648	xxxx	302	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	322	xxxx	xxxxx
Potent Cap.:	438	xxxx	742	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1243	xxxx	xxxxx
Move Cap.:	435	xxxx	742	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1243	xxxx	xxxxx
Total Cap:	534	474	xxxxx	477	464	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.13	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.4	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	12.7	xxxx	10.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
LOS by Move:	B	*	A	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	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 (Base Volume Alternative)

Intersection #11 Driveway 1 / Rogge

Average Delay (sec/veh): 200.4 Worst Case Level Of Service: F[850.2]

Street Name:	Driveway 1									Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R			
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled					
Rights:	Include			Include			Include			Include					
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																		
Base Vol:	71	0	253	0	0	0	0	412	77	278	310	0						
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00						
Initial Bse:	71	0	253	0	0	0	0	412	77	278	310	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:	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55						
PHF Volume:	129	0	460	0	0	0	0	749	140	505	564	0						
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0						
FinalVolume:	129	0	460	0	0	0	0	749	140	505	564	0						
Critical Gap Module:																		
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx						
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx						
Capacity Module:																		
Cnflict Vol:	2394	xxxx	819	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	889	xxxx	xxxxx						
Potent Cap.:	38	xxxx	378	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	754	xxxx	xxxxx						
Move Cap.:	17	xxxx	378	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	754	xxxx	xxxxx						
Volume/Cap:	7.47	xxxx	1.22	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.67	xxxx	xxxx						
Level Of Service Module:																		
2Way95thQ:	16.8	xxxx	19.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	5.2	xxxx	xxxxx						
Control Del:	3346	xxxx	149.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	18.9	xxxx	xxxxx						
LOS by Move:	F	*	F	*	*	*	*	*	*	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:	850.2			xxxxxx			xxxxxx			xxxxxx								
ApproachLOS:	F			*			*			*								

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

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

Intersection #11 Driveway 1 / Rogge

Average Delay (sec/veh): 9.4 Worst Case Level Of Service: E[40.7]

Street Name:	Driveway 1						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	48	0	165	0	0	0	0	341	44	160	331	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:	48	0	165	0	0	0	0	341	44	160	331	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:	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
PHF Volume:	75	0	258	0	0	0	0	533	69	250	517	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	75	0	258	0	0	0	0	533	69	250	517	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.2	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.3	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1584	xxxx	567	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	602	xxxx	xxxxx
Potent Cap.:	121	xxxx	527	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	952	xxxx	xxxxx
Move Cap.:	96	xxxx	527	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	952	xxxx	xxxxx
Volume/Cap:	0.78	xxxx	0.49	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.26	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	4.1	xxxx	2.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.1	xxxx	xxxxx
Control Del:	117.8	xxxx	18.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.1	xxxx	xxxxx
LOS by Move:	F	*	C	*	*	*	*	*	*	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:		40.7			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		E			*			*			*	

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

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

Intersection #11 Driveway 1 / Rogge

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[12.9]

Street Name:	Driveway 1						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	0	1 0	1 0	1	0 0
Volume Module:												
Base Vol:	21	0	74	0	0	0	0	244	12	44	336	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:	21	0	74	0	0	0	0	244	12	44	336	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:	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
PHF Volume:	30	0	104	0	0	0	0	344	17	62	473	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	30	0	104	0	0	0	0	344	17	62	473	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	949	xxxx	352	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	361	xxxx	xxxxx
Potent Cap.:	291	xxxx	696	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx
Move Cap.:	280	xxxx	696	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1204	xxxx	xxxxx
Volume/Cap:	0.11	xxxx	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.05	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.4	xxxx	0.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	19.4	xxxx	11.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx
LOS by Move:	C	*	B	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:		12.9			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

APPENDIX N
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

High School Driveway #2/Rogge Road

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

Intersection #12 Driveway 2 / Rogge

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.0]

Street Name:	Driveway 2						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 0	0 0	0	0 0 0	1 0	0	1 0	1 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	353	67	23	306	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	353	67	23	306	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:	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
PHF Volume:	0	0	0	0	0	0	0	543	103	35	471	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	543	103	35	471	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	646	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	930	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	930	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	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	9.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #12 Driveway 2 / Rogge

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[8.3]

Street Name:	Driveway 2									Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0
Volume Module:																				
Base Vol:	0	0	0	0	0	0	0	302	0	6	307	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	302	0	6	307	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	0	0	0	0	0	0	0	444	0	9	451	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	444	0	9	451	0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	444	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1100	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1100	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #12 Driveway 2 / Rogge

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[7.8]

Street Name:	Driveway 2						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	173	30	7	228	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	173	30	7	228	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:	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
PHF Volume:	0	0	0	0	0	0	0	231	40	9	304	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	231	40	9	304	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	271	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1299	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1299	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #12 Driveway 2 / Rogge

Average Delay (sec/veh): 1.3 Worst Case Level Of Service: B[15.0]

Street Name:	Driveway 2						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 0	0 0	0	0 0 0	1 0	0	1 0	1 0	0
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	635	30	116	582	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	635	30	116	582	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
PHF Volume:	0	0	0	0	0	0	0	1155	55	211	1058	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1155	55	211	1058	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1209	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	570	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	570	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.37	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1.7	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15.0	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:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #12 Driveway 2 / Rogge

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[9.4]

Street Name:	Driveway 2						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 0 0 0			0 0 1 0 0			1 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	506	0	6	485	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	506	0	6	485	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:	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
PHF Volume:	0	0	0	0	0	0	0	778	0	9	746	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	778	0	9	746	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	778	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	825	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	825	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #12 Driveway 2 / Rogge

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: A[8.6]

Street Name:	Driveway 2						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			0 0 0 0 0			0 0 0 1 0			1 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	318	14	49	380	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	318	14	49	380	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:	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
PHF Volume:	0	0	0	0	0	0	0	454	20	70	543	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	454	20	70	543	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	474	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1072	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1072	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.2	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

APPENDIX O
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

High School Driveway #3/Rogge Road

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

Intersection #13 Driveway 3 / Rogge

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

Street Name:	Driveway 3						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	353	0	0	329	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	353	0	0	329	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	0	0	0	0	0	0	0	519	0	0	484	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	519	0	0	484	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1003	xxxx	519	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	271	xxxx	561	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	271	xxxx	561	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	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	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #13 Driveway 3 / Rogge

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: C[17.0]

Street Name:	Driveway 3						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	43	0	10	0	0	0	0	302	0	0	270	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:	43	0	10	0	0	0	0	302	0	0	270	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:	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
PHF Volume:	64	0	15	0	0	0	0	451	0	0	403	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	64	0	15	0	0	0	0	451	0	0	403	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	854	xxxx	451	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	332	xxxx	613	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	332	xxxx	613	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.19	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.7	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	18.4	xxxx	11.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	C	*	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:	17.0			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

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

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

Intersection #13 Driveway 3 / Rogge

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[11.5]

Street Name:	Driveway 3						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	27	0	7	0	0	0	0	173	0	0	208	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:	27	0	7	0	0	0	0	173	0	0	208	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:	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
PHF Volume:	34	0	9	0	0	0	0	219	0	0	263	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	34	0	9	0	0	0	0	219	0	0	263	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	482	xxxx	219	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	547	xxxx	826	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	547	xxxx	826	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.06	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	0.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	12.0	xxxx	9.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	B	*	A	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:		11.5			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 #13 Driveway 3 / Rogge

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

Street Name:	Driveway 3						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	635	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	635	0	0	698	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
PHF Volume:	0	0	0	0	0	0	0	1155	0	0	1269	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1155	0	0	1269	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	2424	xxxx	1155	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	36	xxxx	242	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	36	xxxx	242	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	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	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #13 Driveway 3 / Rogge

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: C[22.5]

Street Name:	Driveway 3						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	19	0	68	0	0	0	0	506	0	0	472	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:	19	0	68	0	0	0	0	506	0	0	472	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:	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
PHF Volume:	30	0	106	0	0	0	0	791	0	0	738	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	30	0	106	0	0	0	0	791	0	0	738	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1528	xxxx	791	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	131	xxxx	393	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	131	xxxx	393	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.23	xxxx	0.27	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.8	xxxx	1.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	40.5	xxxx	17.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	E	*	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:		22.5			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #13 Driveway 3 / Rogge

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[13.7]

Street Name:	Driveway 3						Rogge					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 0 1			0 0 0 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	12	0	44	0	0	0	0	318	0	0	417	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	44	0	0	0	0	318	0	0	417	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	18	0	65	0	0	0	0	468	0	0	613	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	18	0	65	0	0	0	0	468	0	0	613	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1081	xxxx	468	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	243	xxxx	599	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	243	xxxx	599	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	0.07	xxxx	0.11	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.2	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	21.0	xxxx	11.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	C	*	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:		13.7			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

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

APPENDIX P
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

High School Driveway #4/Rogge Road

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

Intersection #14 Bus Exit / Rogge

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.6]

Street Name:	Bus Exit						Rogge					
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 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	12	0	0	0	0	353	0	0	329	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	12	0	0	0	0	353	0	0	329	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	0	0	18	0	0	0	0	519	0	0	484	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	18	0	0	0	0	519	0	0	484	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	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	519	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	561	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	561	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	11.6	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:		11.6			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 #14 Bus Exit / Rogge

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[11.1]

Street Name:	Bus Exit						Rogge					
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 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	12	0	0	0	0	312	0	0	270	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	12	0	0	0	0	312	0	0	270	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:	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
PHF Volume:	0	0	18	0	0	0	0	459	0	0	397	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	18	0	0	0	0	459	0	0	397	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	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	459	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	606	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	606	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	11.1	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:		11.1			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 #14 Bus Exit / Rogge

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

Street Name:	Bus Exit						Rogge					
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 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	180	0	0	208	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	180	0	0	208	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:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	0	0	0	0	0	0	214	0	0	248	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	214	0	0	248	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	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	214	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	831	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	831	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	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	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

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

Intersection #14 Bus Exit / Rogge

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: C[20.6]

Street Name:	Bus Exit						Rogge					
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 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	6	0	0	0	0	635	0	0	698	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	6	0	0	0	0	635	0	0	698	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
PHF Volume:	0	0	11	0	0	0	0	1155	0	0	1269	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	11	0	0	0	0	1155	0	0	1269	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	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	1155	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	242	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	242	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.05	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	20.6	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:		20.6			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

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

Intersection #14 Bus Exit / Rogge

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[16.2]

Street Name:	Bus Exit						Rogge					
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 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	12	0	0	0	0	574	0	0	472	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	12	0	0	0	0	574	0	0	472	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:	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
PHF Volume:	0	0	19	0	0	0	0	897	0	0	738	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	19	0	0	0	0	897	0	0	738	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	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	897	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	341	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	341	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	0.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	16.2	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:	16.2			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

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

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

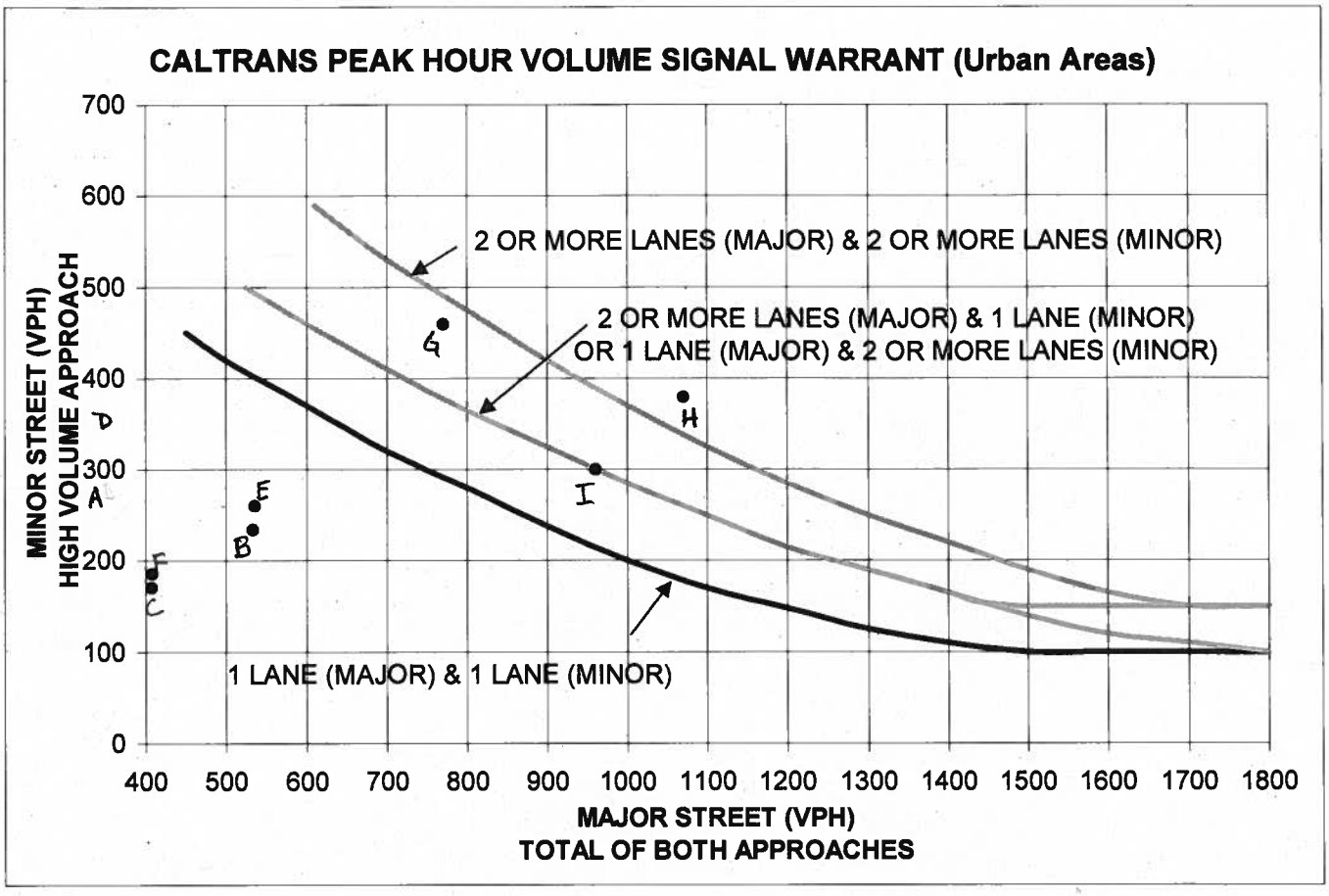
Intersection #14 Bus Exit / Rogge

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

Street Name:	Bus Exit						Rogge					
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 0 0			0 0 1 0 0		
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	362	0	0	417	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	362	0	0	417	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:	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
PHF Volume:	0	0	0	0	0	0	0	525	0	0	604	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	525	0	0	604	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.2	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	525	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	557	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	557	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	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	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

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

APPENDIX Q
WARRANT WORKSHEETS



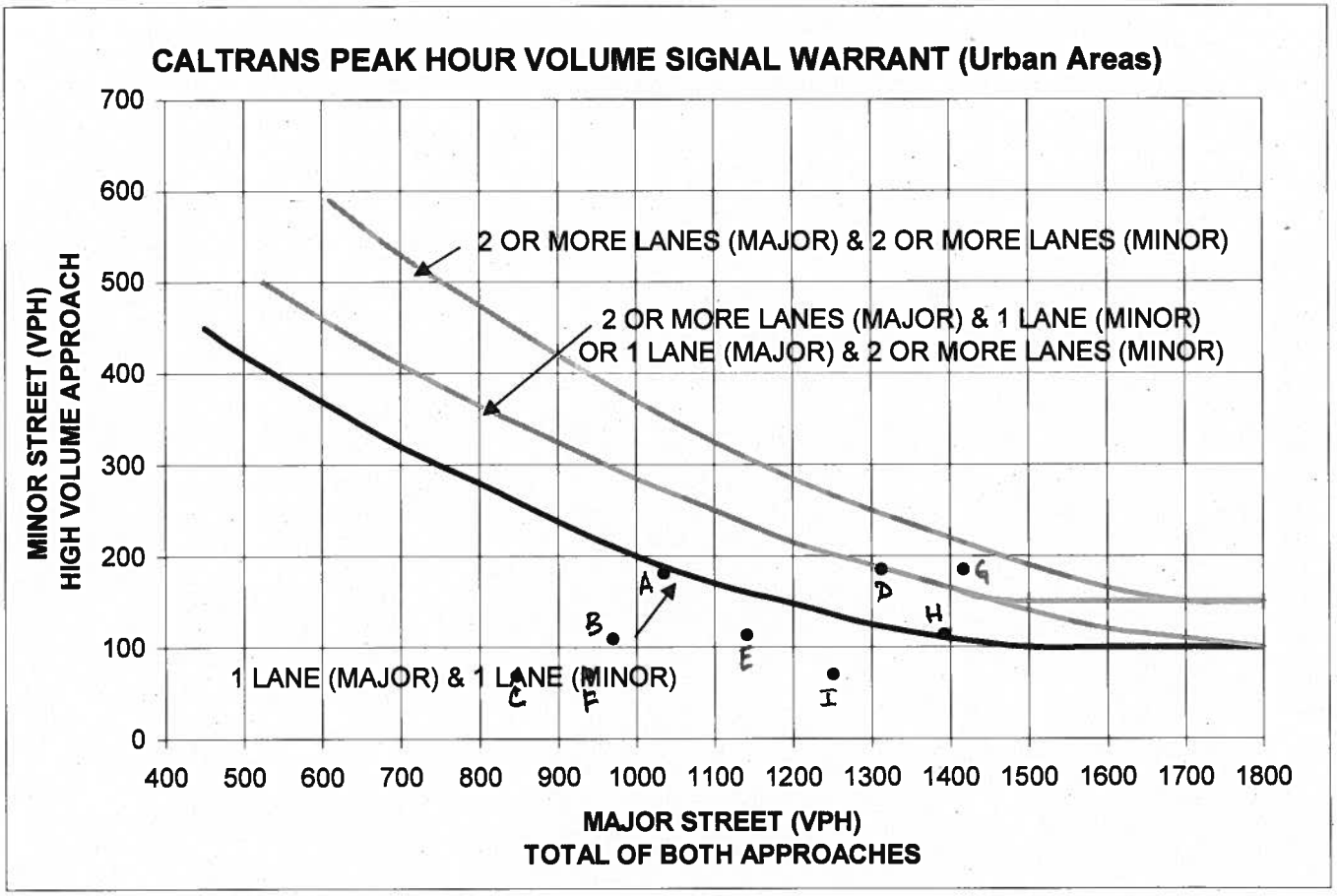
Scenario	Major St San Juan Gr. North/South	Minor St Rogge EB L + N L	Warrant Met?
A. Existing AM	345	284	No
B. Existing Mid	533	235	No
C. Existing PM	407	171	No
D. Ex+ProPh1 AM	351	342	No
E. Ex+ProPh1 Mid	535	261	No
F. Ex+ProPh1 PM	408	186	No
G. GPBO AM	770	460	Yes
H. GPBO MD	1070	380	Yes
I. GPBO PM	960	300	Yes

Notes:

1. 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

Intersection #5 San Juan Grade - Penzance



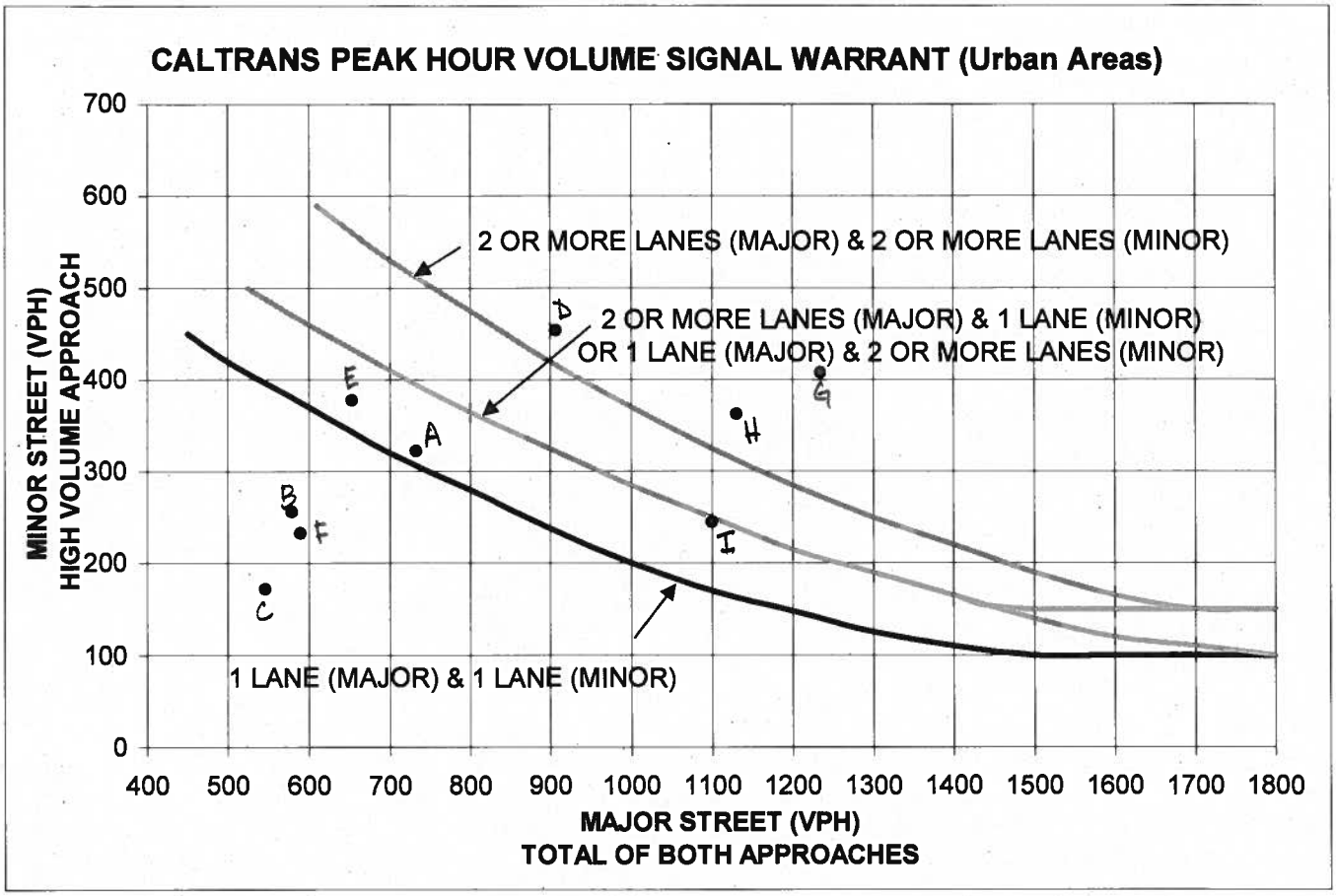
Scenario	Major St San Juan Gr. North/South	Minor St Penzance East/West	Warrant Met?
A. Existing AM	1035	181	No
B. Existing Mid	969	110	No
C. Existing PM	846	69	No
D. Ex+ProPh1 AM	**1312**	**185**	**Yes**
E. Ex+ProPh1 Mid	1141	114	No
F. Ex+ProPh1 PM	937	71	No
G. GPBO AM	**1417**	**185**	**Yes**
H. GPBO MD	**1392**	**114**	**Yes**
I. GPBO PM	1251	71	No

Notes:

1. 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

Intersection #6 San Juan Grade - Rogge



Scenario	Major St San Juan Gr. North/South	Minor St Rogge East/West	Warrant Met?
A. Existing AM	**732**	**323**	**Yes**
B. Existing Mid	579	257	No
C. Existing PM	546	173	No
D. Ex+ProPh1 AM	**907**	**454**	**Yes**
E. Ex+ProPh1 Mid	**653**	**378**	**Yes**
F. Ex+ProPh1 PM	589	233	No
G. GPBO AM	**1234**	**408**	**Yes**
H. GPBO MD	**1130**	**363**	**Yes**
I. GPBO PM	**1099**	**245**	**Yes**

Notes:

1. 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

APPENDIX R
PEAK HOUR FACTOR CALCULATION

SALINAS #5 HIGH SCHOOL
PEAK HOUR FACTOR CALCULATION

	Natividad/Rogge Intersection 1			Natividad/Boronda Intersection 2			San Juan Grade/Boronda Intersection 3			San Juan Grade/Russell Intersection 4			San Juan Grade/Penzance Intersection 5			San Juan Grade/Rogge Intersection 6			Kelton/Rogge Intersection 7		
	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
PROJECT PHASE 1 CONDITION																					
Existing Volume	899	1013	713	2219	2784	2839	2500	2868	2892	1630	1280	1060	1223	1085	925	1093	860	743	745	553	414
Existing PHF	0.77	0.8	0.9	0.86	0.89	0.98	0.87	0.94	0.97	0.78	0.77	0.92	0.86	0.94	0.89	0.81	0.84	0.83	0.71	0.69	0.88
% in peak 15 min	32%	31%	28%	29%	28%	26%	29%	27%	26%	32%	32%	27%	29%	27%	28%	31%	30%	30%	35%	36%	28%
Volume in peak 15	292	317	198	645	782	724	718	763	745	522	416	288	356	289	260	337	256	224	262	200	118
Project Volume	100	60	32	90	54	29	153	96	50	277	172	91	287	179	94	324	202	107	332	205	109
Project PHF	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
% in peak 15 min	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%
Volume in peak 15	60	29	20	54	26	18	91	46	31	165	83	56	171	86	57	193	97	65	198	98	66
Sum of peak 15 min	351	345	218	699	808	742	809	809	776	687	498	344	526	374	317	530	353	289	460	299	184
Peak 15 min as one-hour vol.	1406	1381	870	2795	3232	2968	3238	3235	3103	2749	1993	1374	2105	1498	1269	2121	1412	1156	1840	1195	736
Intersection one-hour volume	999	1073	745	2309	2838	2868	2653	2964	2942	1907	1452	1151	1510	1264	1019	1417	1062	850	1077	758	523
Weighted peak hour factor	**0.71**	**0.78**	**0.86**	**0.83**	**0.88**	**0.97**	**0.82**	**0.92**	**0.95**	**0.69**	**0.73**	**0.84**	**0.72**	**0.84**	**0.8**	**0.67**	**0.75**	**0.74**	**0.59**	**0.63**	**0.71**
CUMULATIVE PROJECT BUILDOUT CONDITION																					
Total Cumulative Volume	1550	1750	1430	6310	7485	7540	6180	7280	7290	5140	5080	3040	1615	1515	1333	1754	1524	1372	962	748	655
Project Volume	53	33	15	37	22	11	35	22	11	158	106	52	68	44	23	108	67	36	113	70	38
Existing Volume	899	1013	713	2219	2784	2839	2500	2868	2892	1630	1280	1060	1223	1085	925	1093	860	743	745	553	414
Net Change Ex to Cumulative	598	704	702	4054	4879	4690	3645	4390	4387	3352	3694	1928	324	386	385	553	597	593	104	125	203
Cumulative trips PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
% in peak 15 min	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Cumulative trips in peak 15	157	185	185	1067	1231	1234	959	1155	1154	882	972	507	85	102	101	146	157	156	27	33	53
Project Volume	53	33	15	37	22	11	35	22	11	158	106	52	68	44	23	108	67	36	113	70	38
Project PHF	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
% in peak 15 min	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%
Volume in peak 15	32	16	9	22	11	7	21	11	7	94	51	32	40	21	14	64	32	22	67	34	23
Sum of peak 15 min	481	518	392	1734	2024	1965	1698	1929	1907	1499	1439	827	481	411	375	547	445	402	357	267	194
Peak 15 min as one-hour vol.	1923	2071	1568	6936	8096	7861	6794	7714	7626	5994	5754	3309	1925	1645	1501	2189	1781	1607	1428	1067	777
Intersection one-hour volume	1550	1750	1430	6310	7485	7540	6180	7280	7290	5140	5080	3040	1615	1515	1333	1754	1524	1372	962	748	655
Weighted peak hour factor	**0.81**	**0.85**	**0.91**	**0.91**	**0.92**	**0.96**	**0.91**	**0.94**	**0.96**	**0.86**	**0.88**	**0.92**	**0.84**	**0.92**	**0.89**	**0.80**	**0.86**	**0.85**	**0.67**	**0.70**	**0.84**

	Bollenbacher/Rogge Intersection 8			Jasper/Rogge Intersection 9			Jade/Rogge Intersection 10			HS Driveway 1/Rogge Intersection 11			HS Driveway 2/Rogge Intersection 12			HS Driveway 3/Rogge Intersection 13			HS Driveway 4/Rogge Intersection 14		
	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
Existing Volume	707	614	368	576	544	352	598	540	369	588	528	356	588	528	356	588	528	356	588	528	356
Existing PHF	0.68	0.66	0.86	0.73	0.74	0.94	0.76	0.71	0.93	0.76	0.71	0.93	0.76	0.71	0.93	0.76	0.71	0.93	0.76	0.71	0.93
% in peak 15 min	37%	38%	29%	34%	34%	27%	33%	35%	27%	33%	35%	27%	33%	35%	27%	33%	35%	27%	33%	35%	27%
Volume in peak 15	260	233	107	197	184	94	197	190	99	193	186	96	193	186	96	193	186	96	193	186	96
Project Volume	337	208	111	342	211	113	395	246	130	466	284	148	161	87	82	94	97	59	100	60	32
Project PHF	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
% in peak 15 min	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%
Volume in peak 15	201	100	68	204	101	69	235	118	79	277	136	90	96	42	50	56	47	36	60	29	20
Sum of peak 15 min	461	332	175	401	285	163	432	308	178	471	322	186	289	228	146	249	232	132	253	215	115
Peak 15 min as one-hour vol.	1842	1330	699	1603	1140	650	1727	1233	714	1883	1289	744	1157	911	583	997	930	527	1012	859	461
Intersection one-hour volume	1044	822	479	918	755	465	993	786	499	1054	812	504	749	615	438	682	625	415	688	588	388
Weighted peak hour factor	**0.57**	**0.62**	**0.69**	**0.57**	**0.66**	**0.72**	**0.57**	**0.64**	**0.7**	**0.56**	**0.63**	**0.68**	**0.65**	**0.68**	**0.75**	**0.68**	**0.67**	**0.79**	**0.68**	**0.68**	**0.84**
CUMULATIVE PROJECT BUILDOUT CONDITION																					
Total Cumulative Volume	929	782	606	803	745	593	880	776	626	1395	1083	731	1363	997	747	1333	1065	777	1339	1052	765
Project Volume	118	73	40	123	76	42	178	111	59	703	430	177	671	344	193	641	412	223	647	399	211
Existing Volume	707	614	368	576	544	352	598	540	369	588	528	356	588	528	356	588	528	356	588	528	356
Net Change Ex to Cumulative	104	95	198	104	125	199	104	125	198	104	125	198	104	125	198	104	125	198	104	125	198
Cumulative trips PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
% in peak 15 min	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Cumulative trips in peak 15	27	25	52	27	33	52	27	33	52	27	33	52	27	33	52	27	33	52	27	33	52
Project Volume	118	73	40	123	76	42	178	111	59	703	430	177	671	344	193	641	412	223	647	399	211
Project PHF	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
% in peak 15 min	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%	60%	48%	61%
Volume in peak 15	70	35	24	73	36	26	106	53	36	418	206	108	399	165	118	382	198	136	385	192	129
Sum of peak 15 min	358	293	183	298	253	172	330	276	187	639	425	256	620	384	266	602	417	284	606	410	277
Peak 15 min as one-hour vol.	1430	1170	734	1191	1013	686	1320	1105	749	2557	1701	1023	2481	1536	1062	2409	1666	1135	2424	1641	1106
Intersection one-hour volume	929	782	606	803	745	593	880	776	626	1395	1083	731	1363	997	747	1333	1065	777	1339	1052	765
Weighted peak hour factor	**0.65**	**0.67**	**0.83**	**0.67**	**0.74**	**0.86**	**0.67**	**0.70**	**0.84**	**0.55**	**0.64**	**0.71**	**0.55**	**0.65**	**0.70**	**0.55**	**0.64**	**0.68**	**0.55**	**0.64**	**0.69**

APPENDIX S
HEAVY VEHICLE PERCENTAGES

SALINAS #5 HIGH SCHOOL TRAFFIC ANALYSIS
PERCENTAGE HEAVY VEHICLES

Intersection			AM Peak Period				MidDay Peak Period				PM Peak Period			
	North-South Street	East-West Street	North Leg	East Leg	South leg	West Leg	North Leg	East Leg	South leg	West Leg	North Leg	East Leg	South leg	West Leg
1	Natividad Road	Rogge Road	5%	-	2%	3%	4%	-	5%	5%	2%	-	1%	1%
2	Natividad Road	Boronda Road	6%	2%	4%	5%	4%	2%	2%	2%	3%	1%	1%	2%
3	San Juan Grade Road	Boronda Road	5%	3%	5%	7%	3%	2%	2%	3%	3%	2%	1%	2%
4	San Juan Grade Road	Russell Road	5%	-	3%	4%	4%	-	3%	5%	2%	-	2%	3%
5	San Juan Grade Road	Penzance Street	5%	0%	5%	0%	6%	0%	4%	0%	3%	0%	2%	0%
6	San Juan Grade Road	Rogge Road	9%	4%	4%	4%	6%	7%	6%	0%	4%	1%	3%	2%
7	Kelton Drive	Rogge Road	-	4%	0%	4%	-	7%	0%	7%	-	1%	0%	1%
8	Bollenbacher Drive	Rogge Road	-	4%	0%	4%	-	7%	0%	7%	-	1%	0%	1%
9	Jasper Way	Rogge Road	-	4%	0%	4%	-	7%	0%	7%	-	1%	0%	1%
10	Jade Drive	Rogge Road	-	4%	0%	4%	-	7%	0%	7%	-	1%	0%	1%

APPENDIX T
TRAFFIC OPERATIONS AND SAFETY AT SCHOOLS: RECOMMENDED GUIDELINES

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
FHWA/TX-04/4286-2		

4. Title and Subtitle	5. Report Date
TRAFFIC OPERATIONS AND SAFETY AT SCHOOLS: RECOMMENDED GUIDELINES	October 2003 Resubmitted: January 2004
	6. Performing Organization Code
7. Author(s) Scott A. Cooner, Kay Fitzpatrick, Mark D. Wooldridge, and Garry L. Ford	8. Performing Organization Report No. Report 4286-2
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135	10. Work Unit No. (TRAIS)
	11. Contract or Grant No. Project No. 0-4286
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Implementation Office P. O. Box 5080 Austin, Texas 78763-5080	13. Type of Report and Period Covered Research: September 2001 - August 2003
	14. Sponsoring Agency Code

15. Supplementary Notes

Research performed in cooperation with the Texas Department of Transportation and the U.S. Department of Transportation, Federal Highway Administration.

Research Project Title: Operational and Safety Guidelines for Roadway Facilities around Schools

16. Abstract

The state of Texas, particularly the large urban areas, has experienced considerable population growth in recent years. This growth has produced new schools in areas near highways originally designed for low volumes and relatively high speeds. Another trend is the higher proportion of children being transported to and from schools in private vehicles. These realities, and many of the other issues associated with traffic around schools, make it important to aggressively consider the design of roadways within and around schools to ensure the safest possible traffic environment. Equally important is the consideration of the location and design of the school site, preferably during the planning stages, in order to establish safe and efficient operations.

The Texas Department of Transportation (TxDOT) is currently focusing attention on these issues through its Precious Cargo Program. Precious Cargo allows TxDOT staff to review school site plans and make recommendations before the schools are built. Since the program's inception, more than 180 schools in 70 various school districts statewide have seen traffic safety improvements around their schools or future school sites.

This report contains the recommended school site planning guidelines for transportation-related elements such as site selection, general site requirements and design, bus operations, parent drop-off/pick-up zone, driveways, turn lanes, signing and marking, parking, and pedestrian and bicycle access. The research team based these guidelines on a comprehensive review of existing guidelines and the results of field studies at school sites in Texas. The report provides examples of good practices and also examples of practices to avoid for many of the more prominent guidelines. The guidelines are focused on transportation design, operations and safety within school sites – with a particular focus on the parent and bus drop-off/pick-up zones. The final chapter of the report contains a site plan review checklist that TxDOT engineers, field crews, architects, and school district personnel can use to coordinate efforts and make sure that school access is safe and efficient.

17. Key Words	18. Distribution Statement
School, Safety, Drop-off, Pick-up, Design Guidelines, School Bus, Site Plan	No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161

19. Security Classif.(of this report)	20. Security Classif.(of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	80	

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Guideline 8: Single-file right wheel to the curb is the preferred staging method for buses. (DESIGN and OPERATIONS)

Best Practice for Application of Guideline 8

Guideline 8 refers to the preferred staging method for school buses while loading or unloading students at school sites. The preferred method of staging buses is single-file right wheel to the curb because students are not required to pass between buses.
Figure 13 shows the different staging methods for buses for loading and unloading students at school sites. The bus-loading zone needs to be designed for the expected number of buses to accommodate Guideline 8.

Example of Good Practice

Many schools where researchers performed field studies staged buses in a single-file right wheel to the curb formation. Figure 14 provides a picture of a site where two of the buses were staged in a single-file formation adjacent to the curb for afternoon loading.

Examples to Avoid

The research team observed several sites where the preferred staging method was not employed. The most likely reason for using other staging methods, such as multiple-lane parallel, was lack of space to accommodate the number of buses serving the school campus. In the opinion of the research team that, if possible, staging methods such as the one shown in Figure 15 should be avoided to minimize the risks of conflicts with buses and students in the loading zone area.

GUIDELINES FOR THE DESIGN AND OPERATION OF PARENT ZONES

The topic of design and operation of parent drop-off/pick-up zones at schools has not received considerable attention until recently. Researchers believe that parent drop-off and pick-up zones are often overlooked in school design, but are very important. The provision of adequate zones minimizes illegal standing or parking near schools and helps prevent problems such as blocking bus driveways and flow on adjacent roadways (*44*). The research team did find some information for guidelines and recommended practices that is provided in Table 9. Several studies, performed in the states of North and South Carolina, have given significant consideration to design and operation of parent drop-off/pick-up zones.

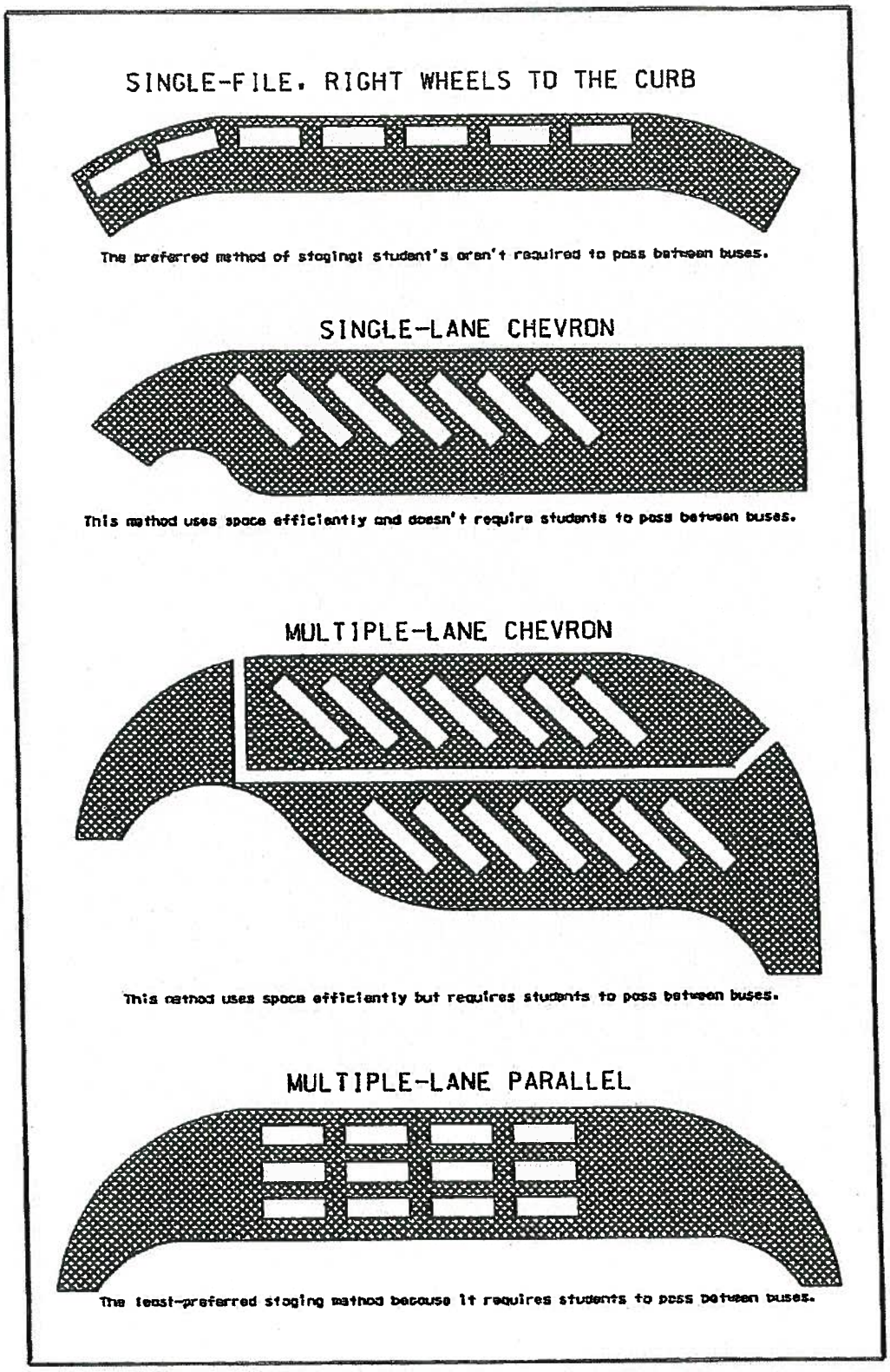


Figure 13. Methods to Stage Buses at School Sites (33).

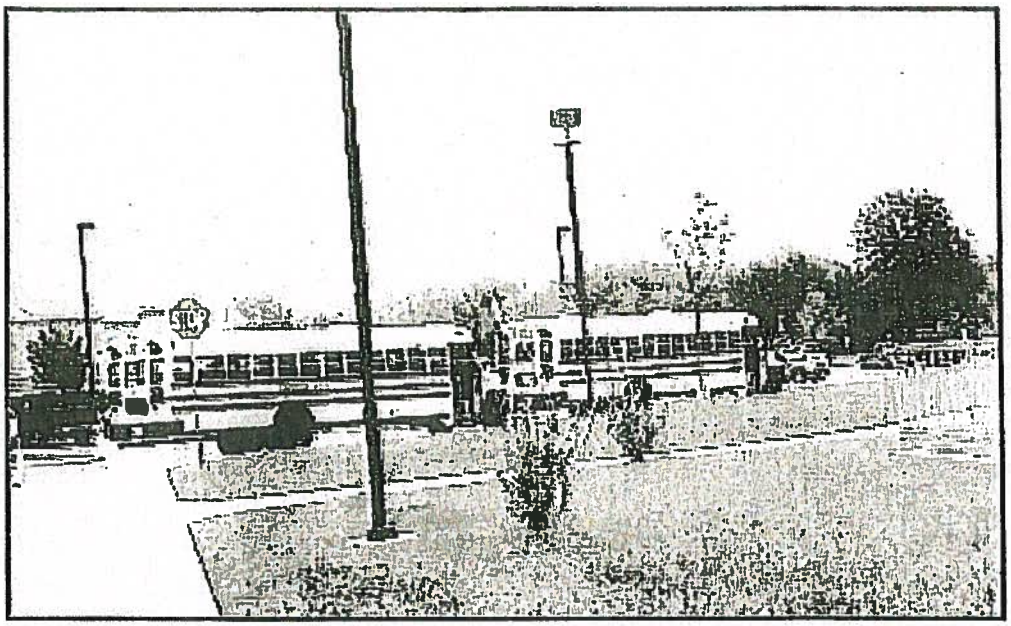


Figure 14. School Buses Staged in Preferred Method – Single-File Right Wheel to the Curb.

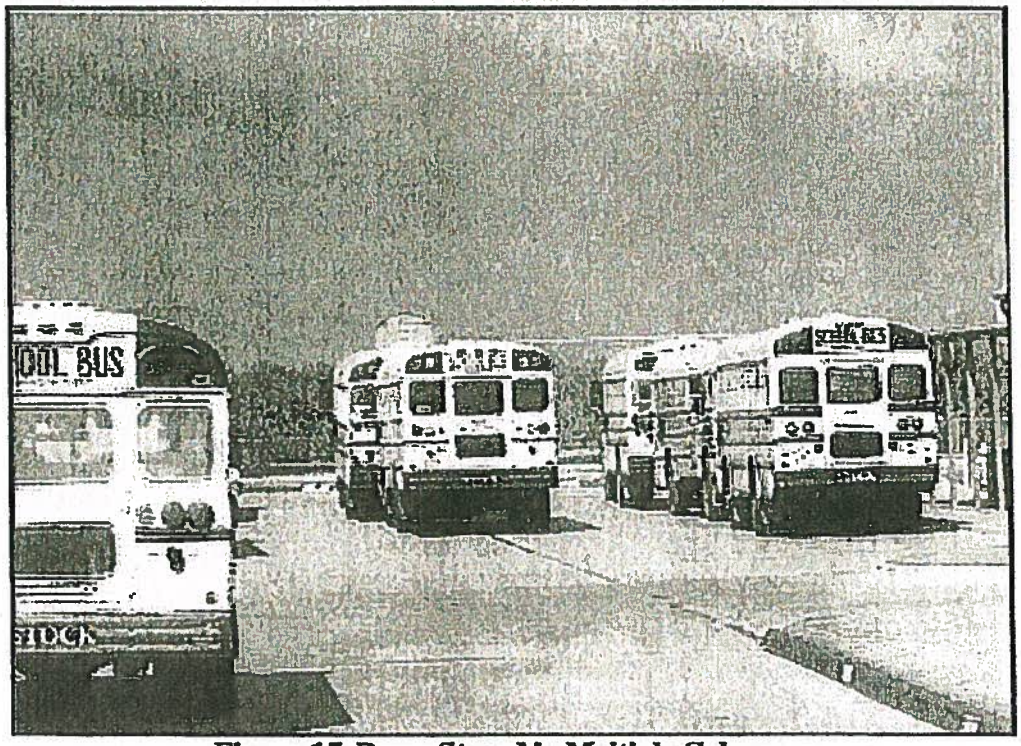


Figure 15. Buses Staged in Multiple Columns – Avoid if Possible to Reduce Potential Conflicts.

Table 9. Guidelines for Design and Operation of Parent Drop-off/Pick-up Zones.

Guideline	Source(s)
Drop-off area design does not require backward movement by vehicles.	Katz, Okitsu, & Associates–California (*38*), Miami-Dade County–Florida (*39*), South Carolina DOE (*13*), Wake County–North Carolina (*30*), Arizona DOT (*25*), Douglas County–Colorado (*16*), North Carolina DOE (*9*), Missouri DOT (*36*), Minnesota DOT (*23*)
☆ Parent drop-off/pick-up zones should be one-way in a counterclockwise direction where students are loaded and unloaded directly to the curb/sidewalk.	Miami-Dade County–Florida (*39*), South Carolina DOE (*13*), Region of York–Canada (*15*), ITE Michigan Section (*17*), North Carolina DOE (*9*), California DOE (*10*), Missouri DOT (*36*), Minnesota DOT (*23*), Arizona DOT (*25*)
☆ Maximize fronting curb space as loading zone – provide an adequate driveway for lining up cars on site.	Katz, Okitsu, & Associates–California (*38*), North Carolina DOE (*9*), Safe School Design Guidelines (*45*), South Carolina DOT (*31*), 4286 Research
☆ The length of the car pick-up zone can be determined by estimating the maximum number of cars likely to arrive at any one time.	New South Wales–Australia (*18*), Minnesota DOT (*23*), North Carolina DOT (*46*)
Prior to designing and laying out roads and parking, architects should consult with school administrators on: (1) number of cars dropping/picking up students; and (2) type of schedule (staggered or single opening time).	NSC (*24*), Arizona DOT (*25*)
Required drop-off and pick-up areas for schools (public or private) shall include at least: (1) 5 auto or (2) one auto space for every 50 students, whichever results in the greater number (no more than 12 spaces required).	City of Henderson–Nevada (*43*)
Drop-off areas should be at side entrances where site size/frontage permits so that the amount of pavement in front of schools at the street edge is reduced.	City of Mississauga–Canada (*12*)
☆ Do not load or unload students where they have to cross a vehicular path before entering the building.	North Carolina DOE (*9*)
☆ Short-term parking spaces should be identified past the student loading area and near the building entrance.	North Carolina State University (*47*)
☆ Parent loading should occur in designated zones to minimize pedestrian/vehicle conflicts.	4286 Research
☆ Student safety patrols and loading supervisors should be well trained and wear reflective safety vests.	4286 Research, North Carolina State University (*47*)
☆ Traffic cones and other channelizing devices can be used to minimize pedestrian/vehicles conflicts.	4286 Research

☆ Guidelines with this star symbol also have a best practice section

North Carolina Guidelines for Managing School Carpool Traffic

Some of the most comprehensive studies on the design and operation of drop-off/pick-up zones have occurred in the State of North Carolina. Researchers at the North Carolina State University (NCSU) collected data at 20 elementary schools on the loading process and associated queuing. Based on these studies, NCSU developed a *Best Practice for Managing School Carpool Traffic Schematic* (*47*). Figure 16 replicates this schematic and the corresponding guidelines. NCSU also produced a web-based school carpool decision support tool that provides procedural recommendations based on the common problems during school drop-off/pick-up times (*48*). For example, if the problem is that parent's vehicles are spilling back out of the site onto adjacent roads, implementation of a dual queue lane is recommended for the purpose of increasing storage capacity.

The North Carolina DOT also has the Municipal School and Transportation Assistance (MSTA) group dedicated to addressing safety concerns and traffic operations on school campuses and the surrounding state roadways (*49*). The MSTA, based on data collected at numerous schools throughout the state, has developed a design tool called the *School Traffic Calculator* (*46*). This tool estimates the morning and afternoon traffic loads and the corresponding maximum queue lengths that can be used to size the drop-off/pick-up zone.

South Carolina Guidelines for On-Site Stacking Length

The South Carolina DOT also has a dedicated unit for handling school-related transportation issues. This unit recently published a document entitled *Guidelines for School Transportation Design* (*31*). This document contains information, provided in Table 10, regarding recommended on-site stacking lengths ranging from 800 to 1500 ft (244 to 458 m) depending on the school type and student population.

Table 10. South Carolina DOT Recommendations for On-Site Stacking Length (*31*).

School Type	Student Population	Loop Drive Stacking Length (linear feet) (m)
Elementary	200 – 600 600 – 1400	900 – 1200 (274.5 – 366) 1200 – 1500 (366 – 457.5)
Middle	200 – 600 600 – 1200	900 – 1200 (274.5 – 366) 1200 – 1500 (366 – 457.5)
High	400 – 800 800 – 2500	800 – 1200 (244 – 366) 1200 – 1500 (366 – 457.5)
Note: For high school populations greater than 2500 students, consider two separate student pick-up/drop-off loops.		

It should be noted that many of the school sites in South Carolina utilize a single two-way driveway (i.e., driveway serves as the entrance and exit) for the parent zone in order to increase the stacking length. This type of design is not as prominent in Texas schools where most sites have separate entrance and exit points, which can decrease the available stacking space.

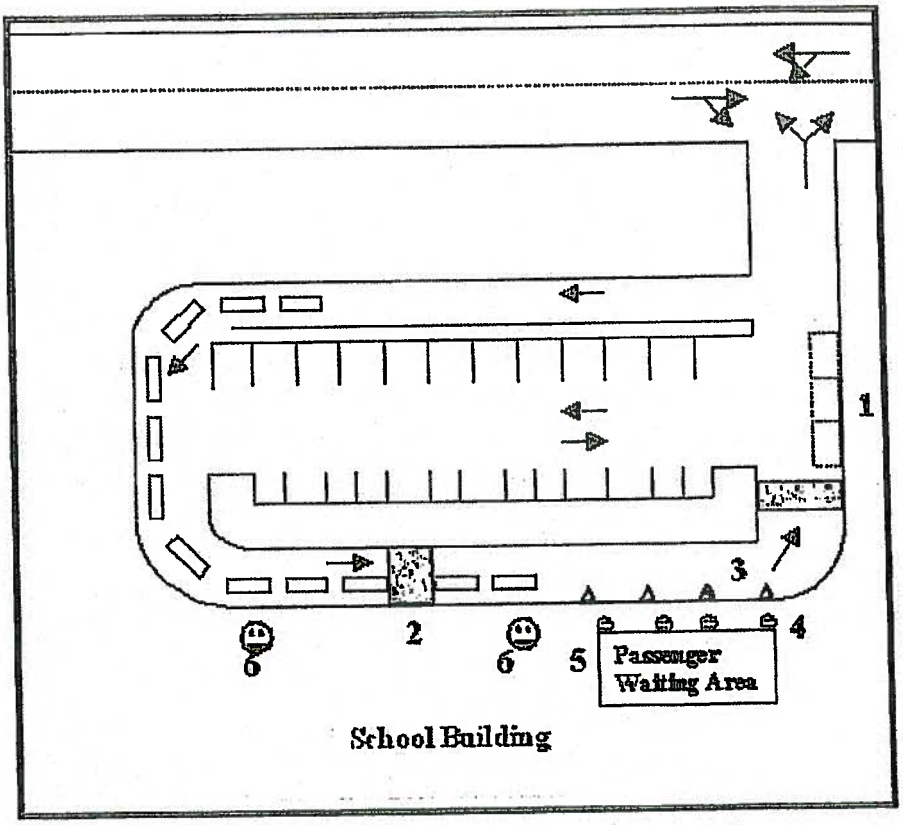


Figure 16. Best Practice for Managing School Carpool Traffic Schematic (*47*).

1. Short-term parking spaces should be identified past the student loading area and near the building entrance. These spaces can be identified by installing 'Visitor Parking' signs at the designated spaces and should be used for parents requiring an extended period of time to load or unload.
2. Crosswalks should be clearly marked with the first choice location being before the loading area and the second choice location after the loading area.
3. Make sure there is clear demarcation of the bays in the loading area.
   a. Paint the loading area into separate bays by installing 4-inch white solid pavement markings; each bay should be a minimum of 8 feet wide.
   b. The end bays should be at least a minimum length of 20 feet and the middle bays should be at least a minimum length of 30 feet. There should be a maximum of 4-5 bays.
4. Each bay should have its own safety assistant, trained by teachers at the beginning of every school year.
   a. One safety assistant should be present in each loading bay.
   b. This safety assistant is responsible for assisting the child(ren) into or out of their vehicle.
   c. Each safety assistant should wear an orange safety vest to provide visibility and to be easily identified by children and drivers.
5. At the end of the school day, have children wait in an organized fashion in the loading area or adjacent to it.
   a. Organization allows for children to pay attention and hear their name or number called.
   b. This helps to expedite the loading process by getting children to their vehicles quicker.
   c. It also helps the carpool time to be safe, as children will not be left to run around unsupervised.
6. Implement an Advanced Passenger Identification system using numbers or name cards placed in the windshield of the vehicle waiting in the carpool.
   a. This will require at least two people. The first person should stand five or six cars before the loading area and call out the names of the children over a walkie-talkie to the second person.
   b. The second staff member should be standing in the loading area itself relaying the names or numbers with a speaker system and directing students to the appropriate bay.

Guideline 9: Provide an adequate driveway for stacking cars on site. (DESIGN)

The research team found several examples of guidelines similar in nature to Guideline 9. Having adequate on-site stacking length to accommodate parent vehicles during the morning drop-off and afternoon pick-up operations is important. One of the primary focuses of the field studies during the 4286 project was to examine geometric design and operational practices in parent drop-off/pick-up zones. Researchers concentrated on collecting sufficient data at elementary schools in Texas to be able to validate the existing South Carolina (*31*) and North Carolina (*46*) guidelines for on-site stacking length.

The data collected during the 4286 field studies validated the *School Traffic Calculator* (*46*). It is good practice to use the afternoon pick-up data to predict the maximum queue of vehicles. The maximum queue length is then used to design and appropriate size the length needed in the parent driveway for lining up cars on site. The analysis of the average, maximum, and 95th percentile queue data at Texas schools did not produce any statistically significant models based on a regression analysis. The data did show that the observed maximum queue lengths were often well below the recommended on-site stacking lengths given in Table 10 and those predicted by the *School Traffic Calculator* (*46*).

It appears the South Carolina and North Carolina recommended on-site stacking lengths were more conservative compared to the Texas data. Based on this finding, the research team feels that the recommended on-site stacking lengths for Texas schools can be decreased and will still be able to meet the objective of Guideline 9 – providing an adequate driveway for stacking cars on site. Even though no statistically significant models were developed based on queue length, the research team had sufficient data to formulate recommended on-site stacking lengths for Texas elementary and middle schools. Based on the data from this project, researchers recommend the on-site stacking lengths for high schools contained in Table 10 for Texas because no new field data were collected at Texas high schools (*7*). Table 11 provides the recommended on-site stacking lengths for Texas schools.

Table 11. Recommended Parent Drop-off/Pick-up Zone On-Site Stacking Length for Texas.

School Type	Student Population	Loop Drive Stacking Length (linear feet) (m)
Elementary	Less than 500 500 or more	400 – 750 (122 – 229) 750 – 1500 (229 – 458)
Middle	Less than 600 600 or more	500 – 800 (153 – 244) 800 – 1600 (244 – 488)
High (*31*)	400 – 800 800 – 2500	800 – 1200 (244 – 366) 1200 – 1500 (366 – 458)
Note: For high school populations greater than 2500 students, consider two separate student pick-up/drop-off loops.		

Best Practice for Application of Guideline 9

Providing adequate on-site stacking length is important to the safety and operations of traffic within and around the school site.

Examples to Avoid

During the case studies and field studies, the research team observed many sites that did not provide adequate on-site stacking length. The inadequate on-site space to accommodate the queue led to spillback on adjacent roadways. Figure 17 shows an intermediate school site where the both lanes of the northbound direction of the adjacent roadway were blocked by the queue of vehicles that backed up out of the parent drop-off/pick-up zone driveway. Figure 18 shows another example of queue spillback at an elementary school site.

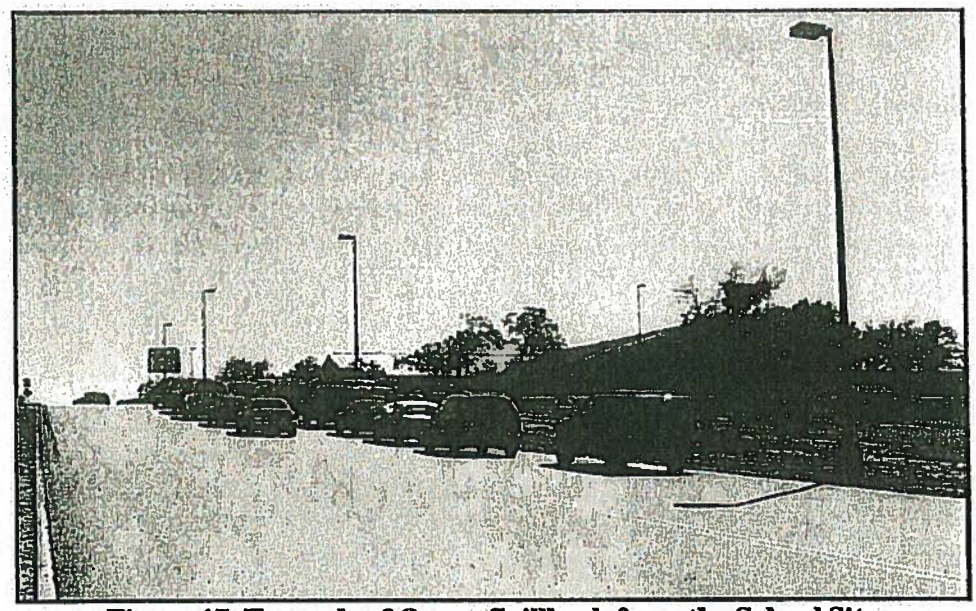


Figure 17. Example of Queue Spillback from the School Site.

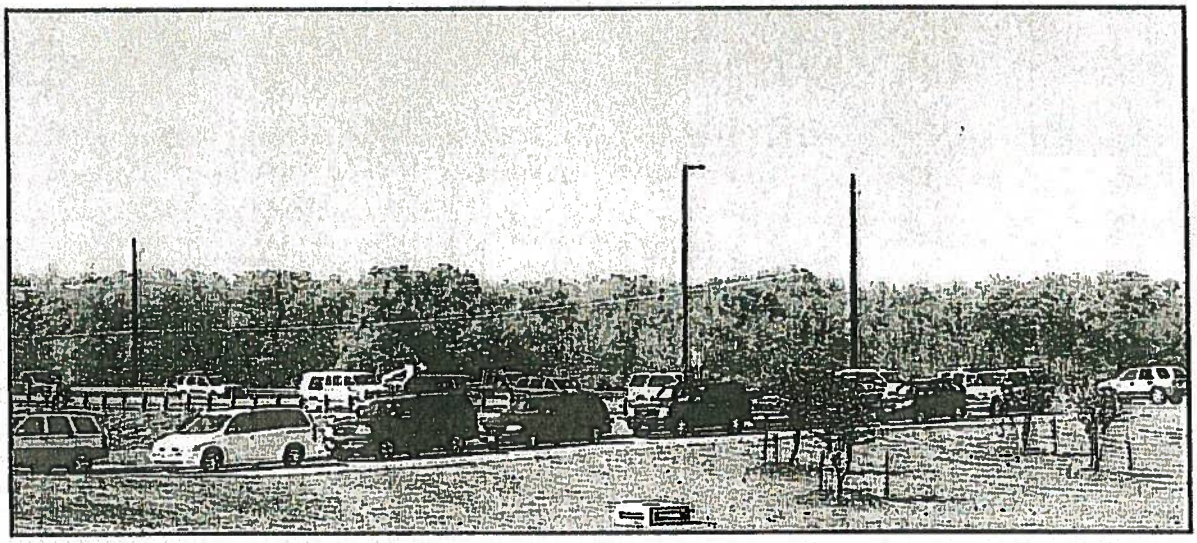


Figure 18. Another Example of Queue Spillback from the School Site.

APPENDIX U
INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEET

El Dorado Drive/Rogge Road

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

Intersection #15 Rogge Rd/El Dorado Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.913
Loss Time (sec):	9	Average Delay (sec/veh):	40.0
Optimal Cycle:	110	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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	0	6	0	0	0	0	6	6	6	6	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0 0	0	0 0	0 0	1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	410	0	161	0	0	0	0	332	309	139	288	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:	410	0	161	0	0	0	0	332	309	139	288	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:	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
PHF Volume:	661	0	260	0	0	0	0	535	498	224	465	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	661	0	260	0	0	0	0	535	498	224	465	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	661	0	260	0	0	0	0	535	498	224	465	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	1.00	0.82	1.00	1.00	1.00	1.00	0.96	0.82	0.91	0.96	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1736	0	1554	0	0	0	0	1828	1554	1736	1828	0
Capacity Analysis Module:												
Vol/Sat:	0.38	0.00	0.17	0.00	0.00	0.00	0.00	0.29	0.32	0.13	0.25	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.42	0.00	0.42	0.00	0.00	0.00	0.00	0.35	0.35	0.14	0.49	0.00
Volume/Cap:	0.91	0.00	0.40	0.00	0.00	0.00	0.00	0.83	0.91	0.91	0.52	0.00
Uniform Del:	27.4	0.0	20.4	0.0	0.0	0.0	0.0	29.8	31.0	42.3	17.2	0.0
IncremntDel:	15.9	0.0	0.4	0.0	0.0	0.0	0.0	9.2	19.8	35.0	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	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	43.4	0.0	20.8	0.0	0.0	0.0	0.0	38.9	50.7	77.3	17.8	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:	43.4	0.0	20.8	0.0	0.0	0.0	0.0	38.9	50.7	77.3	17.8	0.0
LOS by Move:	D	A	C	A	A	A	A	D	D	E	B	A
HCM2kAvgQ:	23	0	6	0	0	0	0	18	19	10	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 #15 Rogge / El Dorado

Cycle (sec):	100	Critical Vol./Cap.(X):	0.625
Loss Time (sec):	9	Average Delay (sec/veh):	25.0
Optimal Cycle:	43	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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	0	6	0	0	0	0	6	6	6	6	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0	0	0 1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	207	0	148	0	0	0	0	297	283	158	265	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:	207	0	148	0	0	0	0	297	283	158	265	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:	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
PHF Volume:	292	0	208	0	0	0	0	418	399	223	373	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	292	0	208	0	0	0	0	418	399	223	373	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:	292	0	208	0	0	0	0	418	399	223	373	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.79	1.00	1.00	1.00	1.00	0.94	0.79	0.89	0.94	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1688	0	1510	0	0	0	0	1777	1510	1688	1777	0
Capacity Analysis Module:												
Vol/Sat:	0.17	0.00	0.14	0.00	0.00	0.00	0.00	0.24	0.26	0.13	0.21	0.00
Crit Moves:	****								****	****		
Green/Cycle:	0.28	0.00	0.28	0.00	0.00	0.00	0.00	0.42	0.42	0.21	0.63	0.00
Volume/Cap:	0.62	0.00	0.50	0.00	0.00	0.00	0.00	0.56	0.62	0.62	0.33	0.00
Uniform Del:	31.6	0.0	30.4	0.0	0.0	0.0	0.0	21.8	22.7	35.9	8.5	0.0
IncremntDel:	2.7	0.0	0.9	0.0	0.0	0.0	0.0	0.9	1.9	3.5	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	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	34.3	0.0	31.3	0.0	0.0	0.0	0.0	22.8	24.6	39.3	8.7	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:	34.3	0.0	31.3	0.0	0.0	0.0	0.0	22.8	24.6	39.3	8.7	0.0
LOS by Move:	C	A	C	A	A	A	A	C	C	D	A	A
HCM2kAvgQ:	9	0	6	0	0	0	0	10	10	7	5	0

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

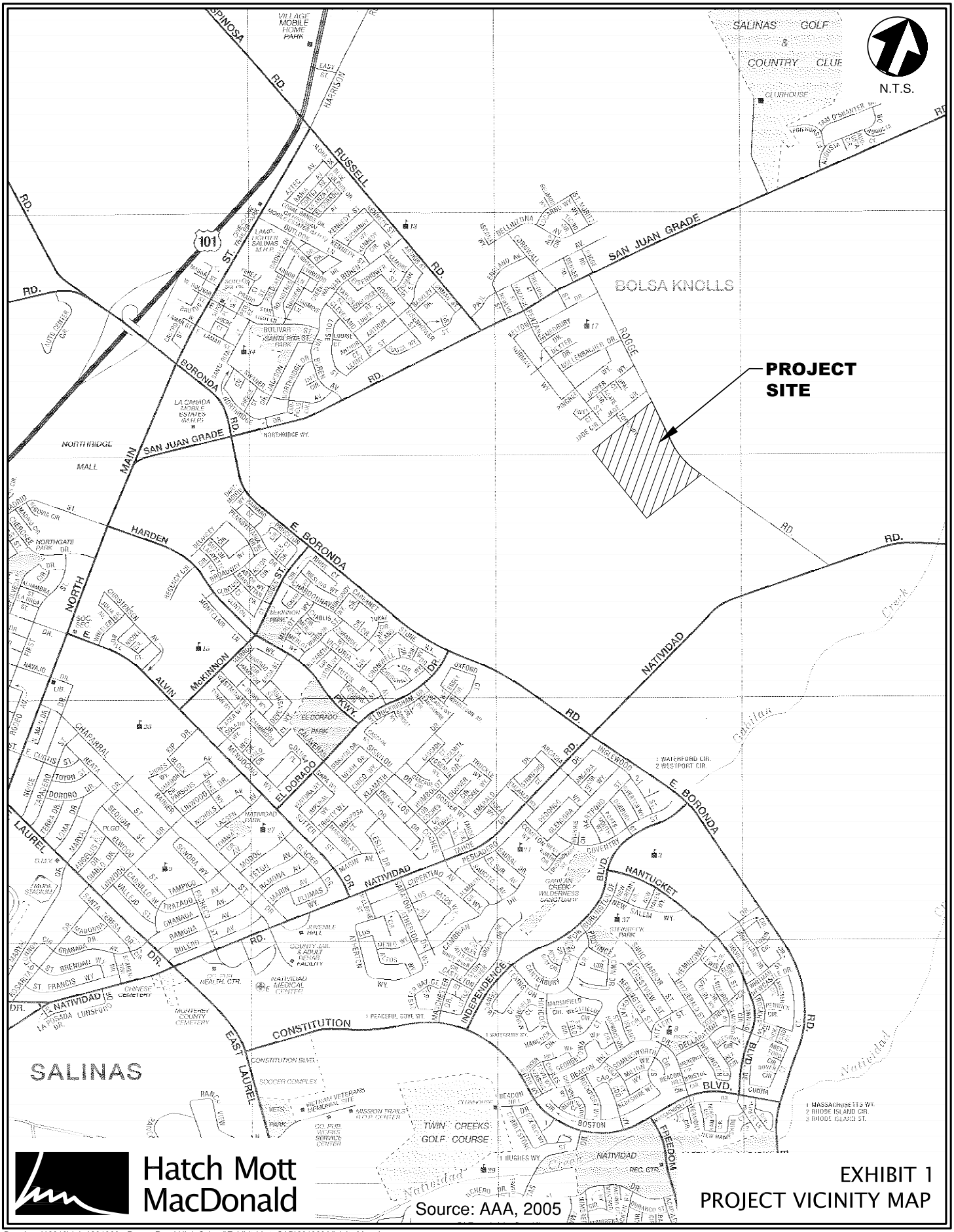
Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Rogge / El Dorado

Cycle (sec):	100	Critical Vol./Cap.(X):	0.300
Loss Time (sec):	9	Average Delay (sec/veh):	21.1
Optimal Cycle:	27	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:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	6	0	6	0	0	0	0	6	6	6	6	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	0	0 1	0	0	0 0	0	0 1	0 1	1 0	1	0 0
Volume Module:												
Base Vol:	150	0	87	0	0	0	0	195	153	125	267	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:	150	0	87	0	0	0	0	195	153	125	267	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:	150	0	87	0	0	0	0	195	153	125	267	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	0	87	0	0	0	0	195	153	125	267	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:	150	0	87	0	0	0	0	195	153	125	267	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.79	1.00	1.00	1.00	1.00	0.94	0.79	0.89	0.94	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1688	0	1510	0	0	0	0	1777	1510	1688	1777	0
Capacity Analysis Module:												
Vol/Sat:	0.09	0.00	0.06	0.00	0.00	0.00	0.00	0.11	0.10	0.07	0.15	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.37	0.37	0.25	0.61	0.00
Volume/Cap:	0.30	0.00	0.19	0.00	0.00	0.00	0.00	0.30	0.28	0.30	0.25	0.00
Uniform Del:	27.2	0.0	26.3	0.0	0.0	0.0	0.0	22.6	22.3	30.6	8.8	0.0
IncremntDel:	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.3	0.4	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:	27.5	0.0	26.5	0.0	0.0	0.0	0.0	22.8	22.6	31.0	8.9	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:	27.5	0.0	26.5	0.0	0.0	0.0	0.0	22.8	22.6	31.0	8.9	0.0
LOS by Move:	C	A	C	A	A	A	A	C	C	C	A	A
HCM2kAvgQ:	4	0	2	0	0	0	0	4	3	3	4	0

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



Drawing: I:\2010\Jobs\281369 - Rogge Road High School\Exhibits\AutoCAD\281369 Vicinity Map.dwg
Layout: Location Jun 29, 2011, 11:39am

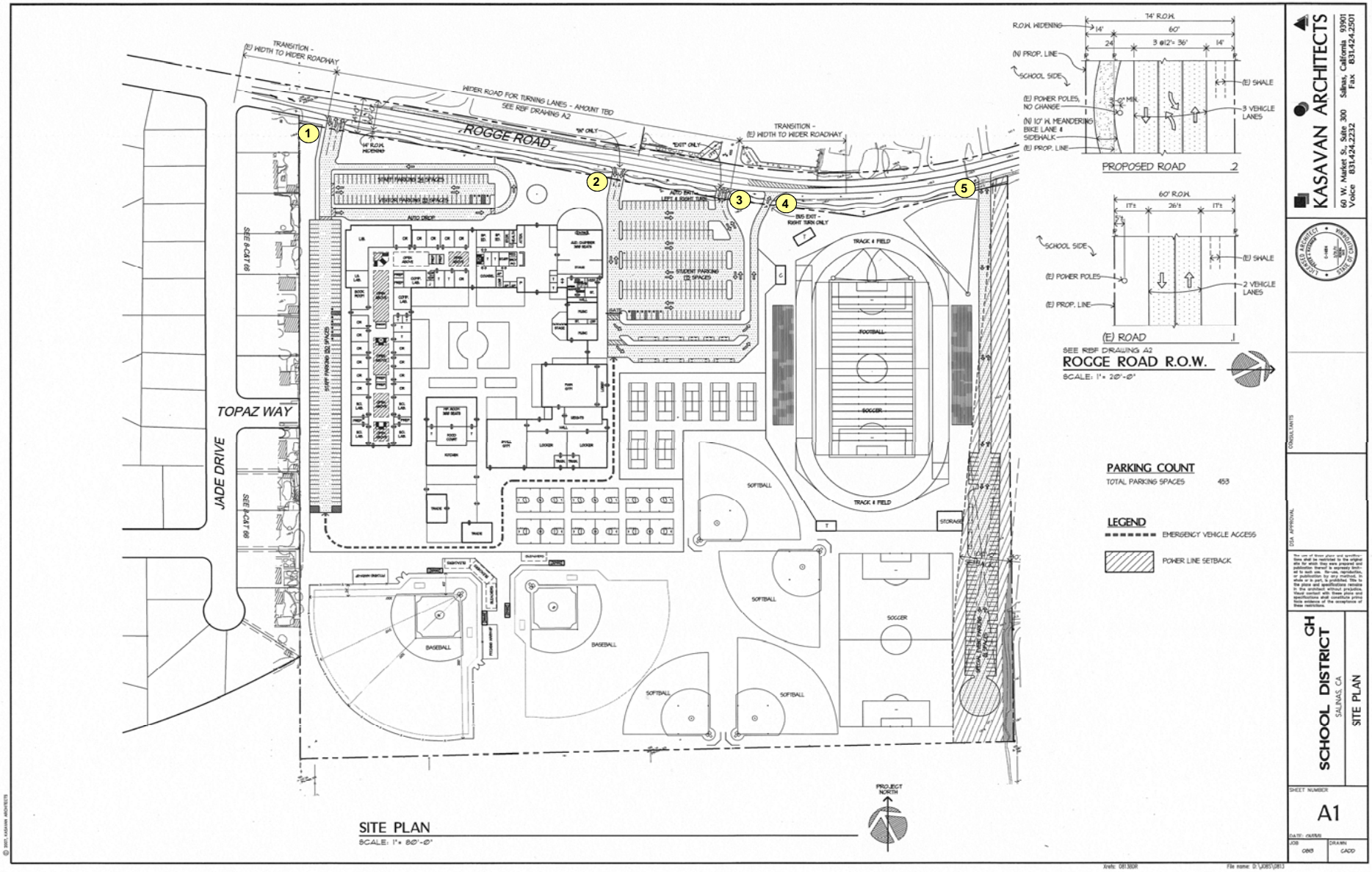
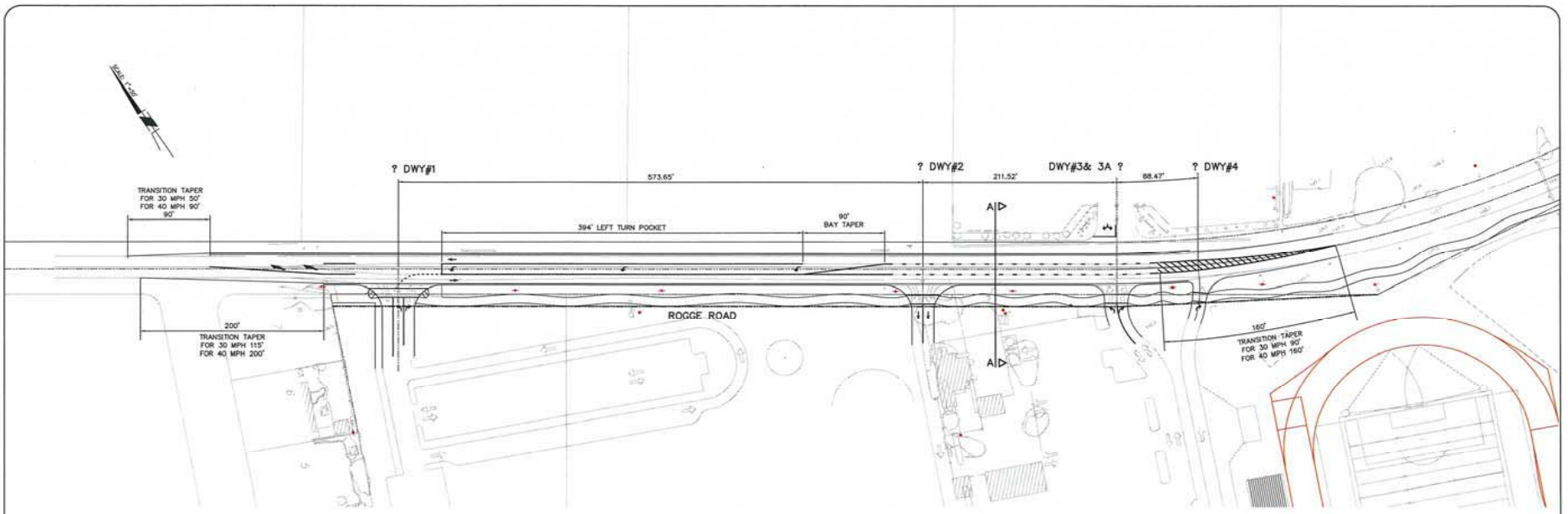
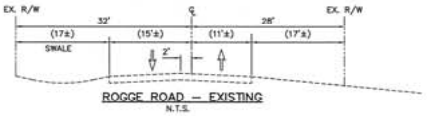


EXHIBIT 2A
PROJECT
SITE PLAN

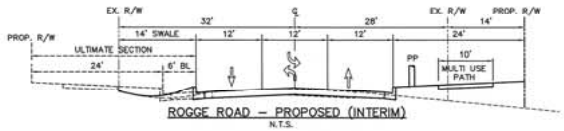


PARTIAL SITE PLAN @ ROGGE

SCALE: 1" = 50'-0"



ROGGE ROAD – EXISTING
N.T.S.



ROGGE ROAD – PROPOSED (INTERIM)
N.T.S.

SECTION A–A

RBF CONSULTING

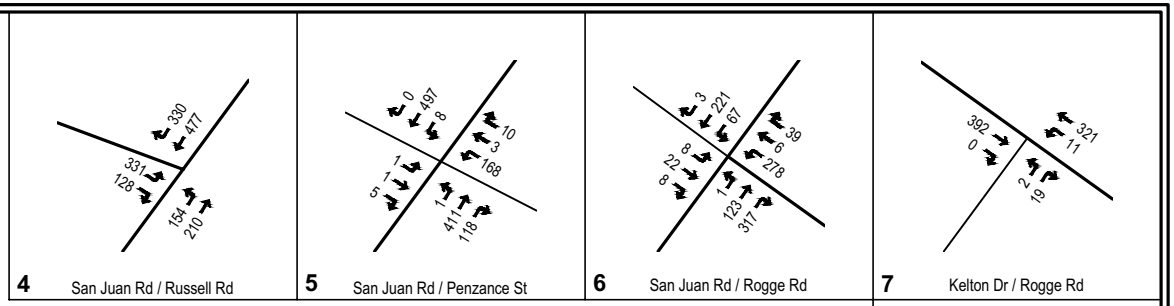
SALINAS UNIFIED HIGH SCHOOL DISTRICT
ROGGE ROAD
PRELIMINARY DESIGN - SCALE: AS SHOWN
UPDATED: 02-08-2011
A2

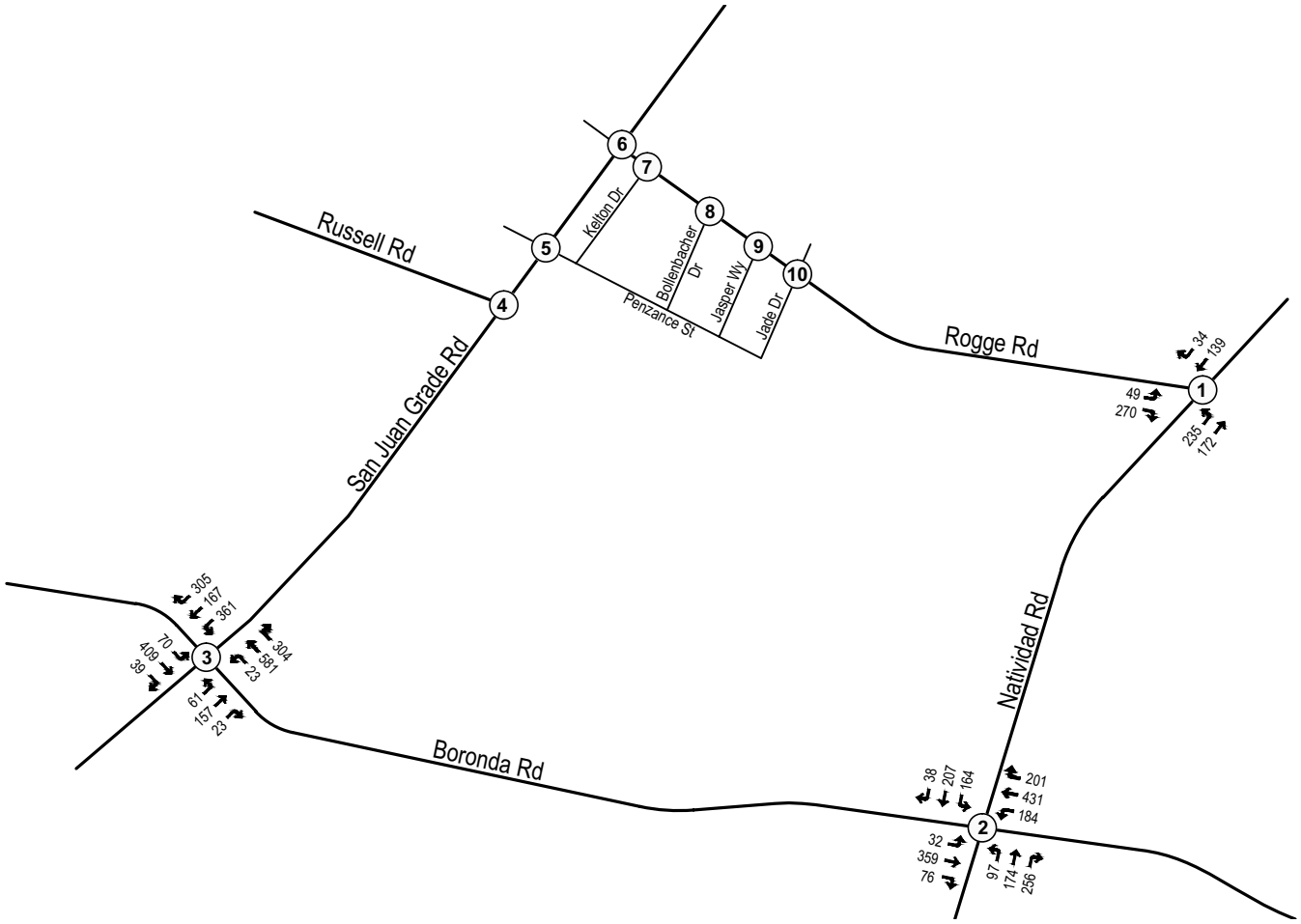
H:\PDATA\70100348\CADD\TRANSPW\EXHIBITS\GEOMETRY\GLY\0348-EXHIGEO_ALT 2_24X36-35T.DWG ATORRICA 2/11/11 8:04 am

EXHIBIT 2B
PROPOSED
ROGGE ROAD
IMPROVEMENT PLAN

EXHIBIT 3
MONTEREY-SALINAS
TRANSIT ROUTES

N.T.S



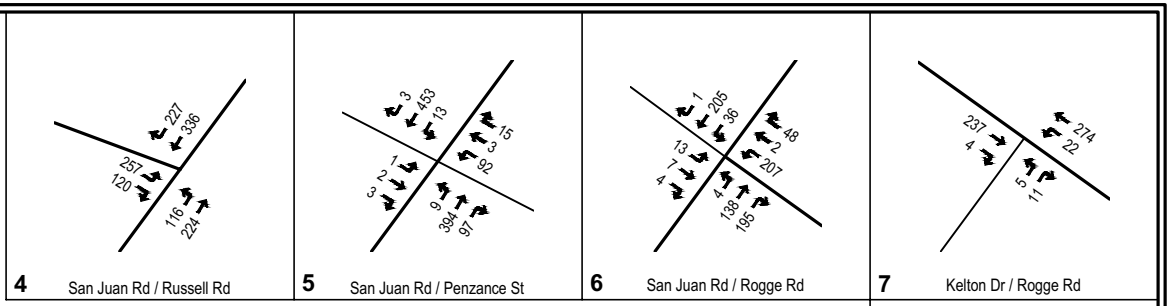


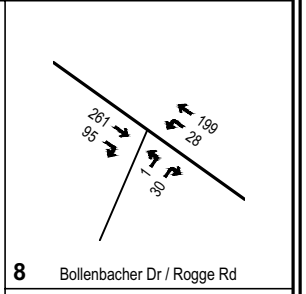
Hatch Mott MacDonald

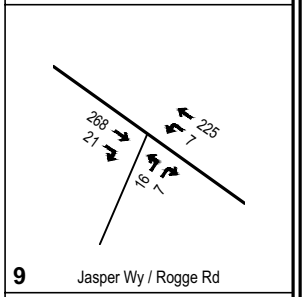
EXHIBIT 4A
EXISTING CONDITIONS
AM PEAK HOUR VOLUMES

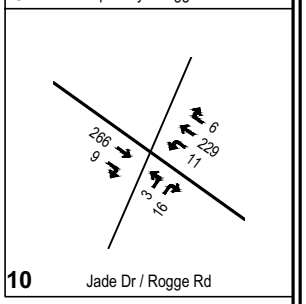
Drawing: I:\2010\Jobs\281369 – Rogge Road High School\Exhibits\AutoCAD\Volumes Ex.dwg
Layout: EX–4A AM May 24, 2011, 3:06pm

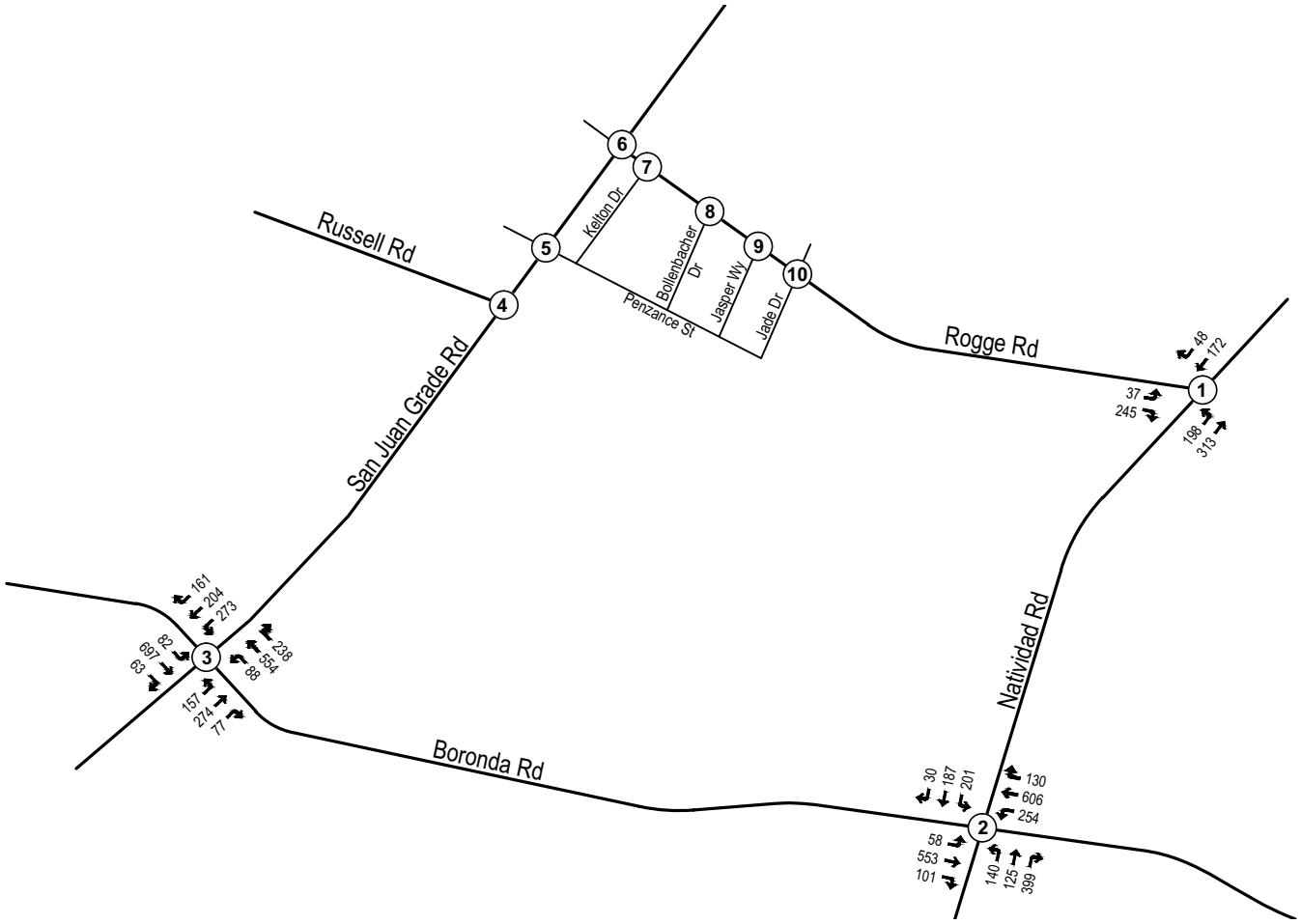
N.T.S









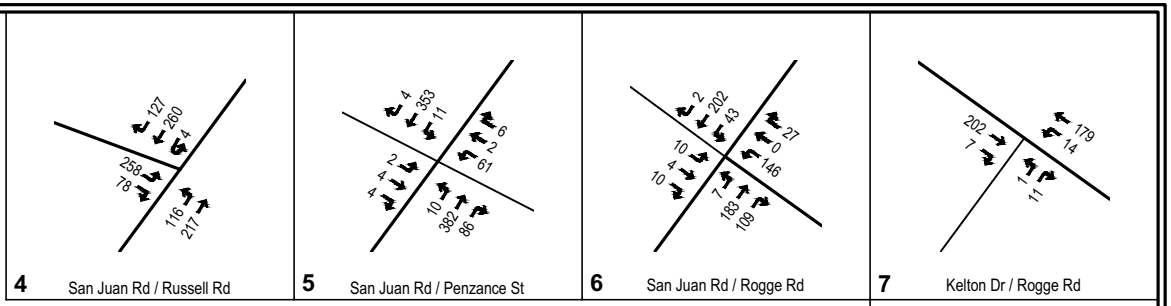


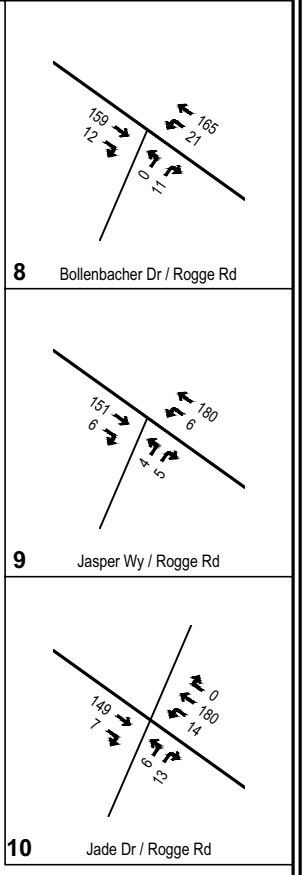
Hatch Mott MacDonald

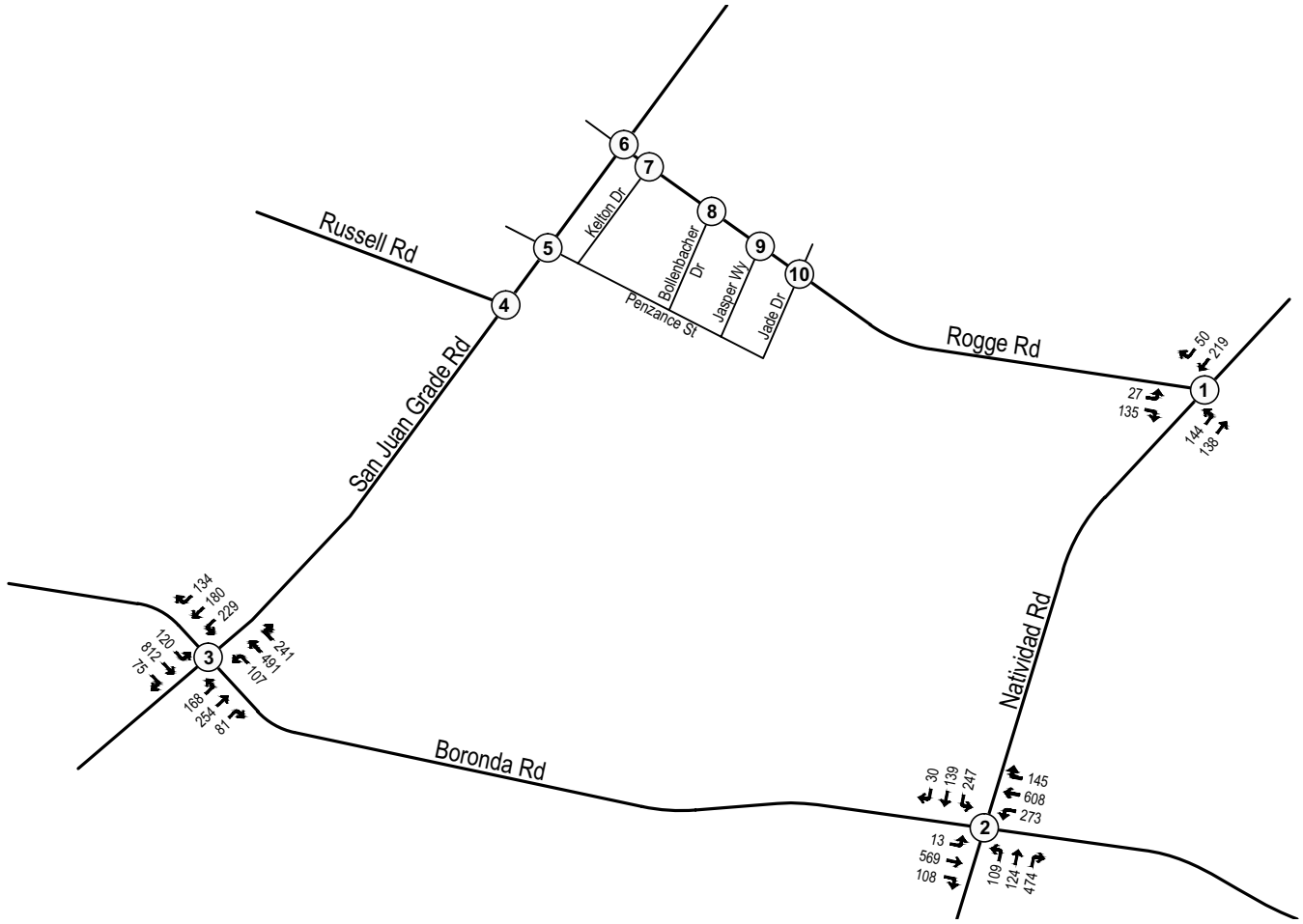
EXHIBIT 4B
EXISTING CONDITIONS
MIDDAY PEAK HOUR VOLUMES

Drawing: I:\2010\Jobs\281369 – Rogge Road High School\Exhibits\AutoCAD\Volumes Ex.dwg
Layout: EX–4B MD May 24, 2011, 3:06pm

N.T.S







Hatch Mott MacDonald

EXHIBIT 4C
EXISTING CONDITIONS
PM PEAK HOUR VOLUMES

Drawing: I:\2010\Jobs\281369 – Rogge Road High School\Exhibits\AutoCAD\Volumes Ex.dwg
Layout: EX–4C PM May 24, 2011, 3:06pm

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions						Existing + Project Phase 1 Conditions						Cumulative + Project Buildout Conditions					
						AM Peak Hr		MD Pk Hr		PM Pk Hr		AM Peak Hr		MD Pk Hr		PM Pk Hr		AM Peak Hr		MD Pk Hr		PM Pk Hr	
						Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
1	Natividad Road	Rogge Road	NB 1-L, 1-T SB 1-L/R EB 1-L, 1-R	Two-Way Stop-Overall (Worst Approach) *W/Improvement*	**D** **(E)**	7.5 15.0	A B	5.8 14.8	A B	4.3 11.7	A B	10.1 20.8	B C	6.7 16.5	A C	4.7 12.3	A B	**88.7** **274.6** *24.0*	**F** **F** *C*	**57.9** **224.9** *19.2*	**F** **F** *B*	13.0 **59.1** *18.3*	B **F** *B*
2	Natividad Road	Boronda Road	NB 1-L, 1-T, 1-R SB 1-L, 1-T/R EB 1-L, 1-T, 1-R WB 1-L, 1-T/R	Signal *W/Improvement 1* *W/Improvement 1 & 2*	**D**	34.0	C	40.4	D	40.1	D	37.5	D	43.2	D	40.9	D	**483.2** *39.6* *34.8*	**F** *D* *C*	**624.3** ***66.5*** *52.8*	**F** ***E*** *D*	**571.4** *51.4* *50.8*	**F** *D* *D*
3	San Juan Grade Road	Boronda Road	NB 2-L, 2-T, 1-R SB 2-L, 2-T, 1-R EB 2-L, 1-T, 1-T/R WB 2-L, 3-T, 1-R	Signal *W/Improvement 1* *W/Improvement 1 & 2*	**D**	27.8	C	28.1	C	26.9	C	28.5	C	28.5	C	27.3	C	75.7 *50.1* *37.3*	E *D* *D*	**155.2** ***74.3*** *50.0*	**F** ***E*** *D*	**196.2** ***88.8*** *32.7*	**F** ***F*** *C*
4	San Juan Grade Road	Russell Road	NB 1-L, 1-T SB 1-L, 1-T, 1-R 1-L, 1-R	Signal *W/Improvement 1* *W/Improvement 1 & 2*	**D**	28.4	C	23.7	C	25.1	C	41.6	D	24.6	C	25.0	C	**70.7** ***70.7*** *46.6*	**E** ***E*** *D*	**71.4** *38.6* *31.4*	**E** *D* *C*	31.7 *31.6* *30.1*	C *C* *C*
5	San Juan Grade Road	Penzance Street	NB 1-L/T/R SB 1-L, 1-T/R EB 1-L/T/R WB 1-L/T/R	Two-Way Stop-Overall (Worst Approach) *W/Improvement*	**D** **(E)**	5.6 36.8	A E	2.2 19.3	A C	1.6 16.8	A C	**31.6** **255.7** *25.1*	**D** **F** *C*	3.0 30.4 *23.3*	A D *C*	1.8 21.1 *23.0*	A C *C*	15.4 **132.6** *19.9*	C **F** *B*	2.9 34.8 *12.8*	A D *B*	1.7 25.6 *9.8*	A D *A*
6	San Juan Grade Road	Rogge Road	NB 1-L/T, 1-R SB 1-L/T, 1-T/R EB 1-L/T/R WB 1-L, 1-T/R	All-Way Stop *W/Improvement*	**D**	18.3	C	12.0	B	10.7	B	**133.6** *23.5*	**F** *C*	23.0 *21.2*	C *C*	13.2 *22.0*	B *C*	**49.2** *24.7*	**E** *C*	23.8 *21.6*	C *C*	26.4 *19.8*	D *B*
7	Kelton Drive	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	0.5 12.9	A B	0.7 12.1	A B	0.5 9.7	A A	0.6 22.4	A C	0.6 15.6	A C	0.5 10.7	A B	0.5 16.4	A C	0.6 14.2	A B	0.4 10.7	A B
8	Bollenbacher Drive	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	1.7 11.8	A B	1.0 11.7	A B	0.7 9.3	A A	1.8 19.6	A C	0.9 13.8	A B	0.6 10.0	A A	1.6 14.7	A B	0.9 13.1	A B	0.5 9.9	A A

Hatch Mott MacDonald

281369 LOS 072111 Ex 5.xls - LOS

EXHIBIT 5A
INTERSECTION
LEVELS OF SERVICE

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	LOS Standard	Existing Conditions						Existing + Project Phase 1 Conditions						Cumulative + Project Buildout Conditions					
						AM Peak Hr		MD Pk Hr		PM Pk Hr		AM Peak Hr		MD Pk Hr		PM Pk Hr		AM Peak Hr		MD Pk Hr		PM Pk Hr	
						Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
9	Jasper Way	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	0.5 14.3	A B	0.7 13.3	A B	0.4 9.8	A A	0.9 35.4	A E	0.7 19.3	A C	0.4 11.2	A B	0.6 20.6	A C	0.6 16.8	A C	0.3 11.4	A B
10	Jade Drive	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	0.8 11.8	A B	0.5 9.5	A A	0.8 9.8	A A	2.1 26.9	A D	0.9 13.8	A B	1.0 11.1	A B	1.6 16.6	A C	0.9 13.0	A B	0.8 11.1	A B
11	High School Driveway 1	Rogge Road	EB 1-T WB 1-T	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	- -	- -	- -	- -	- -	- -	18.5 **99.8**	C **F**	3.4 20.3	A C	1.5 12.2	A B	**200.4** **850.2**	**F** **F**	9.4 40.7	A E	2.2 12.9	A B
12	High School Driveway 2	Rogge Road	EB 1-T WB 1-T	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	- -	- -	- -	- -	- -	- -	0.3 9.0	A A	0.1 8.3	A A	0.1 7.8	A A	1.3 15.0	A B	0.1 9.4	A A	0.6 8.6	A A
13	High School Driveway 3	Rogge Road	EB 1-T WB 1-T	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	- -	- -	- -	- -	- -	- -	0.0 0.0	A A	1.4 17.0	A C	0.9 11.5	A B	0.0 0.0	A A	1.8 22.5	A C	1.0 13.7	A B
14	High School Driveway 4	Rogge Road	EB 1-T WB 1-T	Two-Way Stop-Overall (Worst Approach)	**D** **(E)**	- -	- -	- -	- -	- -	- -	0.2 11.6	A B	0.2 11.1	A B	0.0 0.0	A A	0.1 20.6	A C	0.2 16.2	A B	0.0 0.0	A A
15	El Dorado Drive	Rogge Road	EB 1-T WB 1-T	Signal (Future)	**D**	-	-	-	-	-	-	-	-	-	-	-	-	40.0	D	25.0	C	21.1	C

NOTES:
1. L, T, R = Left, Through, Right.
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.
3. Analysis performed using 2000 Highway Capacity Manual methodologies.
4. Worst approach level of service standard is generally LOS E. Level of service "F" is the level of service at which improvements would be required.
5. Levels of service cited under *Mitigations* use recommended improvements shown on *Exhibit 5B.*
6. * = Delay is over 300 seconds (5 minutes)
7. Operations in **bold** represent significant impacts.
8. Modified Access Plan: Levels of Service based on access plan depicted on Exhibit 5C.

EXHIBIT 5A
INTERSECTION
LEVELS OF SERVICE

	N-S Street	E-W Street	Existing Lane Configuration	Existing Intersection Control	Existing + Project Phase 1 Conditions	Cumulative + Project Buildout Conditions
1	Natividad Road	Rogge Road	NB 1-L, 1-T SB 1-L/R EB 1-L, 1-R	Two-Way Stop	1. Lenghten the NB left turn lane to provide 480 feet for vehicle storage plus additional distance for vehicle deceleration.	1. Signalize 2. Add free right turn lane on eastbound approach.
2	Natividad Road	Boronda Road	NB 1-L, 1-T, 1-R SB 1-L, 1-T/R EB 1-L, 1-T, 1-R WB 1-L, 1-T/R	Signal	None Required	1. Construct Salinas Traffic Improvement Program improvements: a. Provide 2 LT lanes, 2 T lanes and 1 RT lane on the NB & SB approaches. b. Provide 2 LT lanes, 3 T lanes and 1 RT lane on the EB & WB approaches. 2. Add a fourth through lane on WB Boronda Rd.
3	San Juan Grade Road	Boronda Road	NB 2-L, 2-T, 1-R SB 2-L, 2-T, 1-R EB 2-L, 1-T, 1-T/R WB 2-L, 3-T, 1-R	Signal	None Required	1. Construct Salinas Traffic Improvement Program improvements: a. Provide 2 LT lanes, 3 T lanes and 1 RT lane on the EB approach. 2. In addition to #1, construct the following: a. Improve northbound to eastbound right turn to free right turn movement. b. Operate SB right turn with overlap phase.
4	San Juan Grade Road	Russell Road	NB 1-L, 1-T SB 1-L, 1-T, 1-R EB 1-L, 1-R	Signal	None Required	1. Construct Salinas Traffic Improvement Program improvements: a. Extend Russell Road to the east. b. Provide 2 LT lanes, 1 T lane and 1 shared T/R lane on the NB approach. c. Provide 2 LT lanes, 2 T lanes and 1 RT lane on the SB, EB & WB approaches. 2. In addition to #1, construct the following: a. Add a right turn lane to the northbound San Juan Grade approach.
5	San Juan Grade Road	Penzance Street	NB 1-L/T/R SB 1-L, 1-T/R EB 1-L/T/R WB 1-L/T/R	Two-Way Stop	1. Signalize 2. Add left turn lane to northbound San Juan Grade Rd approach to Penzance St.	1. Signalize 2. Add left turn lane to northbound San Juan Grade Rd approach to Penzance St.
6	San Juan Grade Road	Rogge Road	NB 1-L/T, 1-R SB 1-L/T, 1-T/R EB 1-L/T/R WB 1-L, 1-T/R	All-Way Stop	1. Signalize 2. Add NB LT lane. 3. Modify SB approach to provide 1 LT lane and 1 shared T/R lane. 4. Restripe WB lanes to provide 1 LT lane and 1 shared L/T/R lane. 5. Operate E & W approaches with split signal phasing. 6. Operate NB SJG right turn with overlap phase.	1. Signalize 2. Add NB LT lane. 3. Modify SB approach to provide 1 LT lane and 1 shared T/R lane. 4. Restripe WB lanes to provide 1 LT lane and 1 shared L/T/R lane. 5. Operate E & W approaches with split signal phasing. 6. Operate NB SJG right turn with overlap phase.
7	Kelton Drive	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop	None Required	None Required
8	Bollenbacher Drive	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop	None Required	None Required
9	Jasper Way	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop	None Required	None Required
10	Jade Drive	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L/R	Two-Way Stop	None Required	None Required
11	High School Driveway 1	Rogge Road	EB 1-T WB 1-T	Future Intersection	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.
12	High School Driveway 2	Rogge Road	EB 1-T WB 1-T	Future Intersection	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.
13	High School Driveway 3	Rogge Road	EB 1-T WB 1-T	Future Intersection	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.
14	High School Driveway 4	Rogge Road	EB 1-T WB 1-T	Future Intersection	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.	1. Modify the school access plan to provide adequate traffic operations at the Rogge Road intersections with the school driveways.
15	El Dorado Drive	Rogge Road	EB 1-T WB 1-T	Future Intersection	Not Applicable	1. Provide WB left turn lane. 2. Provide EB right turn lane. 3. Provide separate left turn lane and right turn lane on the NB approach. 4. Signalize.

NOTES:
1. L, T, R = Left, Through, Right.
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.

School	Date of Counts	Student Population	Traffic Volumes										Trip Generation Rates (trips/student)										Notes
			Daily	AM Peak Hour			PM School Peak Hour			PM Street Peak Hour			Daily	AM Peak Hour			PM School Peak Hour			PM Street Peak Hour			
				Total	IB	OB	Total	IB	OB	Total	IB	OB		Total	IB	OB	Total	IB	OB	Total	IB	OB	
Gilroy High School	May 2006	2,250	-	1,503	923	580	869	357	512	-	-	-	-	0.67	0.41	0.26	0.39	0.16	0.23	-	-	-	40% of students eligible to be bused to school; actual percentage riding bus closer to 35%
Aptos High School	March 2004	1,825	-	1,007	607	400	644	257	387	-	-	-	-	0.55	0.33	0.22	0.35	0.14	0.21	-	-	-	38% of students are bused to school
Seaside High School	March 2008	1,355	3,246	667	411	256	455	207	248	371	169	202	2.40	0.49	0.30	0.19	0.33	0.15	0.18	0.27	0.12	0.15	Wednesdays are half-days (school ends at 1:20 PM); 27% of students in Monterey Peninsula Unif. Sch. Dist. are bused
Everett Alvarez High School	March 2008	2,140	3,827	1,143	669	474	729	285	444	361	162	199	1.79	0.53	0.31	0.22	0.34	0.13	0.21	0.17	0.08	0.09	24% of students are bused to school
Pajaro Valley High School	March 2008	1,525	2,188	667	388	279	405	152	253	168	62	106	1.43	0.43	0.25	0.18	0.27	0.10	0.17	0.11	0.04	0.07	Early closures on 3/6 and 3/10; PM activity reduces sharply after school; 20% of students are bused to school
School Survey Database Weighted Average Trip Rate			3,172	1,054	634	420	651	263	388	305	134	172	1.85	0.55	0.33	0.22	0.34	0.14	0.20	0.18	0.08	0.10	
Institute of Transportation Engineers Trip Rate	-	-	-	-	-	-	-	-	-	-	-	-	1.71	0.41	0.28	0.13	0.28	0.09	0.19	0.14	0.07	0.07	
Inbound/Outbound Split							School Survey Database								60%	40%		40%	60%		44%	56%	
							Institute of Transportation Engineers								69%	31%		32%	68%		47%	53%	
Comparison of Survey Trip Generation Rate Versus ITE Rate													8%	33%			22%			28%			

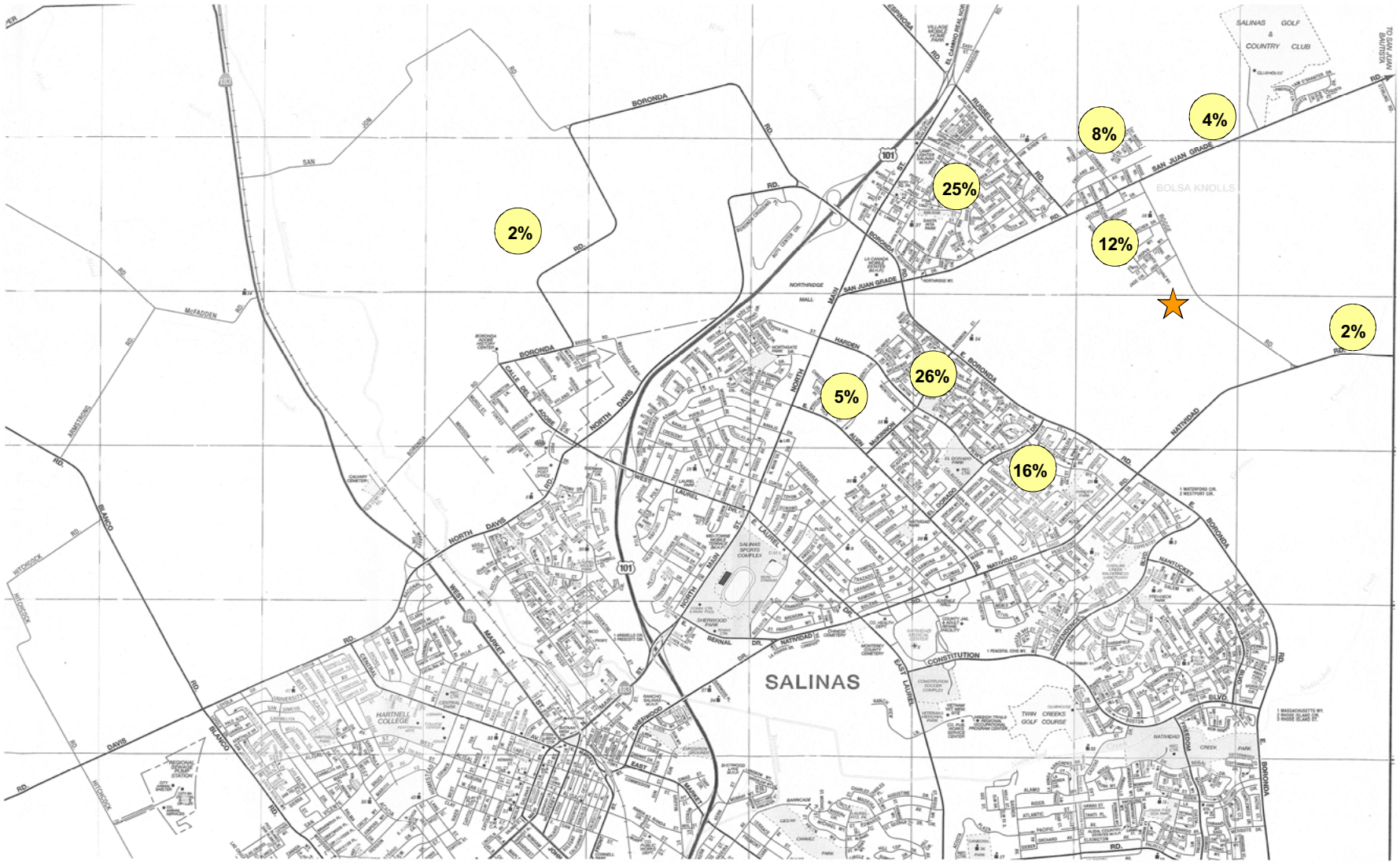
Notes:
1. Student enrollments/population were at time of traffic count at each school.
2. PM School Peak Hour is the peak one-hour traffic period of school between 1:00 - 4:00 PM.
3. PM Street Peak Hour is the peak one-hour traffic period of school between 4:00 PM and 6:00 PM, which would coincide with peak hour of adjacent street system.
4. Sources of Data:
   - Gilroy High School: *Christopher High School Traffic Analysis*, Fehr & Peers Transportation Consultants, May 30, 2006.
   - Aptos High School: *Aptos High School Access and Circulation Evaluation*, Higgins Associates, May 7, 2004.
   - Seaside High School: Hatch Mott MacDonald (formerly Higgins Associates) traffic counts, March 2008.
   - Everett Alvarez High School: Hatch Mott MacDonald (formerly Higgins Associates) traffic counts, March 2008.
   - Pajaro Valley High School: Hatch Mott MacDonald (formerly Higgins Associates) traffic counts, March 2008.
   - Institute of Transportation Engineers: *Trip Generation*, 8th Edition, Institute of Transportation Engineers, 2008.

EXHIBIT 6A
TRIP GENERATION
RATE COMPARISON
(AREA HIGH SCHOOLS VS. ITE)

PROJECT TRIP GENERATION

	PROJECT SIZE	WEEKDAY DAILY TRIPS	AM PEAK HOUR				PM SCHOOL PEAK HOUR				PM STREET PEAK HOUR			
			TOTAL PEAK HOUR	% OF ADT	IN	OUT	TOTAL PEAK HOUR	% OF ADT	IN	OUT	TOTAL PEAK HOUR	% OF ADT	IN	OUT
TRIP GENERATION RATES[1]														
High School (per student)	1,500 students	1.85	0.55	30%	60%	40%	0.34	18%	40%	60%	0.18	10%	44%	56%
Rogge Road High School														
High School	1,500 students	2,768	825	30%	495	330	510	18%	204	306	270	10%	119	151
Trip Generation By Area														
Santa Rita District (Project Phase 1)	900 students	1,661	495	30%	297	198	306	18%	122	184	162	10%	71	91
Future Growth Area (Remainder of Project Buildout)	600 students	1,107	330	30%	198	132	204	18%	82	122	108	10%	48	60
TOTAL	1,500 students	2,768	825	30%	495	330	510	18%	204	306	270	10%	119	151

Notes:
1. Trip generation rates for High School derived from traffic counts performed at five area high schools. See Exhibit 6A for more information.



Santa Rita School District enrollment = 60% of the total #5 High School attendance.

EXHIBIT 7A
PROJECT
TRIP DISTRIBUTION
(SANTA RITA SCHOOL
DISTRICT TRIPS - PROJECT PHASE 1)

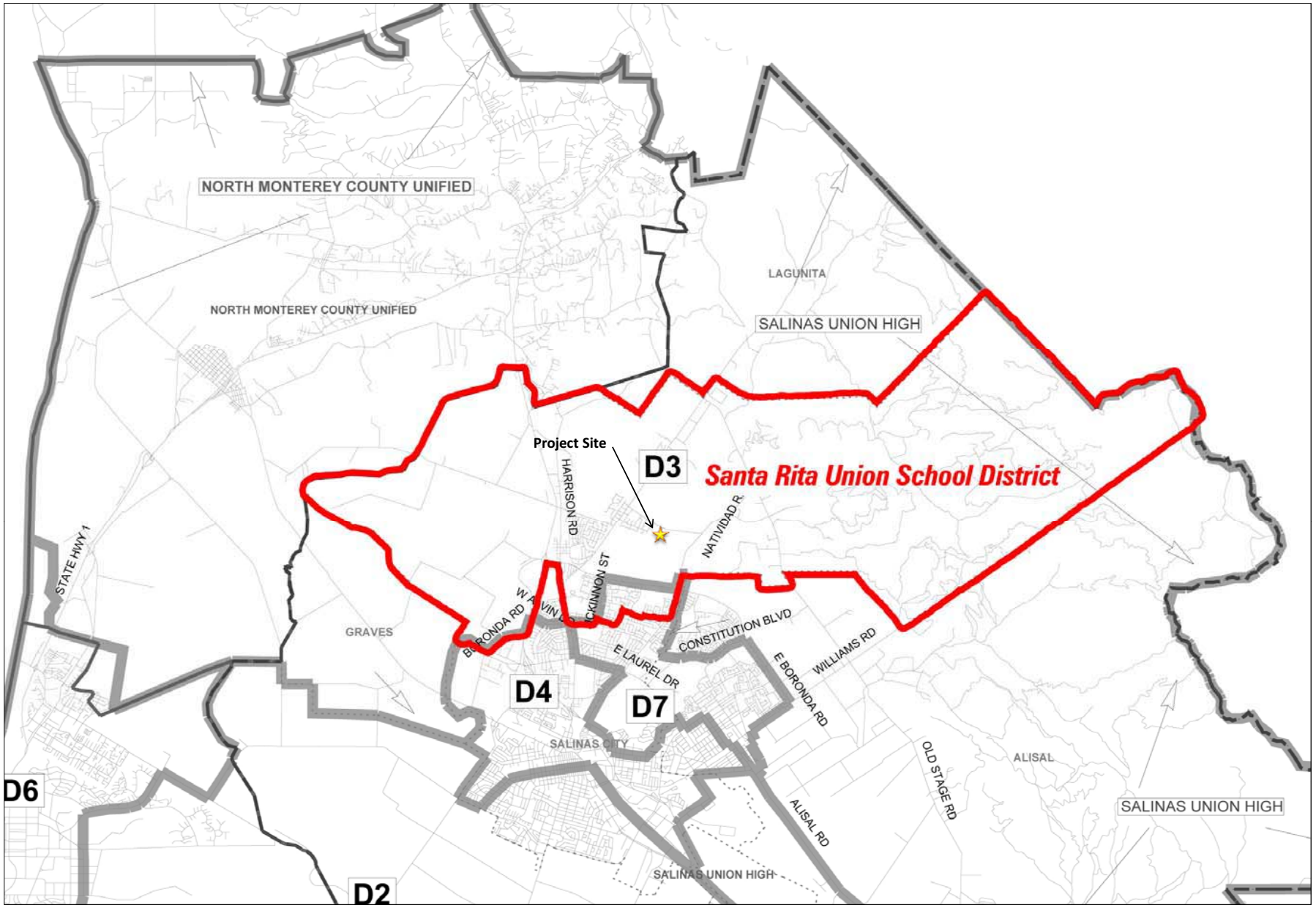


EXHIBIT 7B
SANTA RITA UNION
SCHOOL DISTRICT BOUNDARY

Hatch Mott MacDonald

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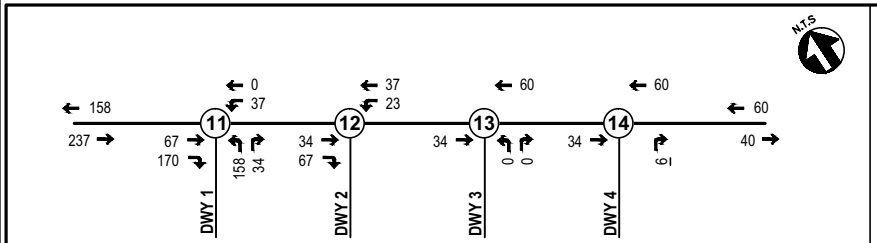
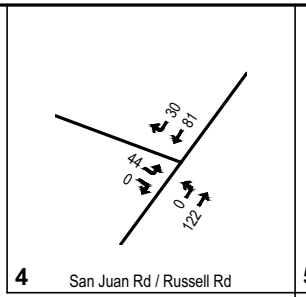
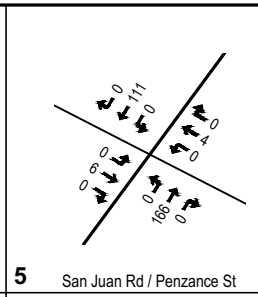


11-14 Project Dwys / Rogge Rd



4 San Juan Rd / Russell Rd



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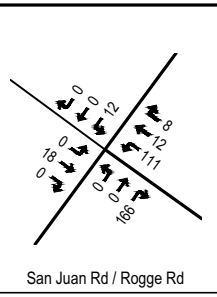
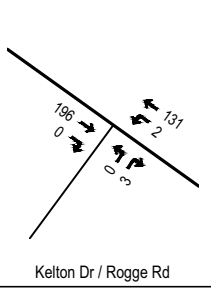
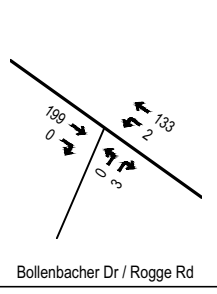


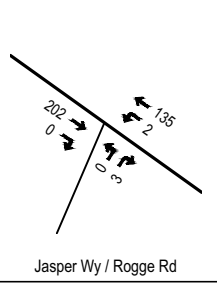
6 San Juan Rd / Rogge Rd



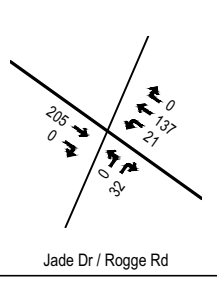
7 Kelton Dr / Rogge Rd



8 Bollenbacher Dr / Rogge Rd



9 Jasper Wy / Rogge Rd



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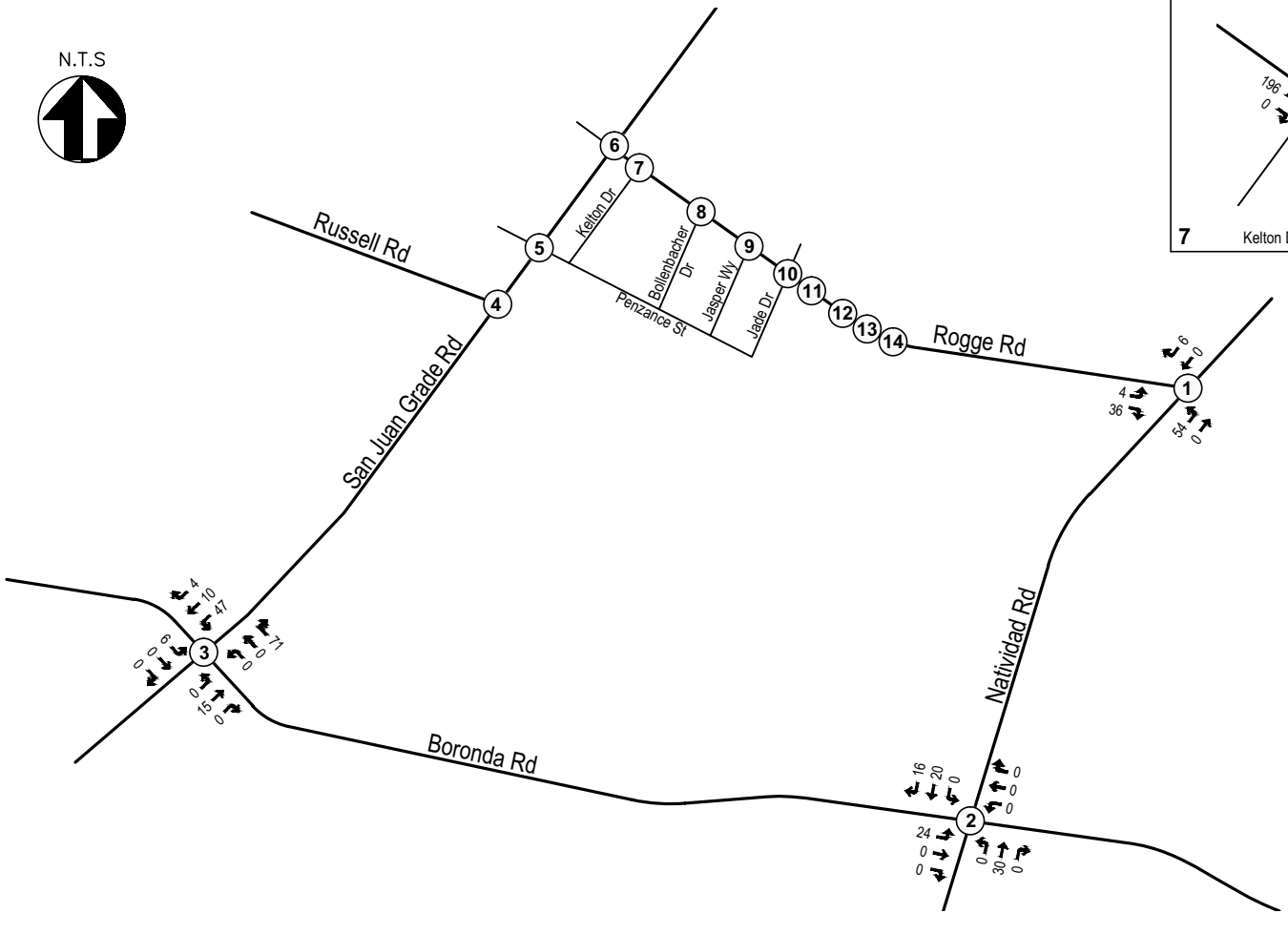

Hatch Mott MacDonald

EXHIBIT 8A
PROJECT PHASE 1 TRIP ASSIGNMENT
AM PEAK HOUR VOLUMES

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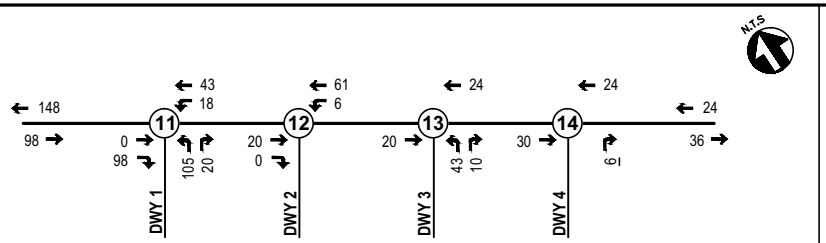
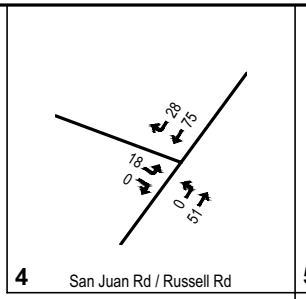
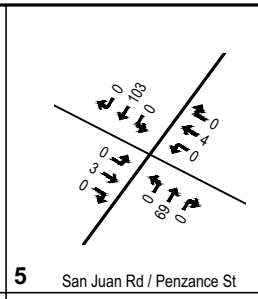


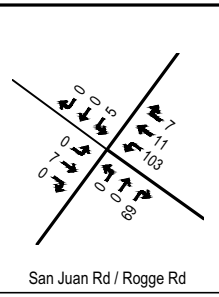
11-14 Project Dwys / Rogge Rd



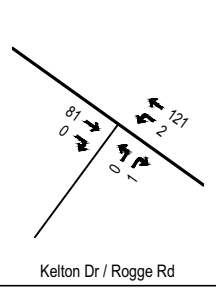
4 San Juan Rd / Russell Rd



5 San Juan Rd / Penzance St



6 San Juan Rd / Rogge Rd



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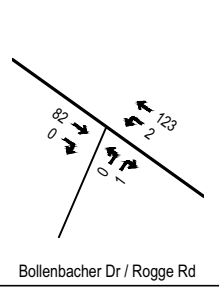

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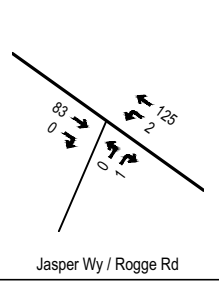

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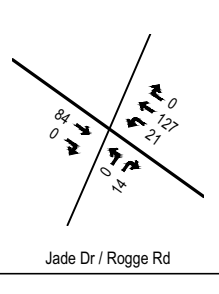

10 Jade Dr / Rogge Rd

Hatch Mott MacDonald

EXHIBIT 8B
PROJECT PHASE 1 TRIP ASSIGNMENT
MIDDAY PEAK HOUR VOLUMES

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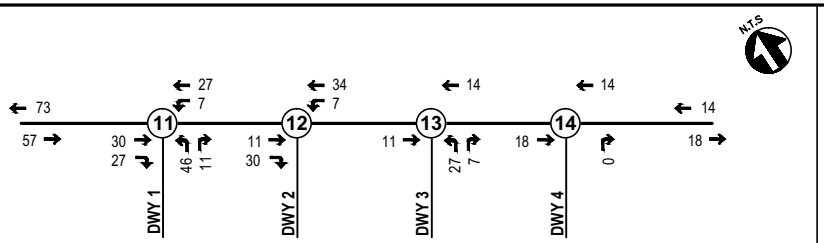

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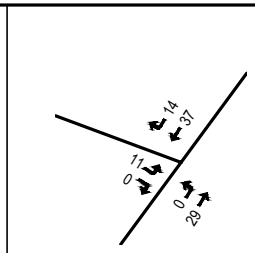

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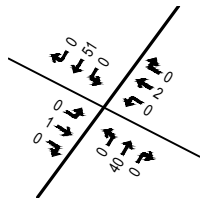

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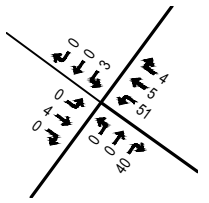

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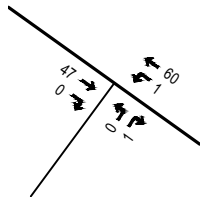

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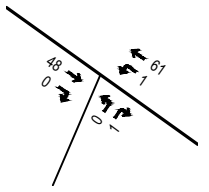

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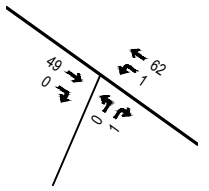
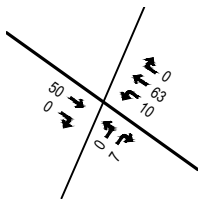
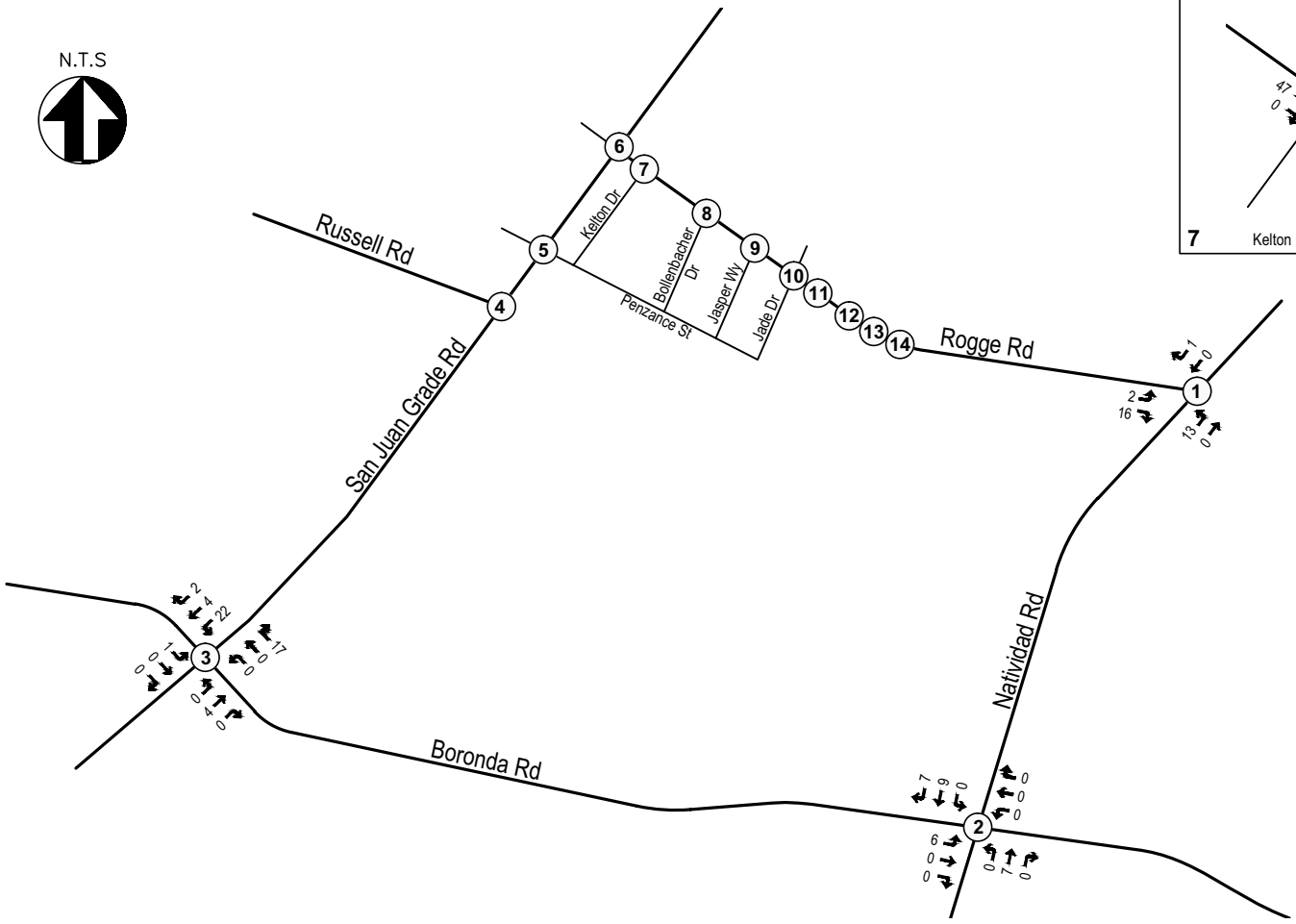


9 Jasper Wy / Rogge Rd



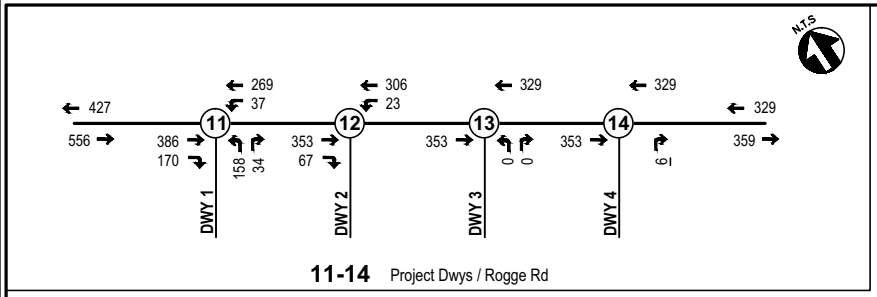
10 Jade Dr / Rogge Rd



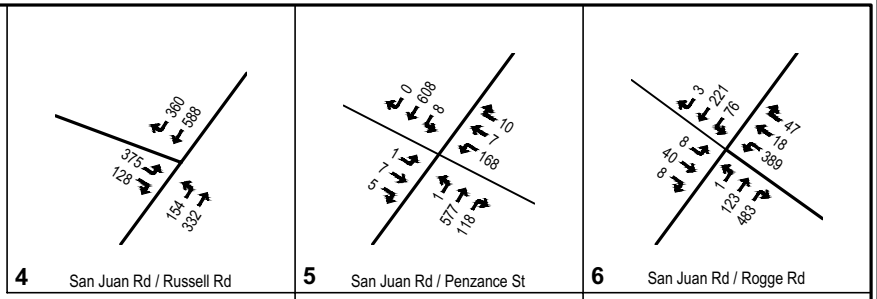
Hatch Mott MacDonald

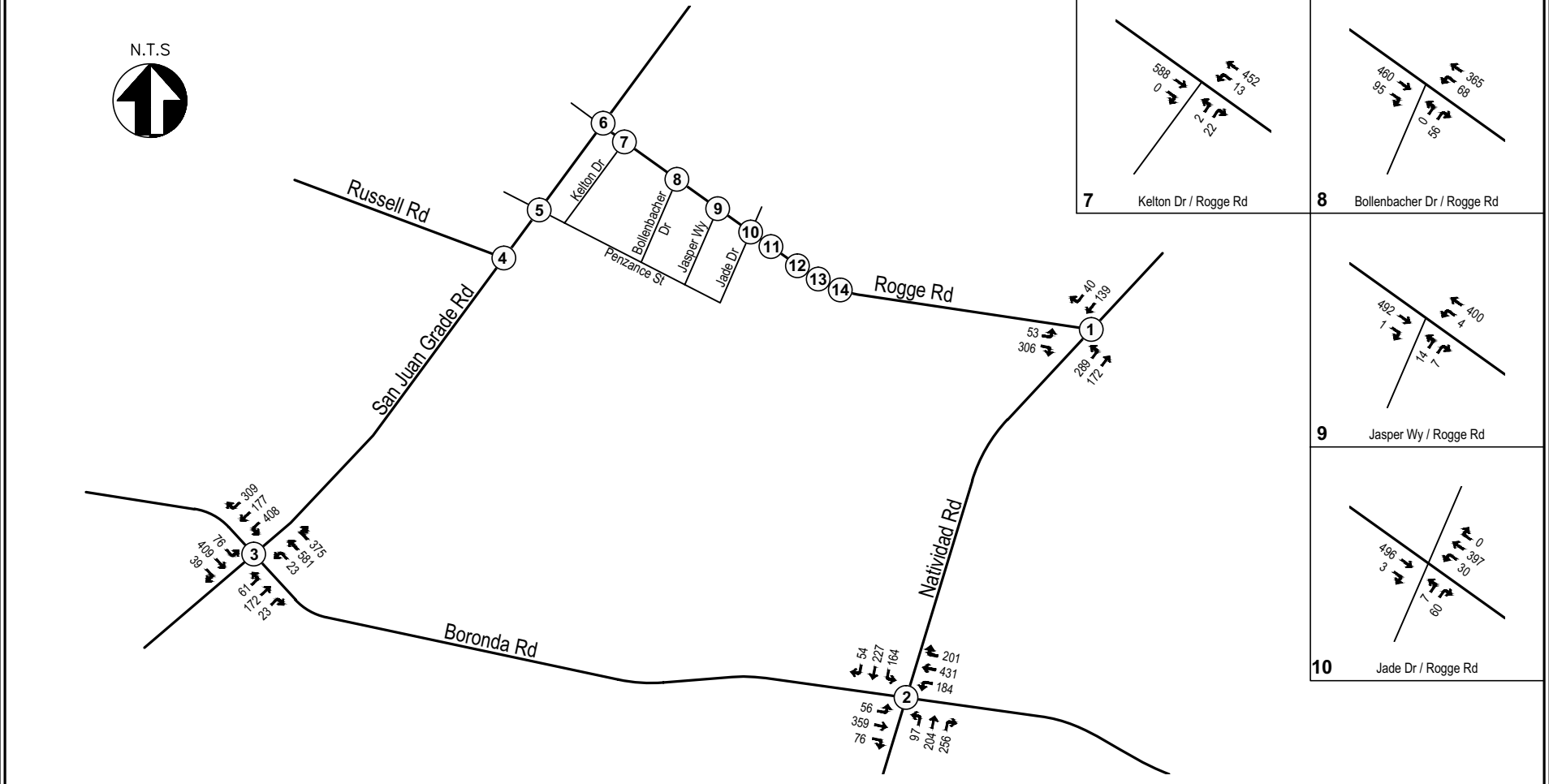
EXHIBIT 8C
PROJECT PHASE 1 TRIP ASSIGNMENT
PM PEAK HOUR VOLUMES

Drawing: I:\2010\Jobs\281369 – Rogge Road High School\Exhibits\AutoCAD\Volumes Proj.dwg
Layout: EX–8C Jun 01, 2011, 9:30am



11-14 Project Dwys / Rogge Rd

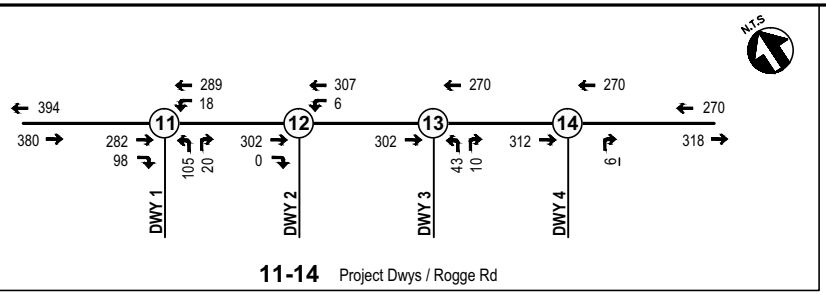




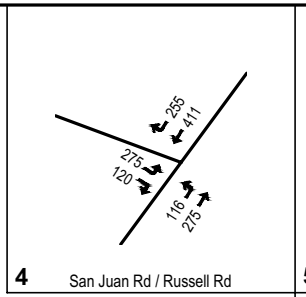
Hatch Mott MacDonald

EXHIBIT 9A
EXISTING PLUS PROJECT PHASE 1 CONDITIONS
AM PEAK HOUR VOLUMES

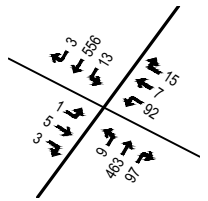
Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_1248\Volumes Ex+Proj.dwg
Layout: EX-9A Jun 28, 2011, 4:27pm



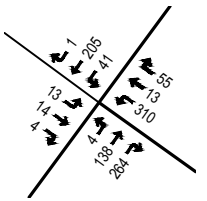
11-14 Project Dwys / Rogge Rd



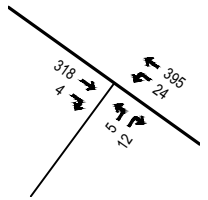
4 San Juan Rd / Russell Rd



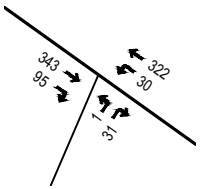
5 San Juan Rd / Penzance St



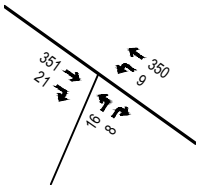
6 San Juan Rd / Rogge Rd



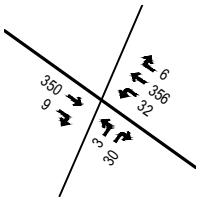
7 Kelton Dr / Rogge Rd



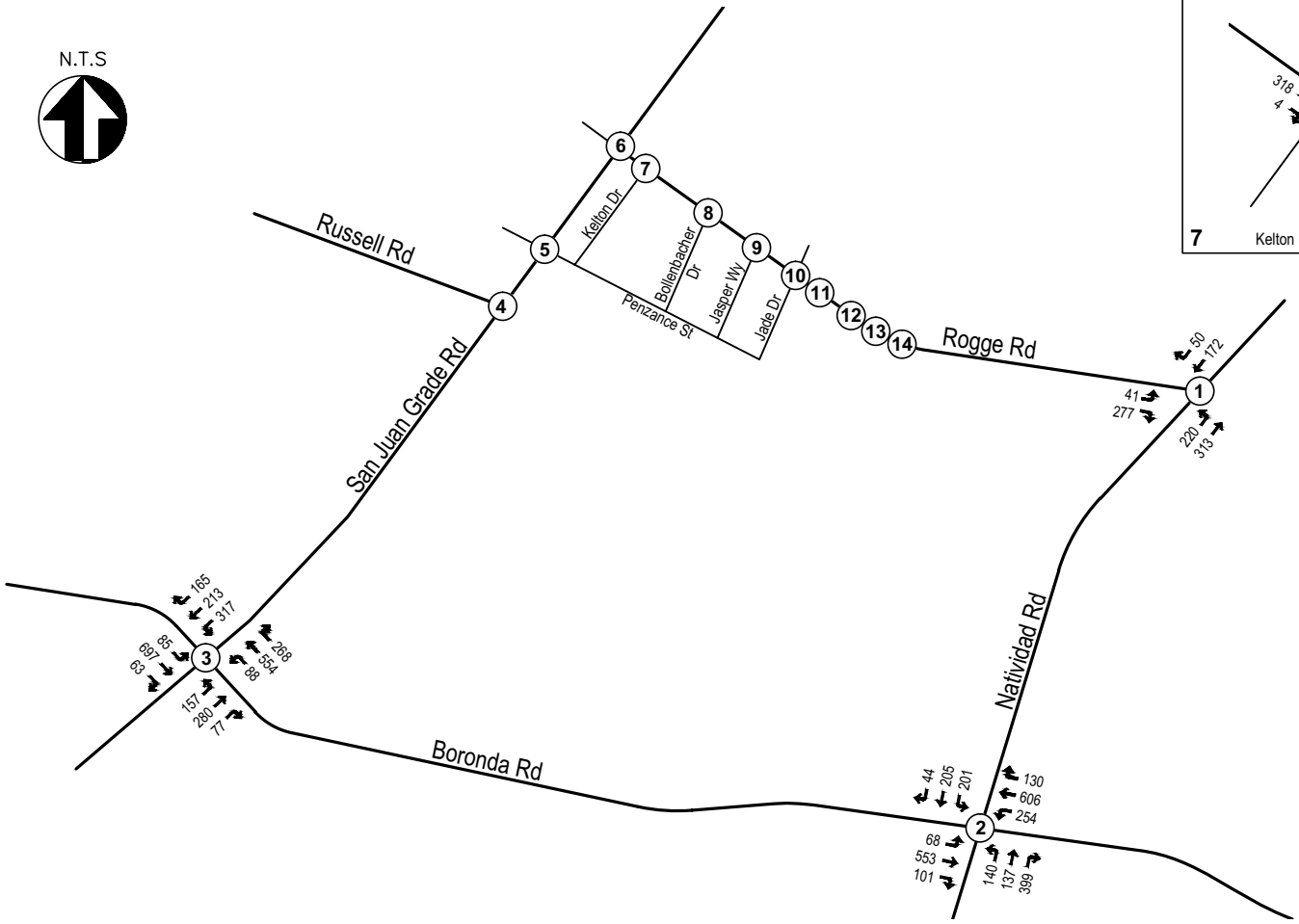
8 Bollenbacher Dr / Rogge Rd



9 Jasper Wy / Rogge Rd



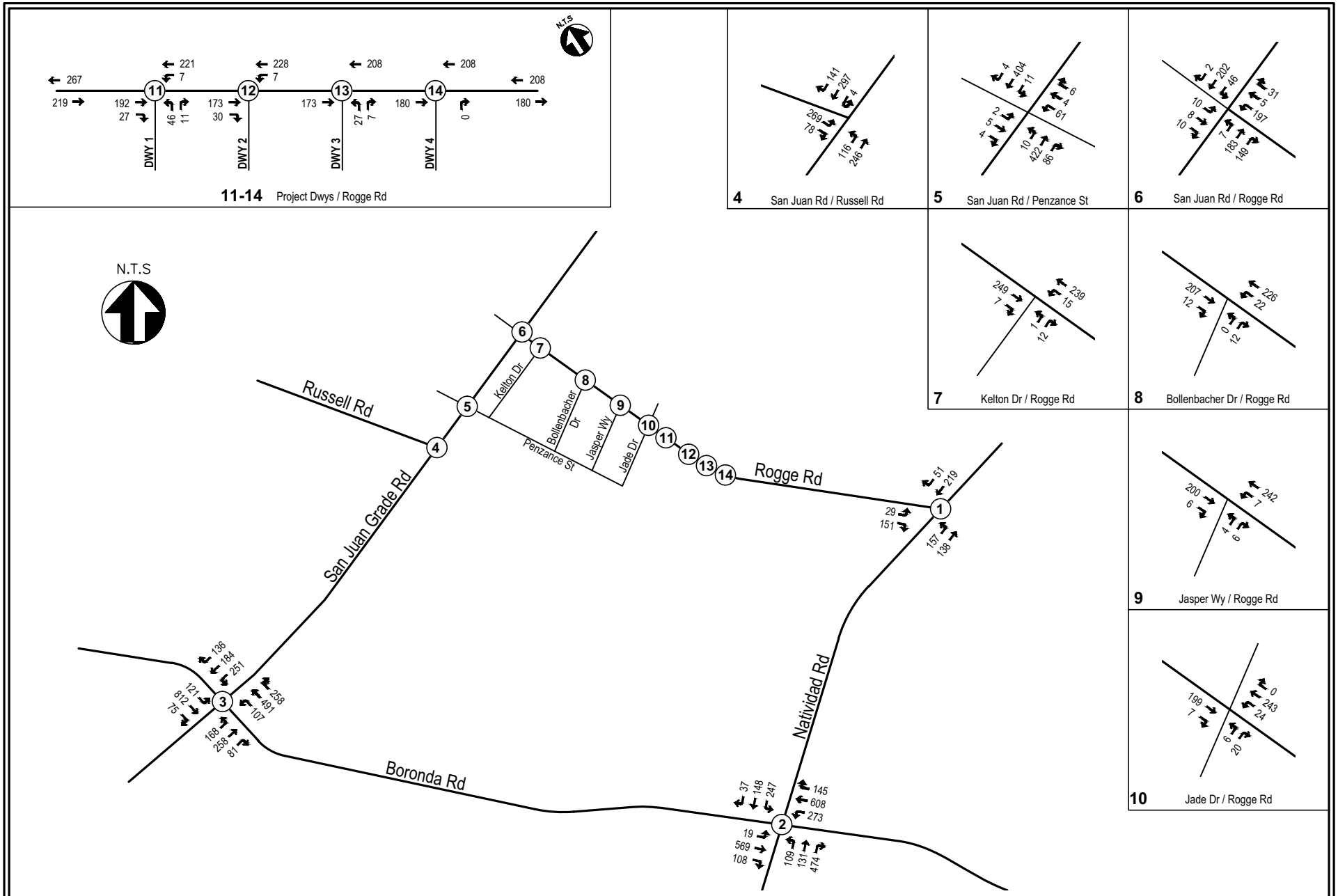
10 Jade Dr / Rogge Rd



Hatch Mott MacDonald

EXHIBIT 9B
EXISTING PLUS PROJECT PHASE 1 CONDITIONS
MIDDAY PEAK HOUR VOLUMES

Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_1248\Volumes Ex+Proj.dwg
Layout: EX-9B Jun 28, 2011, 4:27pm



Hatch Mott MacDonald

EXHIBIT 9C
EXISTING PLUS PROJECT PHASE 1 CONDITIONS
PM PEAK HOUR VOLUMES

Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_1248\Volumes Ex+Proj.dwg
Layout: EX-9C Jun 28, 2011, 4:27pm

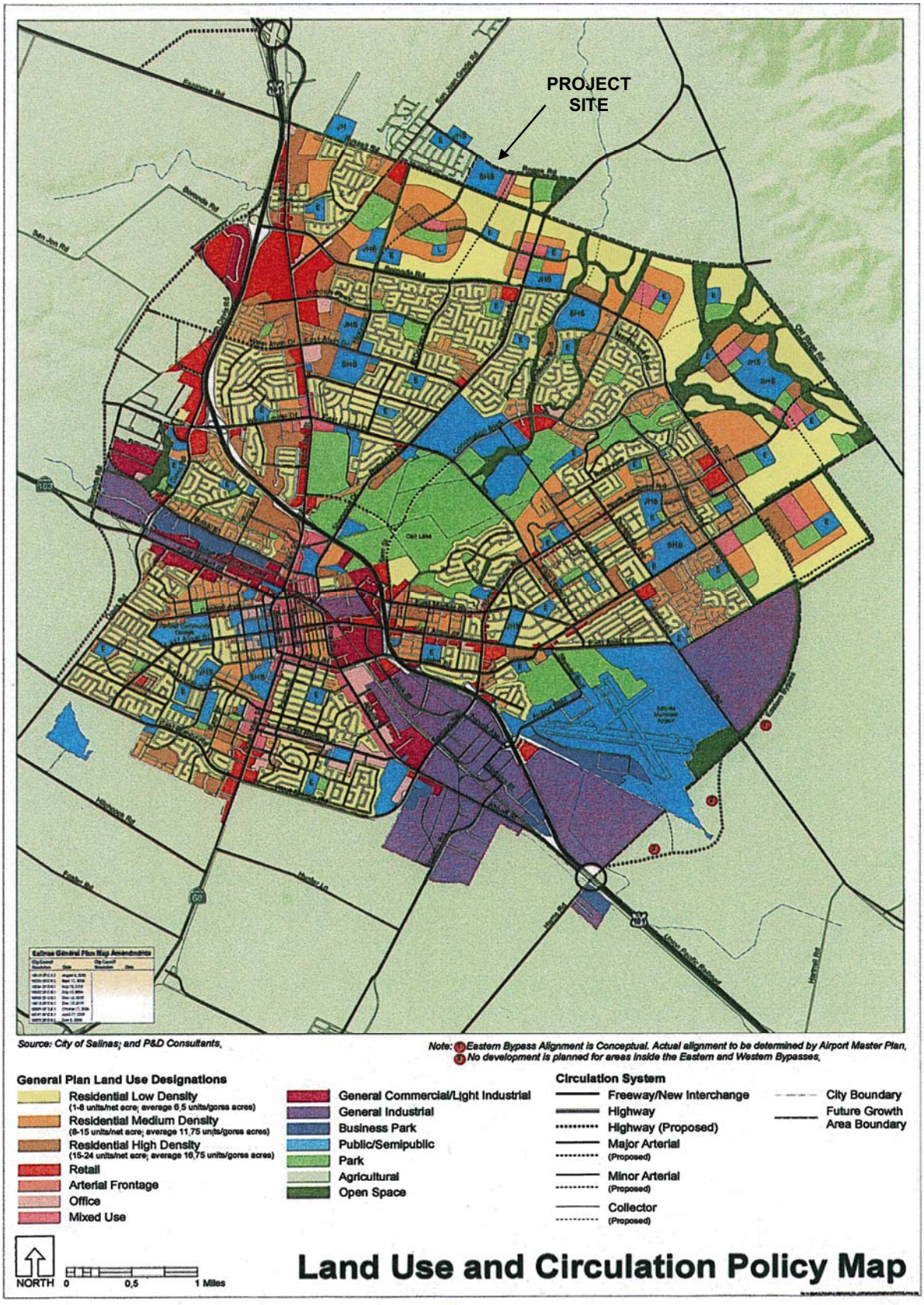
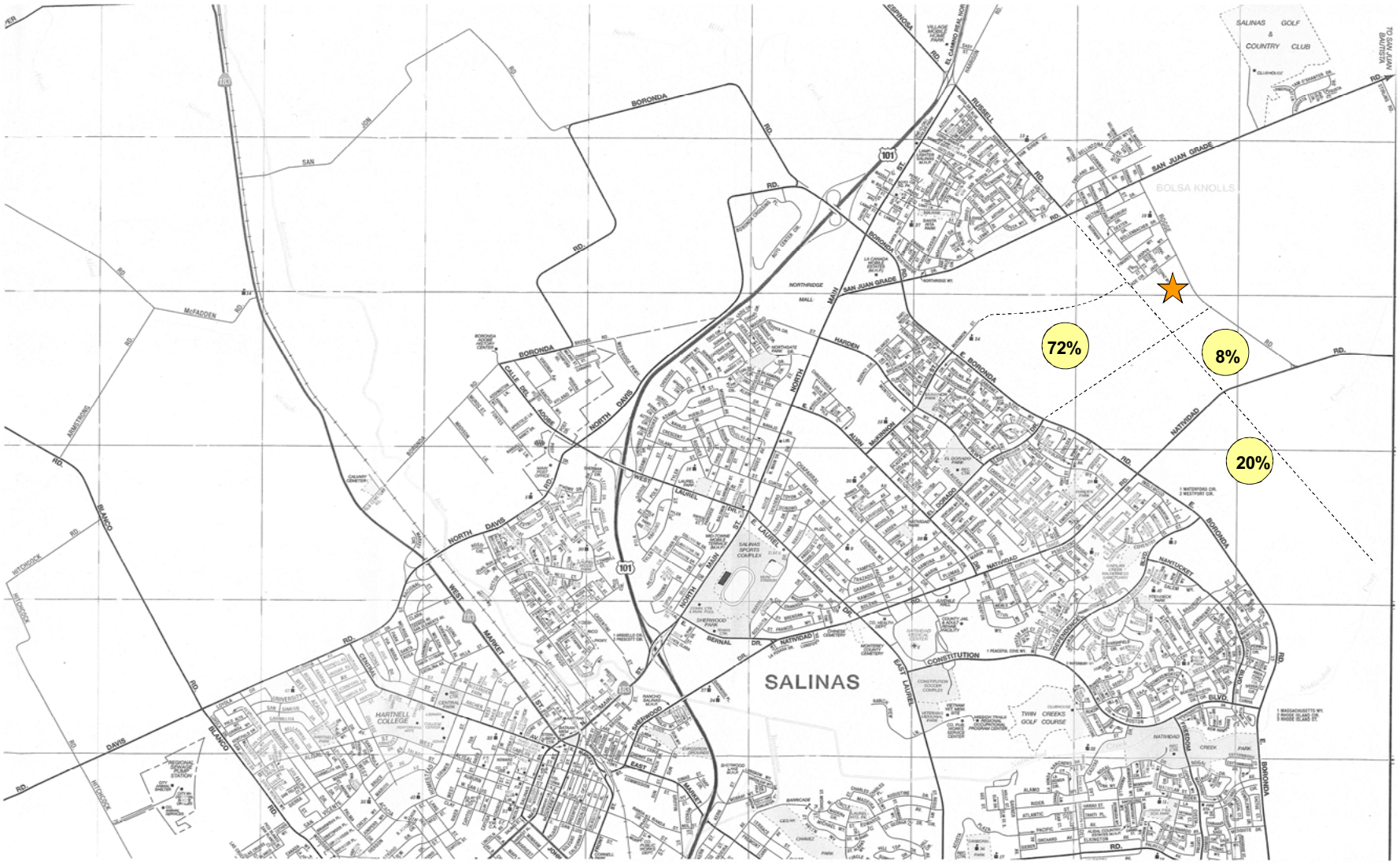
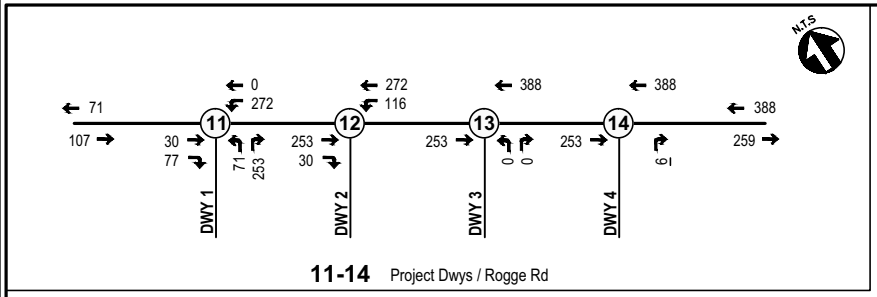


EXHIBIT 10
CITY OF SALINAS
GENERAL PLAN
ROAD NETWORK

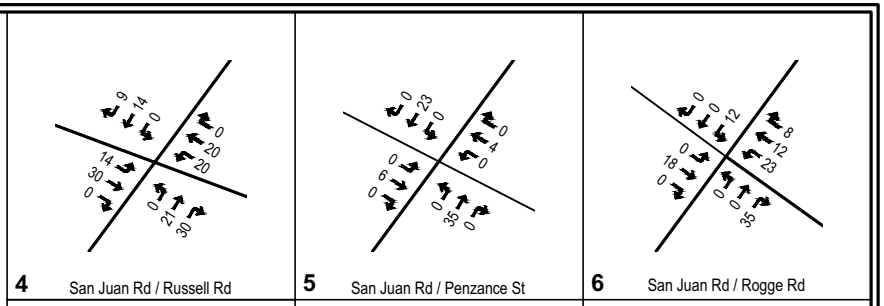


Future Growth Area enrollment = 40% of the total #5 High School attendance.

EXHIBIT 11
PROJECT TRIP DISTRIBUTION
(FUTURE GROWTH AREA -
REMAINDER OF PROJECT BUILDOUT)



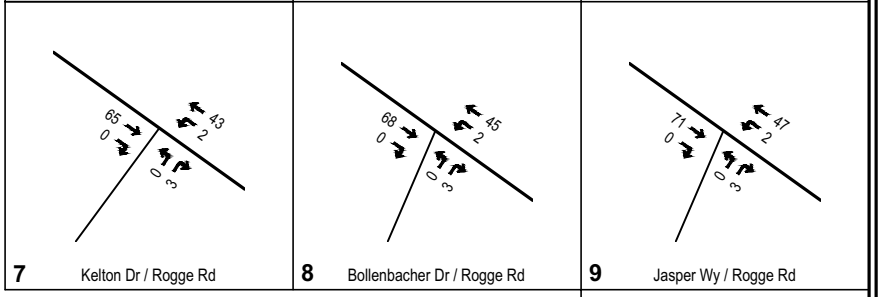
11-14 Project Dwys / Rogge Rd



4 San Juan Rd / Russell Rd

5 San Juan Rd / Penzance St

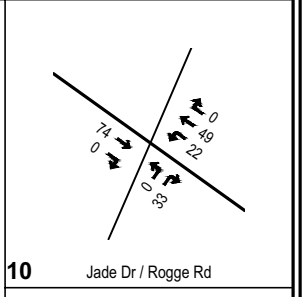
6 San Juan Rd / Rogge Rd



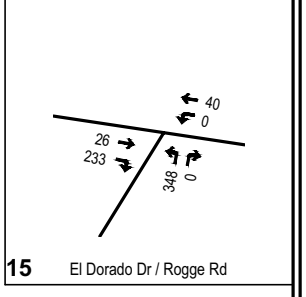
7 Kelton Dr / Rogge Rd

8 Bollenbacher Dr / Rogge Rd

9 Jasper Wy / Rogge Rd



10 Jade Dr / Rogge Rd

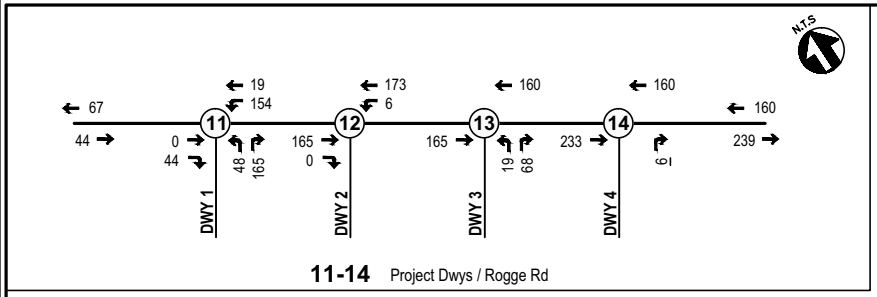


15 El Dorado Dr / Rogge Rd

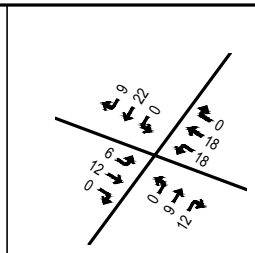
Hatch Mott MacDonald

EXHIBIT 12A
PROJECT BUILDOUT TRIP ASSIGNMENT
AM PEAK HOUR VOLUMES

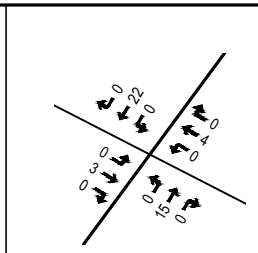
Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_2416\Volumes Proj BO.dwg
Layout: EX-12A Jun 21, 2011, 1:40pm



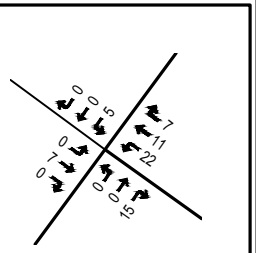
11-14 Project Dwys / Rogge Rd



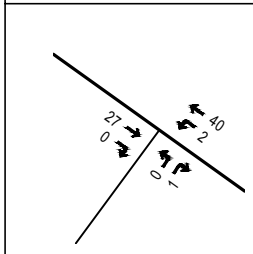
4 San Juan Rd / Russell Rd



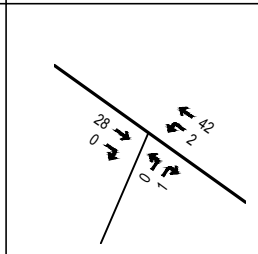
5 San Juan Rd / Penzance St



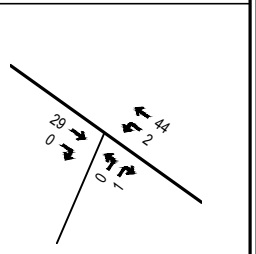
6 San Juan Rd / Rogge Rd



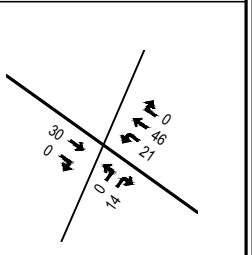
7 Kelton Dr / Rogge Rd



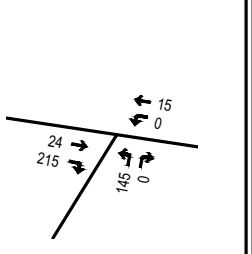
8 Bollenbacher Dr / Rogge Rd



9 Jasper Wy / Rogge Rd



10 Jade Dr / Rogge Rd

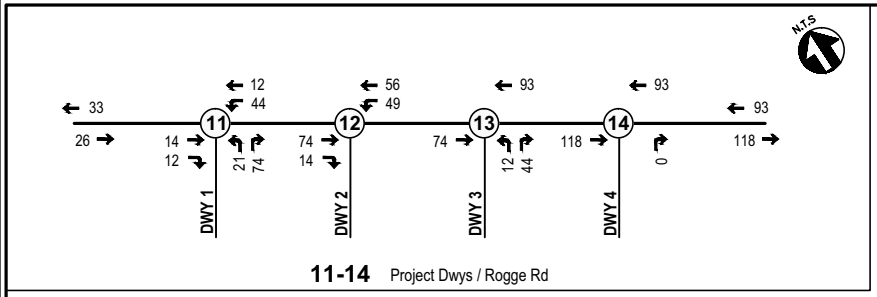


15 El Dorado Dr / Rogge Rd

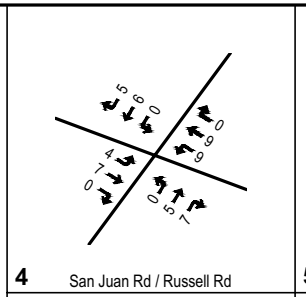
Hatch Mott MacDonald

EXHIBIT 12B
PROJECT BUILDOUT TRIP ASSIGNMENT
MIDDAY PEAK HOUR VOLUMES

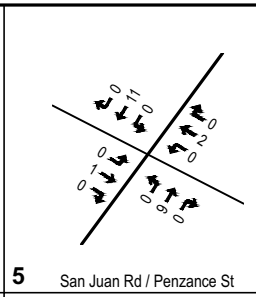
Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_2416\Volumes Proj BO.dwg
Layout: EX-12B Jun 21, 2011, 1:40pm



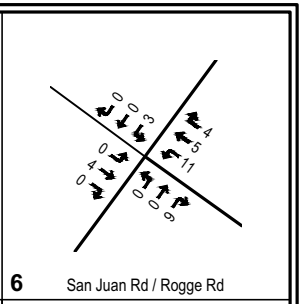
11-14 Project Dwys / Rogge Rd



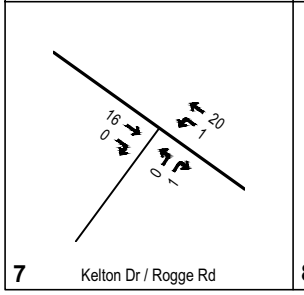
4 San Juan Rd / Russell Rd



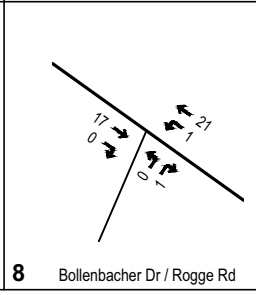
5 San Juan Rd / Penzance St



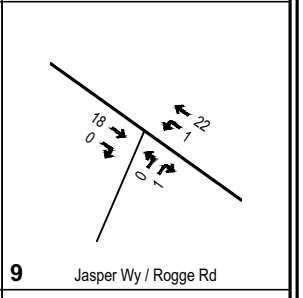
6 San Juan Rd / Rogge Rd



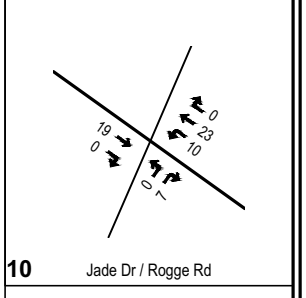
7 Kelton Dr / Rogge Rd



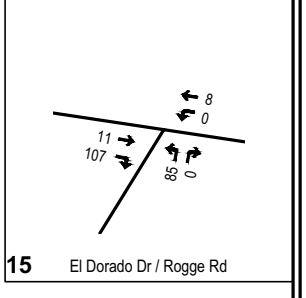
8 Bollenbacher Dr / Rogge Rd



9 Jasper Wy / Rogge Rd



10 Jade Dr / Rogge Rd

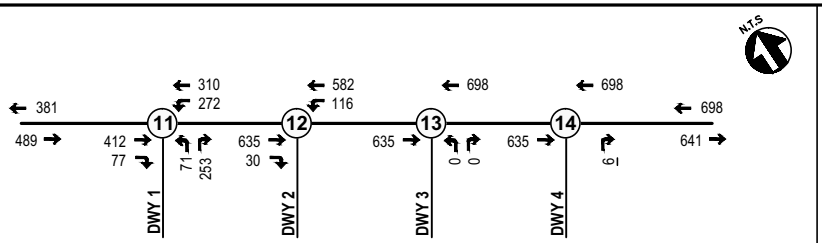


15 El Dorado Dr / Rogge Rd

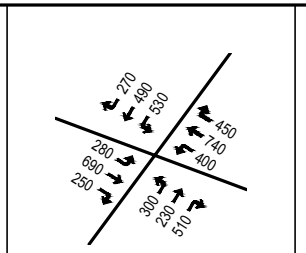
Hatch Mott MacDonald

EXHIBIT 12C
PROJECT BUILDOUT TRIP ASSIGNMENT
PM PEAK HOUR VOLUMES

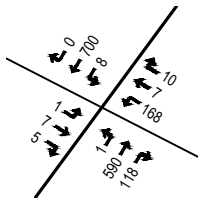
Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_2416\Volumes Proj BO.dwg
Layout: EX-12C Jun 21, 2011, 1:40pm



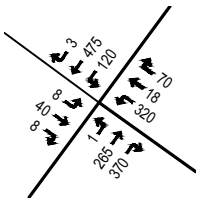
11-14 Project Dwys / Rogge Rd



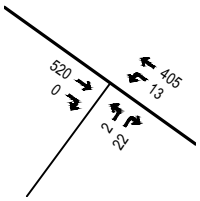
4 San Juan Rd / Russell Rd



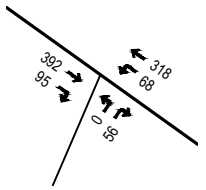
5 San Juan Rd / Penzance St



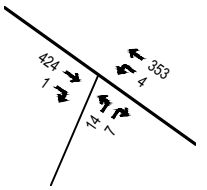
6 San Juan Rd / Rogge Rd



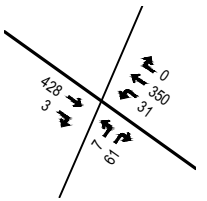
7 Kelton Dr / Rogge Rd



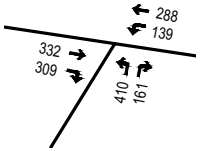
8 Bollenbacher Dr / Rogge Rd



9 Jasper Wy / Rogge Rd



10 Jade Dr / Rogge Rd

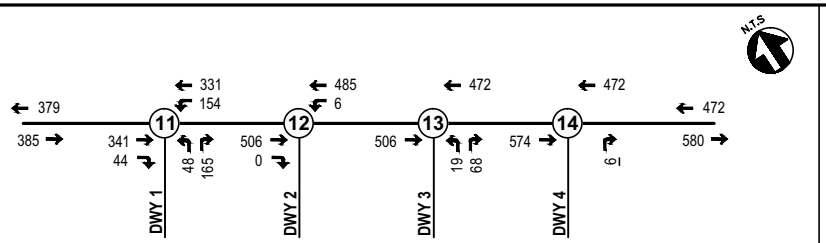


15 El Dorado Dr / Rogge Rd

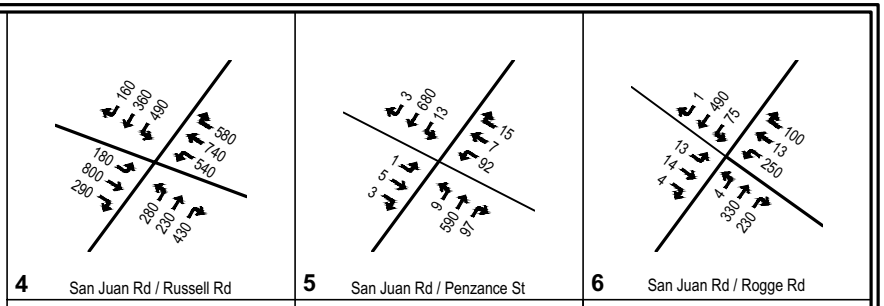
Hatch Mott MacDonald

EXHIBIT 13A
CUMULATIVE WITH PROJECT BUILDOUT CONDITIONS
AM PEAK HOUR VOLUMES

Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_2724\Volumes C+Proj BO.dwg
Layout: EX-13A Jul 05, 2011, 2:29pm



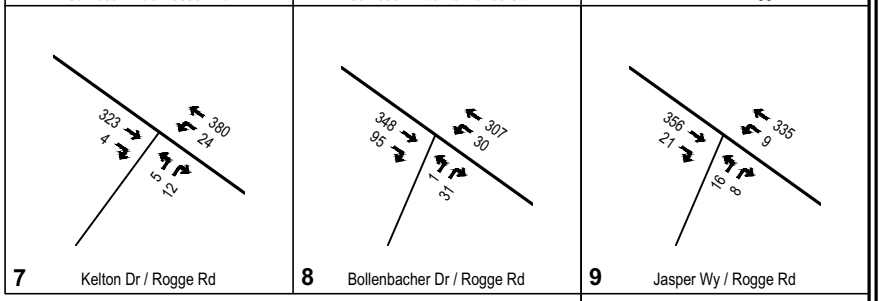
11-14 Project Dwys / Rogge Rd



4 San Juan Rd / Russell Rd

5 San Juan Rd / Penzance St

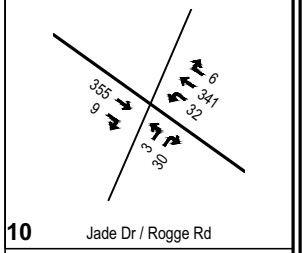
6 San Juan Rd / Rogge Rd



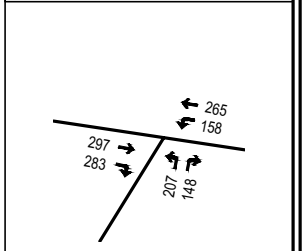
7 Kelton Dr / Rogge Rd

8 Bollenbacher Dr / Rogge Rd

9 Jasper Wy / Rogge Rd



10 Jade Dr / Rogge Rd

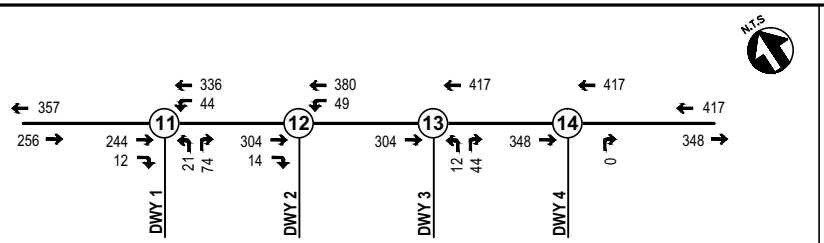


15 El Dorado Dr / Rogge Rd

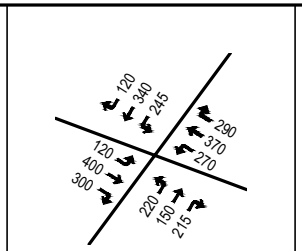
Hatch Mott MacDonald

EXHIBIT 13B
CUMULATIVE WITH PROJECT BUILDOUT CONDITIONS
MIDDAY PEAK HOUR VOLUMES

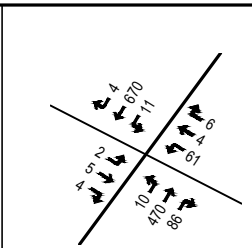
Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_2724\Volumes C+Proj BO.dwg
Layout: EX-13B Jul 05, 2011, 2:29pm



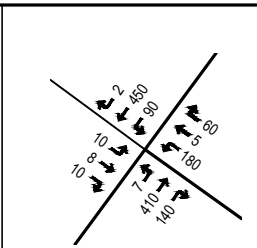
11-14 Project Dwys / Rogge Rd



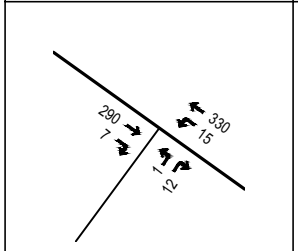
4 San Juan Rd / Russell Rd



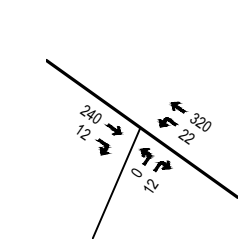
5 San Juan Rd / Penzance St



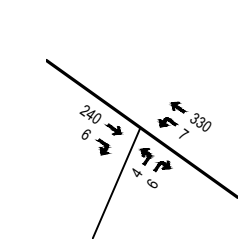
6 San Juan Rd / Rogge Rd



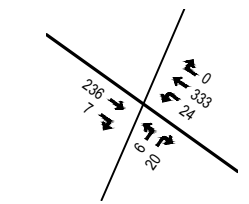
7 Kelton Dr / Rogge Rd



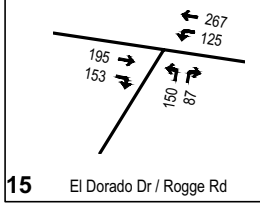
8 Bollenbacher Dr / Rogge Rd



9 Jasper Wy / Rogge Rd



10 Jade Dr / Rogge Rd



15 El Dorado Dr / Rogge Rd

Hatch Mott MacDonald

EXHIBIT 13C
CUMULATIVE WITH PROJECT BUILDOUT CONDITIONS
PM PEAK HOUR VOLUMES

Drawing: C:\DOCUME~1\mey49254\LOCALS~1\Temp\AcPublish_2724\Volumes C+Proj BO.dwg
Layout: EX-13C Jul 05, 2011, 2:29pm

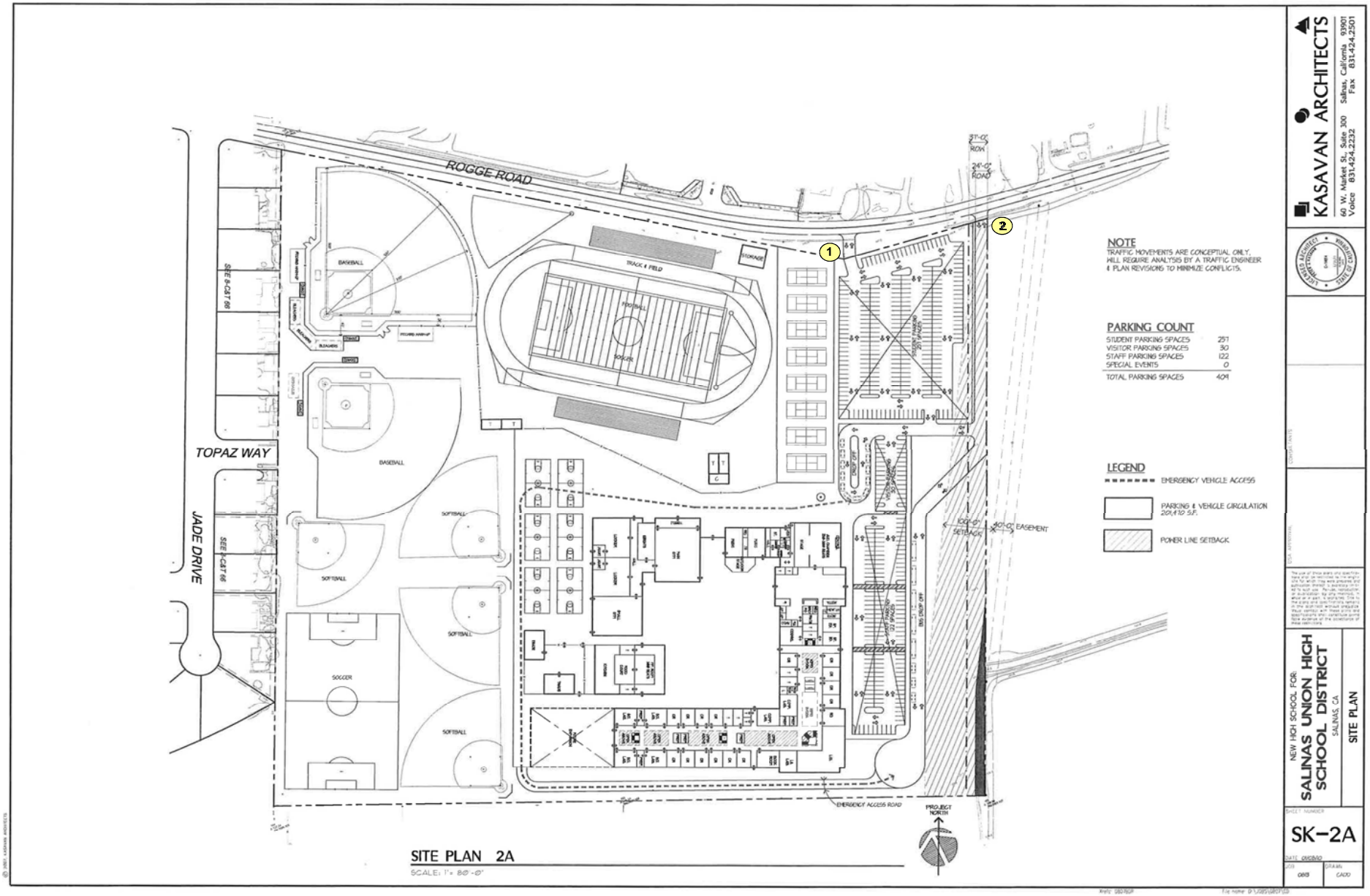


EXHIBIT 14A
PROJECT SITE PLAN
ALTERNATIVE #1

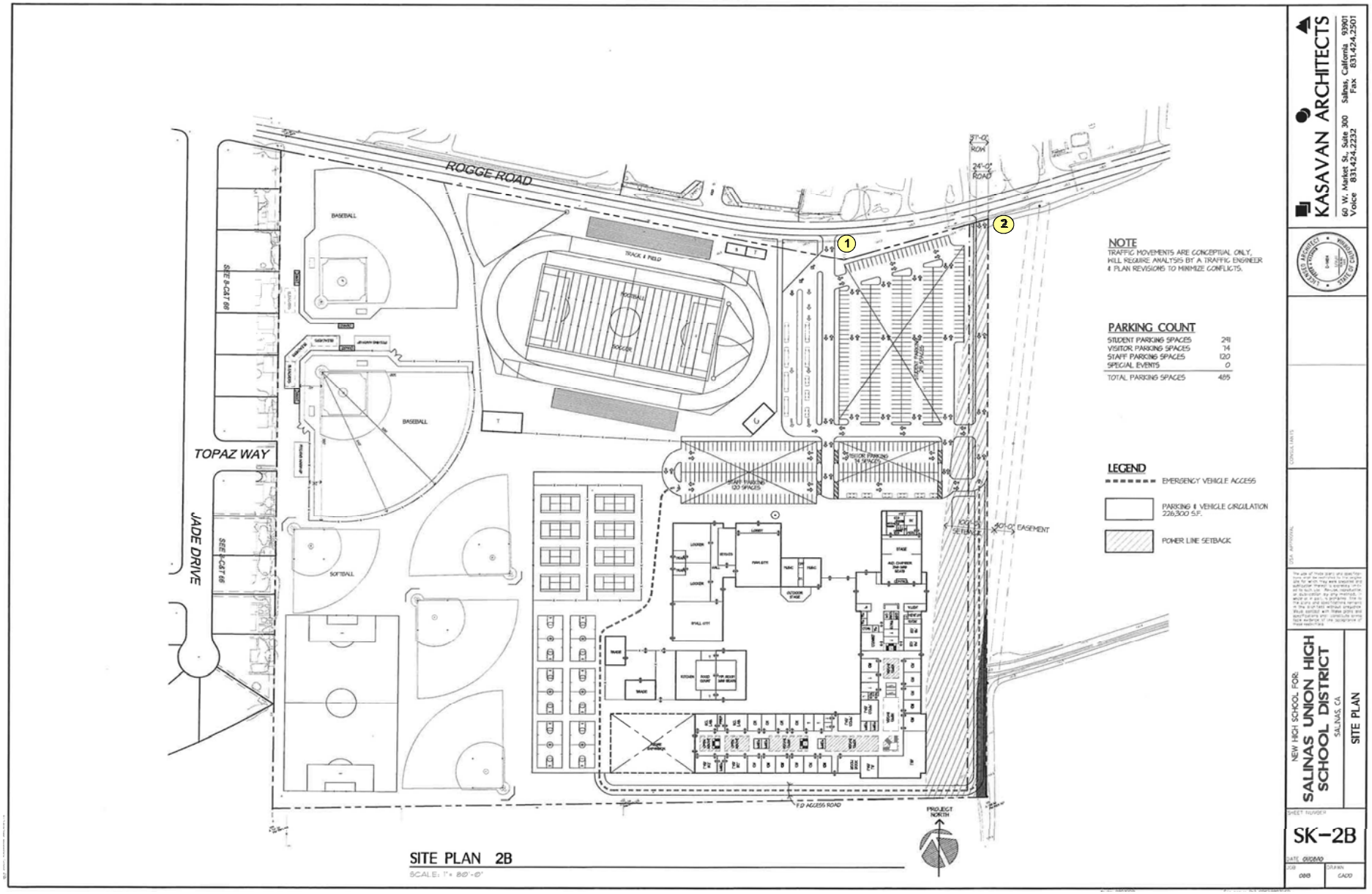
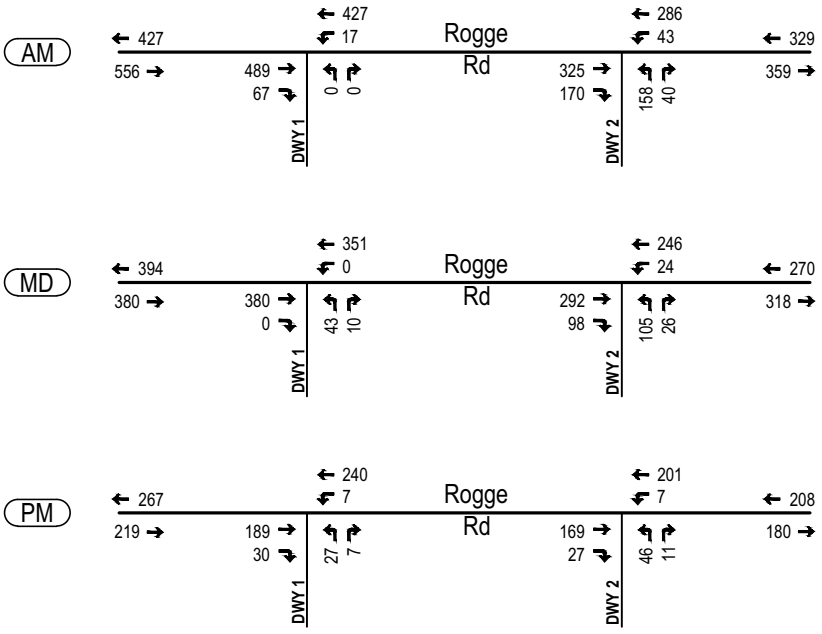


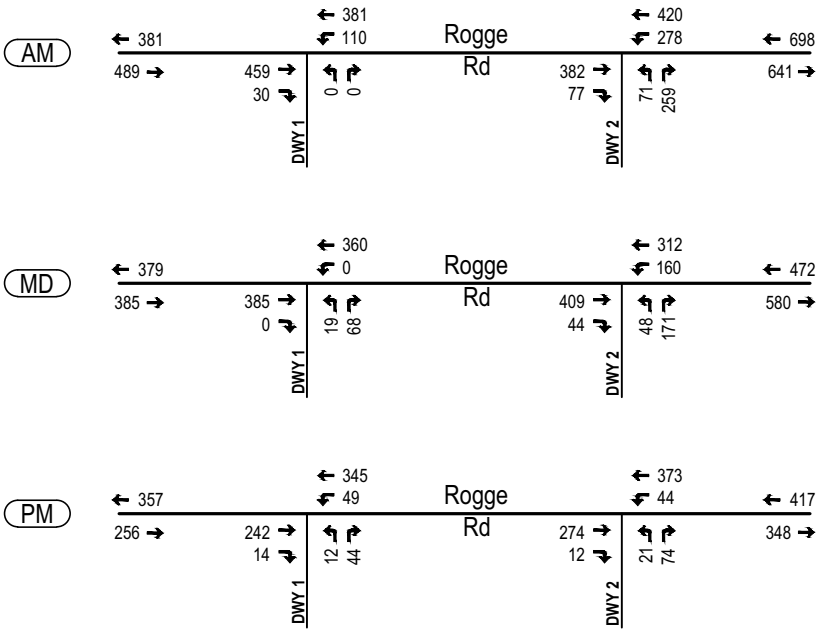
EXHIBIT 14B
PROJECT SITE PLAN
ALTERNATIVE #2

NO SCALE

EXISTING PLUS PROJECT PHASE 1



GENERAL PLAN BUILDOUT PLUS PROJECT BUILDOUT



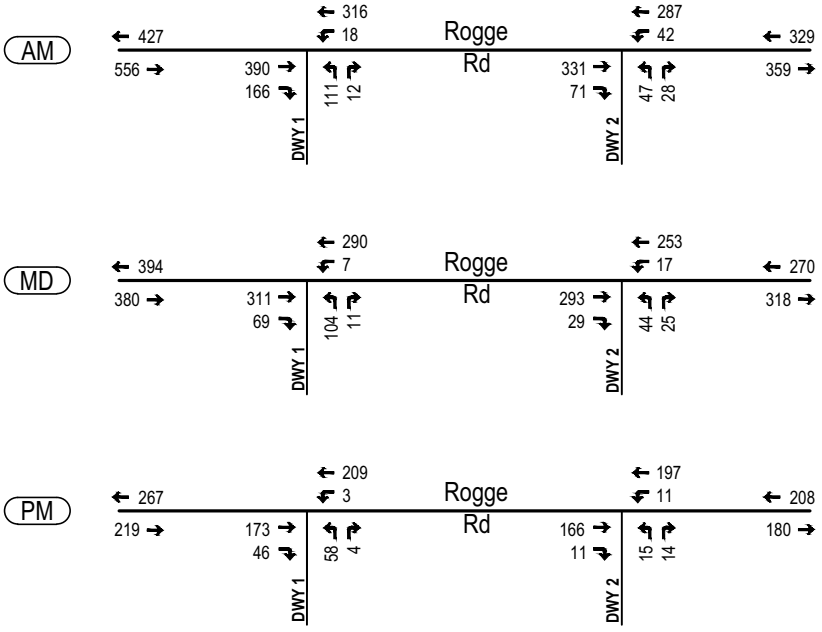
Hatch Mott MacDonald

EXHIBIT 15A
HIGH SCHOOL #5
ROGGE ROAD DRIVEWAY VOLUMES
PROJECT ALTERNATIVE 1

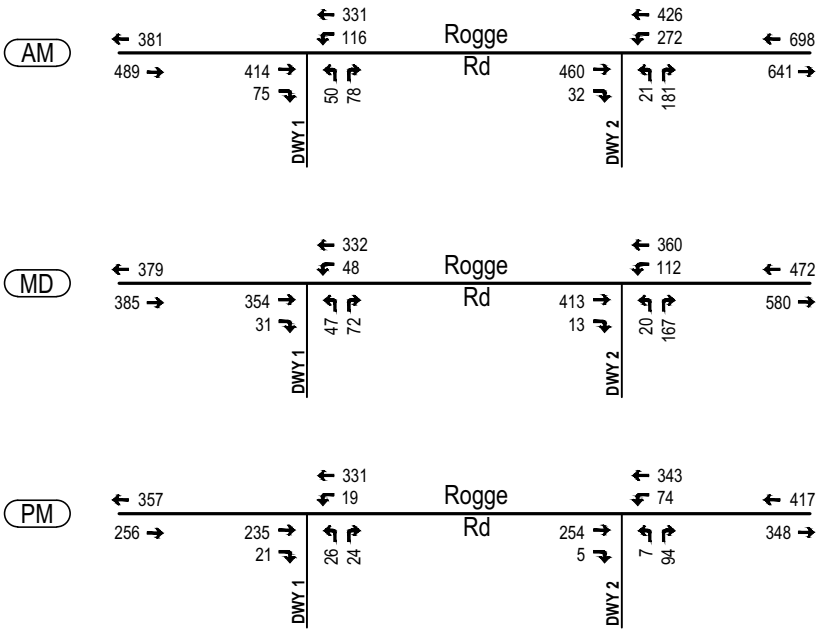
Drawing: I:\2010\Jobs\281369 - Rogge Road High School\Exhibits\AutoCAD\Volumes Dwy Alts.dwg
Layout: EX-15A Jun 21, 2011, 1:18pm

NO SCALE

EXISTING PLUS PROJECT PHASE 1



GENERAL PLAN BUILDOUT PLUS PROJECT BUILDOUT



Hatch Mott MacDonald

EXHIBIT 15B
HIGH SCHOOL #5
ROGGE ROAD DRIVEWAY VOLUMES
PROJECT ALTERNATIVE 2

Drawing: I:\2010\Jobs\281369 - Rogge Road High School\Exhibits\AutoCAD\Volumes Dwy Alts.dwg
Layout: EX-15B Jun 21, 2011, 1:18pm

	N-S Street	E-W Street	Lane Configuration	Existing Intersection Control	LOS Standard	Existing + Project Phase 1 Conditions						Cumulative + Project Buildout Conditions					
						AM Peak Hr		MD Pk Hr		Sat Mid Pk Hr		AM Peak Hr		MD Pk Hr		Sat Mid Pk Hr	
						Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
PROJECT ALTERNATIVE 1																	
1	Driveway #1	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L, 1-T	Two-Way Stop (Worst Approach)	**D** **(E)**	0.2 9.8	A A	1.1 16.1	A C	0.9 11.7	A B	1.3 11.5	A B	1.9 18.6	A C	1.6 13.3	A B
2	Driveway #2	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L, 1-T	Two-Way Stop (Worst Approach)	**D** **(E)**	**110.2** **566.8**	**F** **F**	7.4 43.3	A E	1.8 13.4	A B	* *	**F** **F**	**53.8** **273.3**	**F** **F**	2.3 15.4	A C
				W/ TWLTL													
				Two-Way Stop	***D***	*28.3*	*D*					*308.0*	*F*				
				(Worst Approach)	***(E)***	*143.9*	*F*					*1375.0*	*F*				
				W/ Siginalization	***D***	*24.8*	*C*					-	-	-	-		
				W/ Siginalization & NB free right turn	***D***	-	-					*31.5*	*C*	*15.9*	*B*		
PROJECT ALTERNATIVE 2																	
1	Driveway #1	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L, 1-T	Two-Way Stop (Worst Approach)	**D** **(E)**	4.6 36.5	A E	2.9 19.7	A C	1.6 12.3	A B	16.4 **125.5**	C **F**	3.4 21.6	A C	1.4 14.9	A B
				W/ TWLTL													
				Two-Way Stop	***D***	-	-	-	-	-	-	*4.7*	*A*				
				(Worst Approach)	***(E)***	-	-	-	-	-	-	*28.4*	*D*				
2	Driveway #2	Rogge Road	NB 1-L/R EB 1-T/R WB 1-L, 1-T	Two-Way Stop (Worst Approach)	**D** **(E)**	3.5 32.6	A D	2.1 18.4	A C	1.0 11.3	A B	**211.9** *	**F** **F**	9.4 48.8	A E	2.5 12.7	A B
				W/ TWLTL													
				Two-Way Stop	***D***							*63.5*	*F*				
				(Worst Approach)	***(E)***							*412.0*	*F*				
				W/ Siginalization	***D***							*27.4*	*C*				

NOTES:
1. L, T, R = Left, Through, Right.
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound.
3. Analysis performed using 2000 Highway Capacity Manual methodologies.
4. Worst approach level of service standard is generally LOS E. Level of service "F" is the level of service at which improvements would be required.
5. Levels of service cited under *Mitigations* use recommended improvements shown on *Exhibit 5B*.
6. * = Delay is over 300 seconds (5 minutes)
7. Operations in **bold** represent significant impacts.
8. Rogge Rd TWLTL: Widen Rogge Road to provide a two-way left turn lane (TWLTL) in the median.

EXHIBIT 16
INTERSECTION
LEVELS OF SERVICE
ROGGE ROAD/PROJECT DRIVEWAY
INTERSECTIONS
SITE PLAN ALTERNATIVES 1 AND 2