Appendix H Transportation

Traffic Impact Study – Final Report

CRYSTAL SPRINGS UPLANDS SCHOOL (CSUS)
BELMONT, CA

24 April 2015

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TABLE OF CONTENTS

LIST OF TABLES ii

LIST OF FIGURES ii

INTRODUCTION 1
- Regulatory Framework 1
- Study Methodology 4
- Study Intersections Included in Analysis 9

EXISTING CONDITIONS 12
- Existing Roadway Network 12
- Existing Lane Configurations and Traffic Control 14
- Existing Peak-Hour Turning Movement Volumes 14
- Existing Transit Facilities 17
- Existing Bicycle and Pedestrian Facilities 18
- Existing Intersection Level of Service 18
- Existing Signal Warrants Analysis 20
- Existing Traffic Conditions within Vicinity of Project Site 21
- Proposed Site Use 23
- Project Trip Generation 26
- Project Trip Distribution and Assignment 31
- Existing Plus Project Level of Service 31
- Existing Plus Project Signal Warrants Analysis 37

FUTURE ROADWAY AND DEVELOPMENT PROJECTS 38
- Buildings in Vicinity of Project Site 38
- Future (2020) Forecast Volumes 40

FUTURE (2020) NO PROJECT TRAFFIC CONDITIONS 43
- Future Intersection Level of Service 43
- Future Signal Warrant Analysis 45
- Future Plus Project Intersection Level of Service 45
- Future (2020) Plus Project Signal Warrants Analysis 49

VEHICLE QUEUING FOR ALL SCENARIOS 50

EXCLUSIVE TURN LANE WARRANT ANALYSIS FOR ALL SCENARIOS 52

POTENTIAL EFFECTS ON TRANSIT, BICYCLE, AND PEDESTRIAN MOBILITY 53

PROPOSED TRAFFIC FLOW, PARKING AND TDM PLANS 54

CONSTRUCTION RELATED IMPACTS REVIEW 57

SUMMARY OF IMPACTS AND RECOMMENDED MITIGATIONS 57
Recommended Mitigations 58

LIST OF TABLES

Table 1 – Intersection Level of Service Definitions 5
Table 2: Potentially Significant Impact Criteria for Signalized Intersections 6
Table 3: Potentially Significant Impact Criteria for Unsignalized Intersections 7
Table 4 - Existing (2014) Intersection Level of Service Summary 19
Table 5 - Existing (2014) Intersection v/c Ratios 20
Table 6 - Project Trip Generation 29
Table 7 - Existing (2014) Plus Project Intersection Level of Service Summary 36
Table 8 - Existing Plus Project (2014) Signal Warranted Intersection v/c Ratios 37
Table 9 – Net Additional Trip Generation by Occupancy from Davis Drive Offices 39
Table 10 - Future (2020) No Project Intersection Level of Service Summary 44
Table 11 – Future (2020) No Project Signal Warranted Intersection v/c Ratios 45
Table 12 - Future (2020) Plus Project Intersection Level of Service Summary 48
Table 13 – Future (2020) Plus Project Signal Warranted Intersection v/c Ratios 49
Table 14 – Summary of Vehicle Queuing for All Scenarios 51
Table 15 - Summary of Significant Measures of Effectiveness (MOEs) & Possible Mitigations 66

LIST OF FIGURES

Figure 1: City of Belmont Vicinity Map 2
Figure 2: Project Study Area 11
Figure 3: Existing Lane Geo & Traffic Control 15
Figure 4: Existing Turning Movements 16
Figure 5: Project Site Plan 25
Figure 6: CSUS Bell vs Peak Traffic 28
Figure 7: Project Trip Distribution 33
Figure 8: Project Trip Assignment 34
Figure 9: Existing Plus Project Turning Movements 35
Figure 10: Future No Project Turning Movements 42
Figure 11: Future Plus Project Turning Movements 47

INTRODUCTION

Kimley-Horn was retained by Crystal Springs Uplands School (CSUS) to prepare a traffic impact analysis (TIA) for a proposed land-use conversion of an existing office and warehouse buildings to a middle school campus in Belmont, CA (Project). Belmont is in San Mateo County and is approximately 25 miles south of San Francisco in the greater San Francisco Bay area.

The Project is to be located at 6-8 and 10 Davis Drive in Belmont. Davis Drive intersects Ralston Avenue approximately 1.15 miles from the I-280 Interchange. **Figure 1** illustrates the location of the Project site in relation to the greater Belmont area.

This TIA was prepared based on discussions with, and criteria set forth by the City of Belmont (City). This study addresses the traffic and transportation inputs of the Project in order to assist the City with its environmental review of the Project.

Regulatory Framework

The following sets forth the regulatory agency and documents used in this TIA:

City/County Association of Governments (C/CAG) of San Mateo County

The City/County Association of Governments (C/CAG) of San Mateo County acts as the San Mateo County Congestion Management Agency and is charged with monitoring the implementation of all elements of the Congestion Management Program (CMP) and determining conformance with the CMP's requirements and recommendations. The intersection of Ralston Avenue and El Camino Real is included under the CMP roadway network.

C/CAG Capital Improvement Program (CIP)

The Capital Improvement Program (CIP) is a seven-year program of projects expected to maintain or improve traffic levels of service and transit performance within San Mateo County, and to mitigate the impacts of land use decisions. Currently, there are no planned mitigations listed under the capital improvement program that are applicable to this Project. In addition, the City of Belmont does not have a current standalone mitigation program in place within its General Plan, which is applicable to this Project.

City of Belmont Guidelines for Traffic Impact Studies

In 2012, the City created the City of Belmont Guidelines for Traffic Impact Studies[1] (Guidelines) which contain the significance criteria for a proposed project concerning transportation measures of effectiveness. The Guidelines[2] were updated in August

[1] *The City of Belmont Guidelines for Traffic Impact Studies*, The City of Belmont, February 2012.
[2] *The City of Belmont Guidelines for Traffic Impact Studies*, The City of Belmont, August 2014

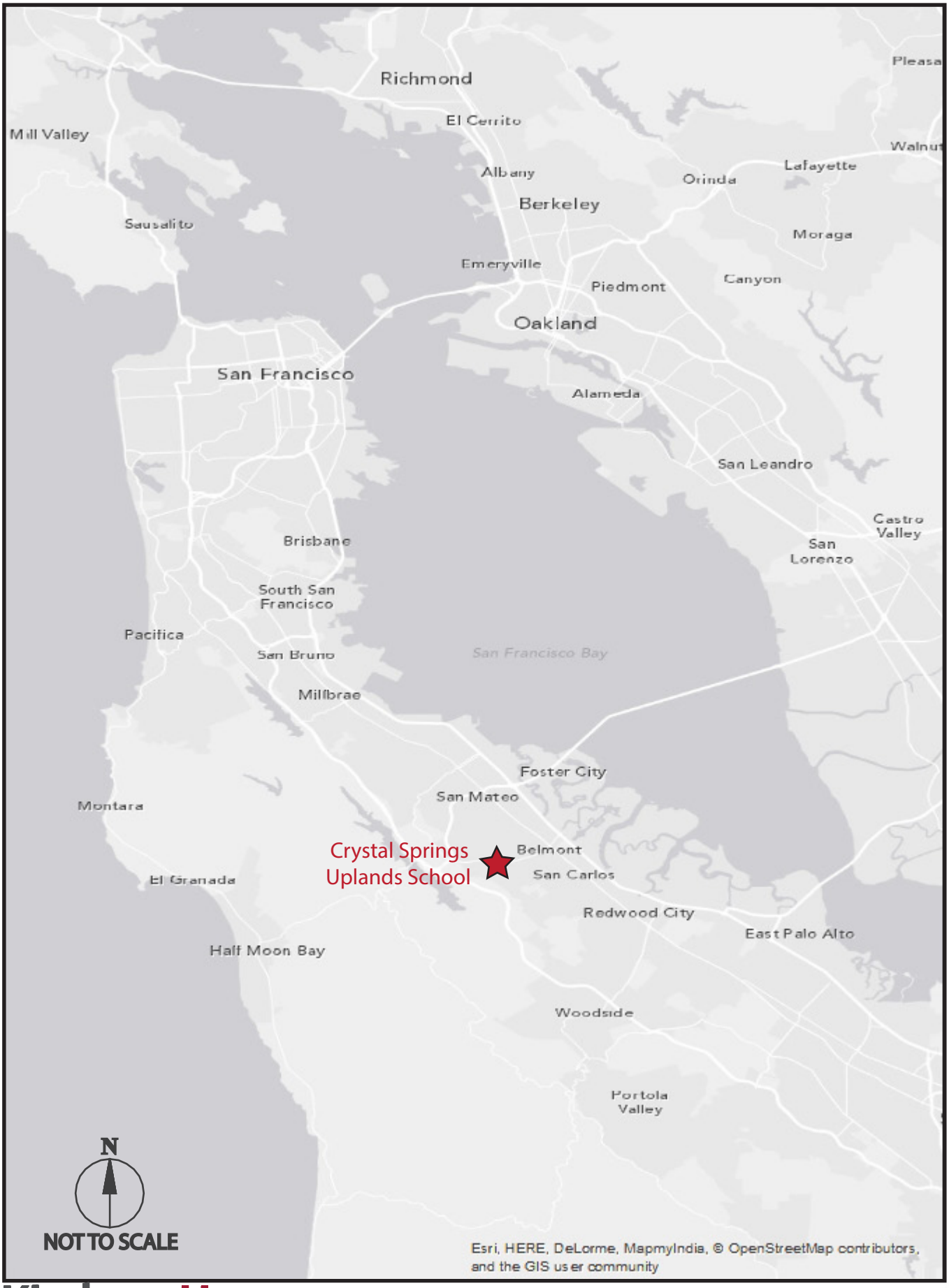

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FIGURE 1
CITY OF BELMONT VICINITY

MM-097609002 April 2015

CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

2014, and those requirements are utilized for the TIA evaluation and results reported herein.

Ralston Avenue Corridor Study (RCS)

The City Council adopted the Ralston Avenue Corridor Study and Improvements Plan (RCS) in August 2014. The goal of the RCS was to determine the adequacy of existing and future traffic conditions, circulation, physical inventory of the gaps, and a multi-modal evaluation of traffic operations related to signals, pedestrian and bicycle facilities, transit, and parking in the Ralston corridor. Based on the outcome of this analysis, the RCS then developed transportation improvement alternatives—both short term and long term capital improvement projects, with associated budgets and funding strategies.

Program for Arterial Signal Synchronization (PASS)

The Department of Public Works received a grant from the Metropolitan Transportation Commission (MTC) in the Fall of 2013 for traffic signal timing analysis and improvement plans along the Ralston Avenue corridor and adjacent traffic signals along El Camino Real and Old County Road. The project's scope of work included analysis of existing conditions and various measures of effectiveness concerning the development of timing plans and their implementation along Ralston Avenue.

Highway Capacity Manual (HCM)

The Highway Capacity Manual (HCM) provides transportation practitioners and researchers with a consistent system of techniques for the evaluation of the quality of service on highway and street facilities. Its objectives include providing a logical set of methods for assessing transportation facilities, assuring that practitioners have access to the latest research results. The HCM is an accepted transportation analysis methodology reference tool utilized by transportation engineering professionals.

Manual of Uniform Traffic Control Devices (MUTCD)

The Manual on Uniform Traffic Control Devices (MUTCD) is approved by the Federal Highway Administrator as the National Standard in accordance with Title 23 U.S. Code. The California Department of Transportation has adopted the California MUTCD to provide for uniform standards and specifications for all official traffic control devices in California.

Study Methodology

Development Conditions

This TIA was based on the following development conditions:

- Existing (2014) Conditions – Based on current traffic counts taken in February and March 2014 and existing roadway geometry and traffic control.
- Existing (2014) plus Project Conditions – Based on existing traffic volumes, existing roadway geometry and traffic control and traffic generated by the Project.
- Future (2020) No Project Conditions – Based on existing traffic volumes and traffic added by approved projects that the City believes will contribute traffic to the study area by year of full project completion (anticipated to be 2020 or earlier). This development condition will also include other regional traffic growth obtained from the San Mateo Countywide gravity demand model, which is maintained by the City/County Association of Governments of San Mateo County (C/CAG) in the form of compounded annual growth rates in addition to assumed growth at Ralston Middle School and Fox Elementary School. The roadway network will include existing conditions plus programmed roadway projects to be in place at the same time the Project is anticipated to be complete.
- Future (2020) plus Project Conditions – Based on existing traffic volumes, traffic added by approved projects as referenced above, regional traffic growth, and traffic generated by the Project. This scenario includes one roadway project programmed to be in place at the same time the Project is anticipated to be completed: the signalization of Ralston Avenue and Tahoe Drive.

The peak hours analyzed within each scenario are to be defined as the following:

- AM Peak Hour – The adjacent street traffic peak hour for each individual intersection (i.e., one hour between 7:00 AM and 9:00 AM) plus the traffic generated by CSUS during the school's ingress and egress routes surrounding the AM bell and associated pick-up and drop-off activities.
- Midday Peak Hour – The adjacent street traffic peak hour for each individual intersection (i.e., one hour between 2:00 PM and 3:00 PM) plus the traffic generated by CSUS during the school's ingress and egress routes surrounding the afternoon bell and associated afternoon pick-up and drop-off activities. It is important to note that this does not correlate with the "typical" midday peak hour of adjacent street traffic; typically that peak lies between 11:00 AM and 2:00 PM.
- PM Peak Hour – The adjacent street traffic peak hour for each individual intersection (i.e., one hour between 4:00 PM and 6:00 PM) plus the traffic generated by CSUS during the school's ingress and egress routes surrounding the afternoon activities' dismissal time.

Clarification on how the adjacent street peak hours interact with the CSUS school peaks can be seen in the descriptions within the Project Trip Generation Section and in **Figure 6**.

Operating Conditions and Criteria

Analysis of significant environmental impacts at intersections and roadway segments is based on the concept of Level of Service (LOS). Levels of Service for this study were determined using methods defined in the Highway Capacity Manual, 2000 (HCM) and appropriate traffic analysis software. The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity.

The HCM includes procedures for analyzing side street stop controlled (SSSC), all-way stop controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. **Table 1** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	≤ 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50
Sources: Transportation Research Board, Highway Capacity Manual 2000, National Research Council, 2000.			

Project impacts are determined by comparing conditions with the Project to those without the Project. Potentially significant impacts for intersections are created when traffic from the Project causes the LOS to fall below (worse than) a specific threshold or when delay and/or v/c ratios are increased beyond certain limits.

According to the potentially significant impact criteria documented in the City's Guidelines, for the Project to create a potentially significant impact the Project condition would need to meet the criteria listed in either **Table 2** or **3**. It should be noted that these guidelines are more stringent than surrounding jurisdictions' criteria, which simply cite an overall LOS standard with potential incremental criteria for cases where the base case is worse than LOS D only.

Table 2: Potentially Significant Impact Criteria for Signalized Intersections

If the base case (without project) LOS is:	Then the existing control delay is:	The project impact is considered potentially significant if the increase in control delay associated with the project is:	And the demand to capacity ratio (v/c) increased by more than :
A	10 second or less	10 seconds	0.02
B	10.1 to 20.0 seconds	10 seconds	0.02
C	20.1 to 35.0 seconds	7.5 seconds	0.02
D	35.1 to 55.0 seconds	4 seconds	0.01
E	55.1 to 80.0 seconds	4 seconds*	0.01
F	Greater than 80 seconds	4 seconds*	0.01

*If the addition of the project traffic results in a decrease in intersection delay, a project impact is considered potentially significant if 35 or more project trips are added to an intersection operating at LOS E or 20 or more project trips added to an intersection operating at LOS F.

For unsignalized intersections, the City's Guidelines have different criteria for all-way stop controlled intersections and side-street stop controlled intersections.

For all-way stop controlled intersections, Project traffic would have a potentially significant impact if Project traffic degrades operation of the intersection from

acceptable conditions to poorer than LOS D operation. If the existing or Base Case (without Project) operation of an all-way-stop intersection is already worse than LOS D, Project related traffic would have a potentially significant impact if the delay or volume thresholds listed in **Table 3** are exceeded.

For side street stop controlled intersections, Project traffic would have a potentially significant impact if Project traffic degrades operation of stop sign controlled approaches and/or turn movements at a side street stop controlled intersection from acceptable conditions to poorer than LOS D operation (greater than 35 seconds of average control delay). If the existing or Base Case (without Project) operation of the stop sign controlled approach or movement is already worse than LOS D (35 seconds control delay), Project-related traffic would have a potentially significant impact if the delay or volume thresholds listed in **Table 3** are exceeded.

Table 3: Potentially Significant Impact Criteria for Unsignalized Intersections

If the existing or base case (without project) LOS is:	Then the existing average control delay experienced by all drivers entering the intersection is:	The project impact is considered potentially significant if the average control delay associated with the project is:
A	10 second or less	10 seconds
B	10.1 to 15.0 seconds	5 seconds
C	15.1 to 25.0 seconds	5 seconds
D	25.1 to 35.0 seconds	4 seconds
E	35.1 to 50.0 seconds	4 seconds*
F	Greater than 50 seconds	4 seconds*

*If the addition of the project traffic results in a decrease in intersection delay, a project impact is considered potentially significant if 25 or more project trips are added to an intersection operating at LOS E or 15 or more project trips are added to an intersection operating at LOS F.

The approach using the City's Guidelines on side-street stop controlled intersections was verified in an email from the City on April 14, 2015.

Signal Warrant Impacts at Intersections

Traffic signals may be justified at unsignalized intersections when traffic operations fall below acceptable thresholds and when one or more signal warrants are satisfied. Traffic volumes at the unsignalized study intersections were compared against the peak hour warrant in the 2000 California Manual on Uniform Traffic Control Devices (CA MUTCD)[3]. Traffic Signal Warrant #3 – Peak Hour Volume Warrant is satisfied when traffic volumes on the major and minor approaches exceed thresholds for one hour of the day. The Peak Hour Warrant is generally the first warrant to be satisfied. Other warrants, such as for minimum vehicle volumes, interruption of continuous traffic, and traffic progression, were not evaluated because they generally require higher traffic volumes to be satisfied. According to the City's Guidelines, a potentially significant impact would occur if a project caused an unsignalized intersection to meet the warrant. For cases where a warrant is met under no project condition, a project would create a potentially significant impact if project traffic increases the volume to capacity ratio (v/c) by 0.01.

Vehicle Queuing Impacts at Intersections

The effects of vehicle queuing were also analyzed and the 95th percentile queue is reported for all study intersections. The "95th percentile queue" length is a best practice metric used in transportation engineering analysis concerning queue lengths and represents a condition where 95 percent of the time during the peak period, traffic volumes and related queuing will be at, or less, than the queue length determined by the analysis; average queuing is generally less. Queuing is considered a potentially significant impact since queues that exceed the turn pocket length can create potentially hazardous conditions by blocking or disrupting through traffic in adjacent travel lanes. However, these potentially hazardous queues are generally associated with left-turn movements. Locations where the right turn pocket storage is exceeded are not considered potentially hazardous because the right turn movement may go at the same time as the through movement and the additional vehicles that spill out over the turn pocket will not be hindering or disrupting the adjacent through traffic as would be the case in most left turn pockets.

The City's criteria states that there would be a potentially significant impact if Project traffic creates vehicle queues exceeding turn lane capacity or causes problematic back-ups of traffic on driveways or roadways on or off the Project site. For locations where Base Case volumes already create vehicle queues exceeding turn lane capacity, there would be a potentially significant impact where Project traffic increases vehicle queues by 1%.

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[3] *California Manual on Uniform Traffic Control Devices,* (FHWA's MUTCD 2003 Edition, including Revisions 1 and 2, as amended for use in California), January 21, 2010

Thus, for purposes of this analysis a potentially significant queuing impact was interpreted and confirmed by the City of Belmont to occur if:

Project traffic creates vehicle queues exceeding turn lane capacity or causes problematic back-ups of traffic on driveways or roadways on or off the project site. For locations where Base Case volumes already create vehicle queues exceeding turn lane capacity, project traffic increases the Base Case vehicular queue length by 25', the conservative length of one vehicle (e.g., if the Base Case turn pocket storage length is 150' and the Base Case analyzed vehicular queue length is 155', the addition of 25' or one vehicle would cause a potentially significant impact). [4]

Turn Lane Warrant Impacts at Intersections

The City's Guidelines state that there would be a potentially significant impact if Project traffic increases volumes to a level meeting or exceeding criteria for the provision of a right or left turn lane on an intersection approach. For locations where Base Case volumes already exceed turn lane warrant criteria levels, there would be a potentially significant impact where Project traffic increases peak hour volumes by more than 1%.

Using Highway Capacity Manual (HCM) 2000 methodology, the presence of exclusive left-turn lanes is determined by the volume of left-turn traffic, opposing volumes, and safety considerations. A single exclusive left-turn lane is warranted when the volume exceeds 100 vehicles per hour, double exclusive left turn lanes are warranted when the turning volume exceeds 300 vehicles per hour. Although right turns are generally made more efficiently than left turns, exclusive right-turn lanes are often provided for many of the same reasons that left-turn lanes are used. Right turns may face a conflicting pedestrian or bicycle flow, but they do not face a conflicting vehicular flow. According to HCM 2000, in general, an exclusive right-turn lane should be considered if the right-turn volume exceeds 300 vehicles per hour and the adjacent mainline volume exceeds 300 vehicles per hour per lane.

Study Intersections Included in Analysis

To assess changes in traffic conditions associated with the Project, the following intersections, which all lie within the City's jurisdiction, were selected by the City for evaluation in this traffic study:

1. Ralston Avenue/ El Camino Real
2. Ralston Avenue/ Sixth Avenue
3. Ralston Avenue/ South Road

[4] This interpretation is conservative and was approved by the City of Belmont on March 12, 2015. Given the City's Guidelines, it would require an existing storage pocket of at least 2,500 feet before the addition of more than one vehicle (assuming a vehicle length of 25 feet) would not be considered a potentially significant impact. This is based on the 1% threshold set by the City.

4. Ralston Avenue/Notre Dame de Namur University Driveway
5. Ralston Avenue/Chula Vista Drive
6. Ralston Avenue/ Notre Dame Avenue
7. Ralston Avenue/ Alameda de las Pulgas
8. Ralston Avenue/ Cipriani Boulevard
9. Ralston Avenue/ Davis Drive
10. Ralston Avenue/ Ralston Middle School Exit Driveway
11. Ralston Avenue/ Ralston Middle School Entrance Driveway
12. Ralston Avenue/ Tahoe Drive
13. Ralston Avenue/ Belmont Canyon Road
14. Ralston Avenue/ Hallmark Drive

These study intersections are illustrated in **Figure 2**.

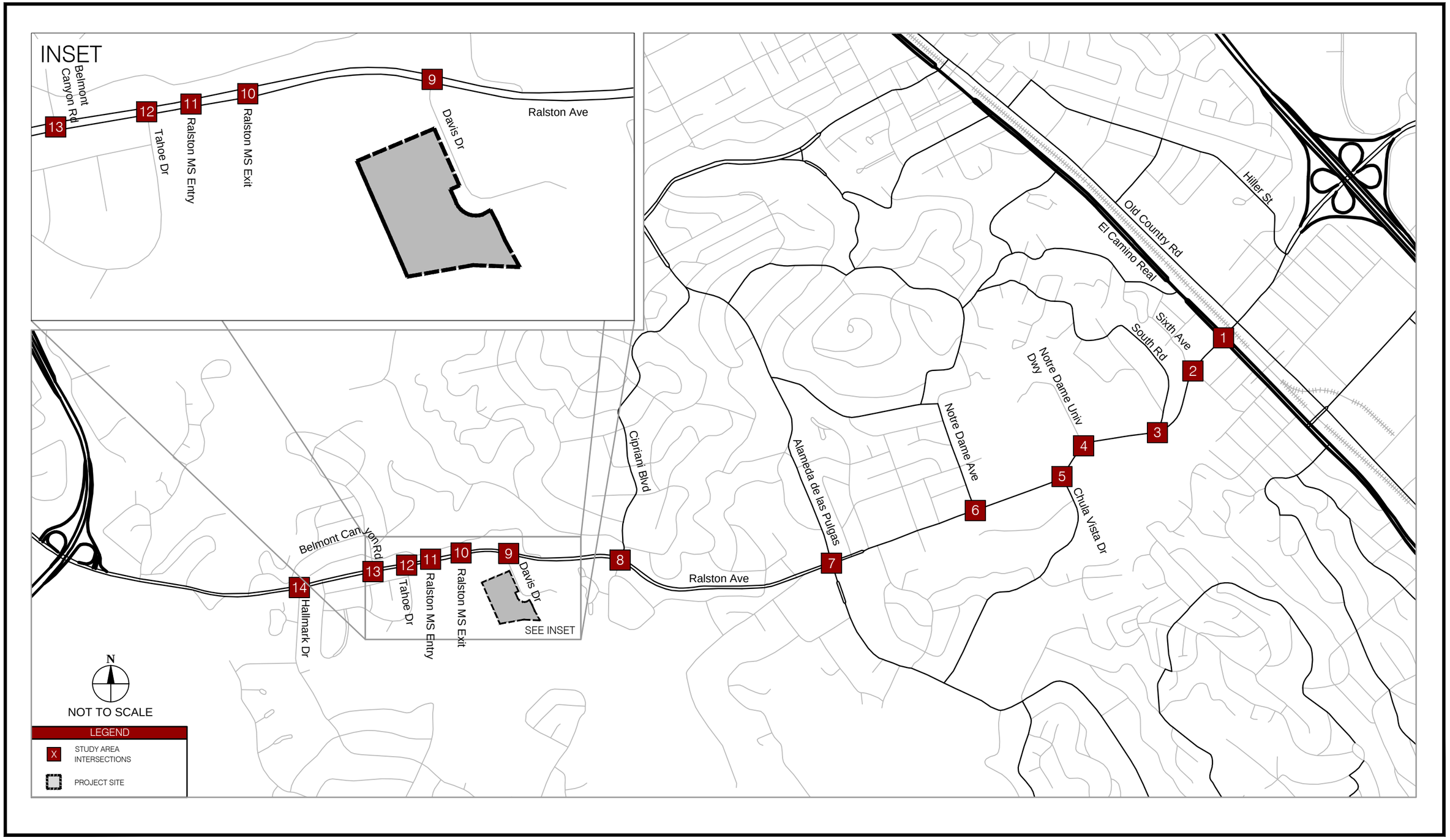

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FIGURE 2
PROJECT STUDY AREA
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EXISTING CONDITIONS

Existing Roadway Network

Below is a description of the principal roadways included in this study:

Alameda de las Pulgas

Alameda de las Pulgas is a two-lane, north-south arterial serving residential areas north and south of Ralston Avenue. South of Ralston Avenue, Alameda del Las Pulgas provides access to Carlmont High School, Tierra Linda Middle School, San Carlos Charter Learning Center and Edison Montessori School. Alameda de las Pulgas has bike lanes south of Carlmont Drive. The posted speed limit on Alameda de las Pulgas is 25 mph north of Ralston Avenue and 30 mph south of Ralston Avenue.

Belmont Canyon Road

Belmont Canyon Road is a two-lane local street serving residential areas north of Ralston Avenue. The posted speed limit is 25 mph.

Chula Vista Drive

Chula Vista Drive is a two-lane major collector serving residential areas south of Ralston Avenue. The posted speed limit is 25 mph.

Cipriani Boulevard

Cipriani Boulevard is a two-lane major collector serving residential areas north and south of Ralston Avenue. The posted speed limit is 25 mph.

Davis Drive

Davis Drive is a two-lane local roadway serving several office buildings south of Ralston Avenue. The roadway has no outlet, but contains two cul-de-sac turnaround points. A sidewalk currently exists along the eastern side of Davis Drive connecting Ralston Avenue to the inner-most cul-de-sac for pedestrian access. There is currently no continuous sidewalk along the western side. The existing cross-section is approximately 40 feet. There are two travel lanes and on-street parking for most of the street's extent; this also allows room for bicyclists who choose to use this local street and share the road with vehicular traffic. The speed limit is 25 mph.

El Camino Real

El Camino Real is a four-lane divided north-south arterial road that runs parallel to US-101. The roadway mostly serves commercial uses within the study area. The Belmont Caltrain station is located at the northeast corner of the El Camino Real and Ralston Avenue intersection. The posted speed limit is 35 mph.

Hallmark Drive

Hallmark Drive is a two-lane, north-south major collector roadway servicing residential areas and Fox Elementary School south of Ralston Avenue. The posted speed limit is 30 mph.

Notre Dame Avenue

Notre Dame Avenue is a two-lane, north-south major collector serving residential areas north of Ralston Avenue. Notre Dame Avenue also provides access to Notre Dame Elementary School. The posted speed limit is 25 mph.

Notre Dame de Namur University Driveway

Notre Dame University Road is a two-lane local street, which provides access to Notre Dame de Namur University. The posted speed limit is 25 mph.

Ralston Avenue

Ralston Avenue is a four-lane, east-west arterial connecting SR-92 in the west to US-101 in the east. Ralston Avenue has a two-way left turn lane (TWLTL) between Alameda de las Pulgas and South Road. The roadway serves residential areas west of Sixth Avenue and commercial areas east of Sixth Avenue. Ralston Middle School is located along the south frontage of Ralston Avenue between Davis Drive and Tahoe Drive. The posted speed limit on Ralston Avenue is 30 mph east of Alameda de las Pulgas and 40 mph to the west.

Sixth Avenue

Sixth Avenue is a two-lane collector street, serving residential areas north of Ralston Avenue and city offices and commercial areas south of Ralston Avenue. The posted speed limit is 25 mph.

South Road

South Road is a two-lane local street, serving residential areas north of Ralston Avenue. The posted speed limit is 25 mph.

Tahoe Drive

Tahoe Drive is a two-lane local street serving residential areas south of Ralston Avenue and is west of Ralston Middle School. The posted speed limit is 25 mph.

Existing Lane Configurations and Traffic Control

Existing intersection lane configurations and traffic controls are illustrated in **Figure 3**. The study intersections are also listed below with existing traffic control:

Signalized Intersections

- #1 – Ralston Avenue and El Camino Real
- #2 – Ralston Avenue and Sixth Avenue
- #7 – Ralston Avenue and Alameda de las Pulgas
- #8 – Ralston Avenue and Cipriani Boulevard
- #9 – Ralston Avenue and Davis Drive
- #13 – Ralston Avenue and Belmont Canyon Road
- #14 – Ralston Avenue and Hallmark Drive

All-Way Stop Controlled (AWSC) Intersections

- #3 – Ralston Avenue and South Road

Two-Way / Side Street Stop Controlled (TWSC / SSSC) Intersections

- #4 – Ralston Avenue and Notre Dame University Road
- #5 – Ralston Avenue and Chula Vista Drive
- #6 – Ralston Ave and Notre Dame Avenue
- #10 – Ralston Avenue and Ralston MS Exit
- #11 – Ralston Avenue and Ralston MS Entrance
- #12 – Ralston Avenue and Tahoe Drive

Existing Peak-Hour Turning Movement Volumes

Weekday intersection turning movement volumes for the 14 existing study intersections, not including the Project driveways, were collected in February 2014. Volumes were collected during the AM (7-9 AM) and PM (4-6 PM) peak periods of adjacent street traffic and during the analysis' defined Midday peak (2-4 PM) during the weekday when local schools were in session. Intersection volume data sheets for all traffic counts are provided in the **Appendix**. The existing peak-hour turning movement volumes are shown in **Figure 4**. Data was collected during good weather conditions and no incidents were recorded that may result in discrepancies from a "typical" day of travel along Ralston Avenue. Typically, the AM, Midday, and PM peak hour, which are the single hours in the peak periods where traffic volumes entering and exiting an intersection are the highest, were found to be from 7:30-8:30 AM, 2:30-3:30 PM, and 5:00-6:00 PM for the study intersections, respectively[5].

[5] Peak hours were different for some intersections. For instance, Intersection #1: Ralston Avenue and El Camino Real had an AM peak hour of 8:00-9:00 AM and Intersection #12: Ralston Avenue and Tahoe Drive had a Midday peak hour from 3:00-4:00 PM. The hours for which the intersection contained the highest vehicular volumes for the period were used for the analysis.

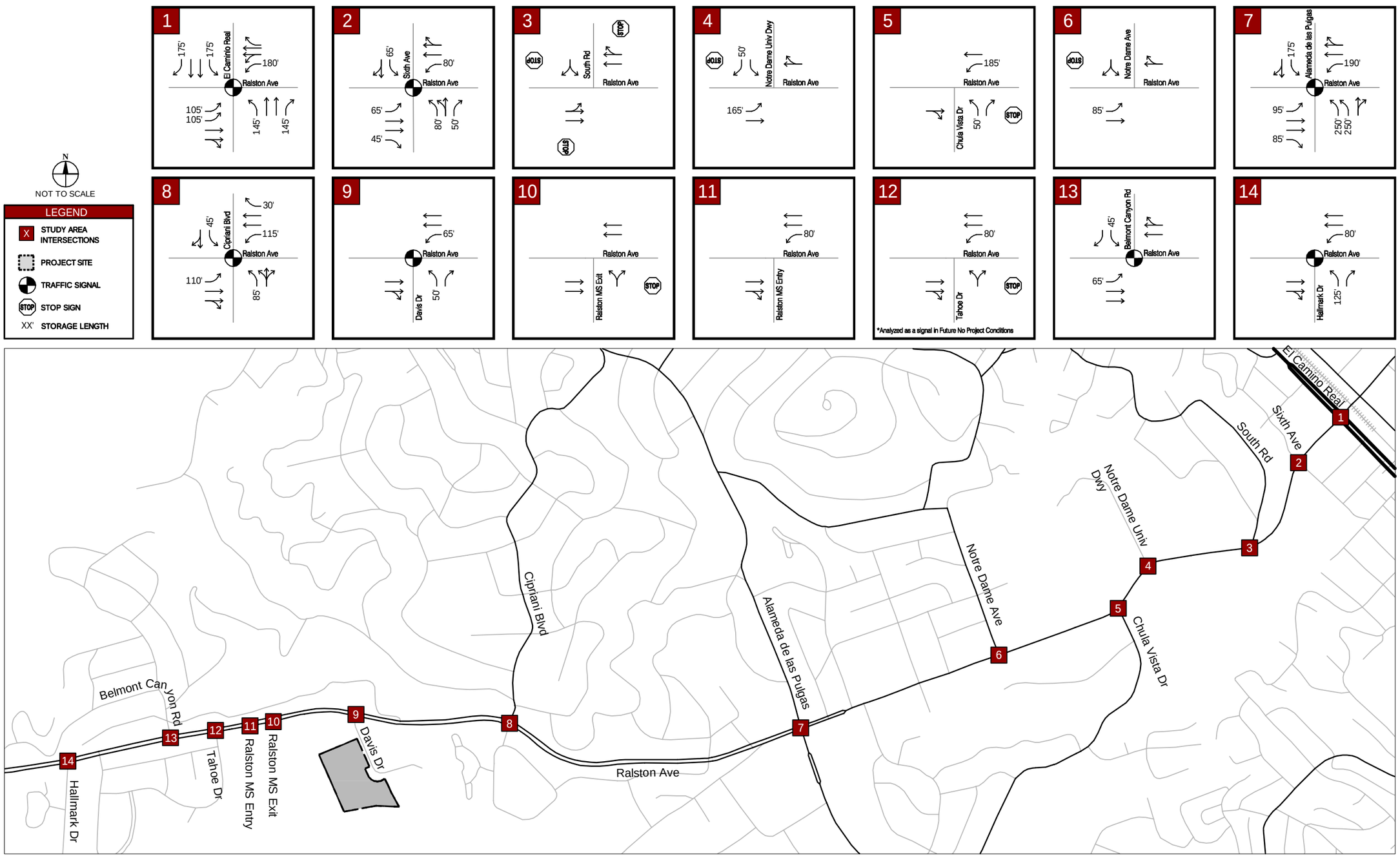

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FIGURE 3

EXISTING (2014) - LANE GEOMETRY AND TRAFFIC CONTROL

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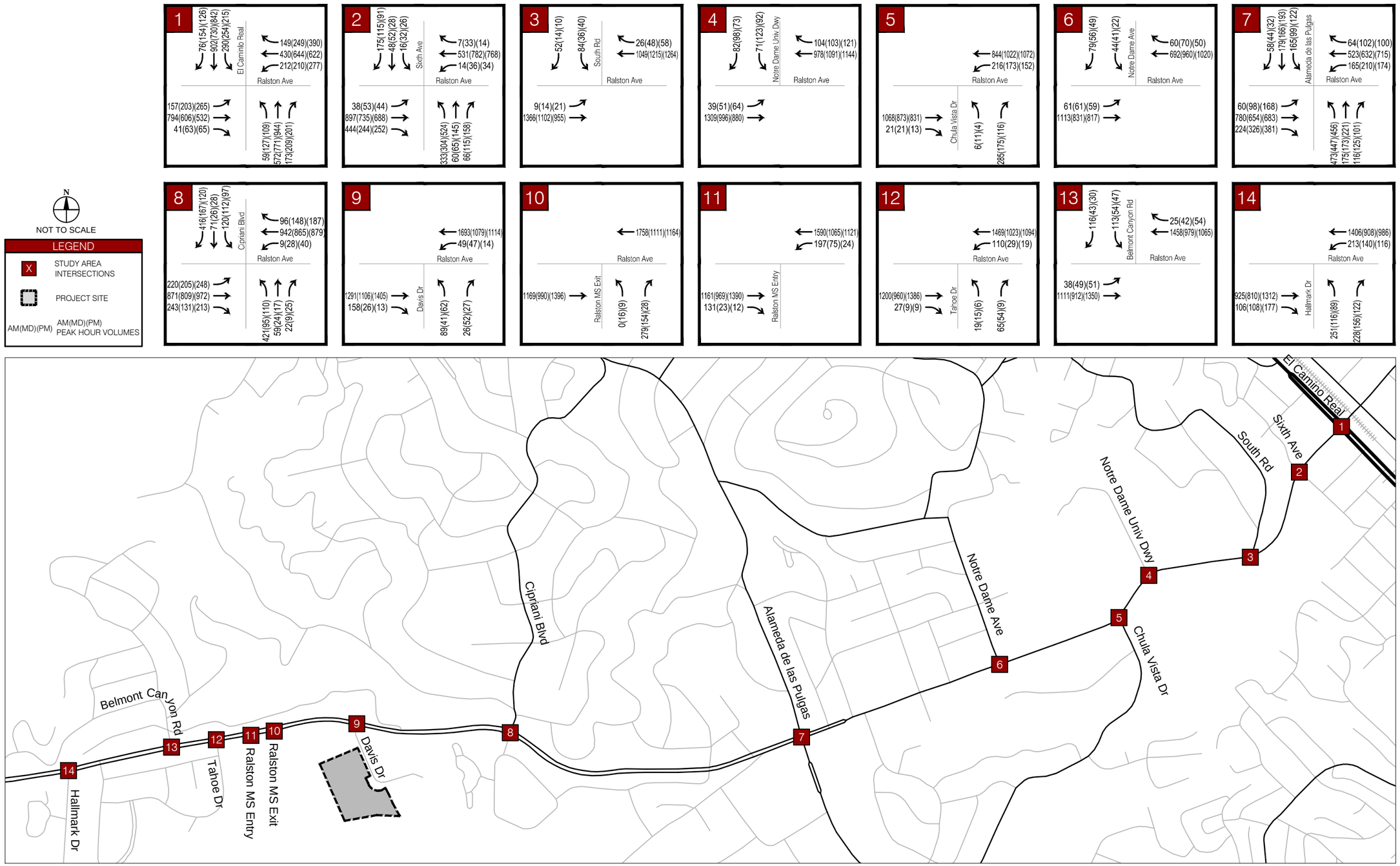

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FIGURE 4

EXISTING (2014) - PEAK HOUR TURNING MOVEMENT VOLUMES

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Five-day 24-hour tube counts were collected in March 2014 on Ralston Avenue east and west of Ralston Middle School. The tube count data is provided in the **Appendix**.

Existing Transit Facilities

Caltrain provides transit services between San Jose and San Francisco. In Belmont, the Belmont Caltrain station is located at the intersection of El Camino Real and Ralston Avenue. During the AM peak, northbound trains to the San Francisco Caltrain Station include the 211 and 221 limited-stop trains and southbound trains to Tamien Station in San Jose include the 208 and 218 limited-stop trains. During the PM peak, northbound trains include the 263 and 273 limited-stop trains and the PM peak southbound trains include the 258, 264, and 274 limited-stop trains.

SamTrans provides transit services within Belmont and San Mateo County. Within the vicinity of the Project, there are five transit lines that operate along Ralston Avenue. The five routes are described below:

- Route 62 operates from Hillsdale Caltrain Station to Carlmont Village Shopping Center. The route runs along Ralston Avenue, Cipriani Boulevard, Notre Dame Avenue, Alameda de las Pulgas and El Camino Real within the study area. The route operates weekdays from 7:11 AM to 8:40 AM and 2:10 PM to 4:11 PM.

- Route 67 operates from Ralston Middle School to Bridge Parkway and Bowsprit Drive. The route runs along Ralston Avenue, Alameda de las Pulgas, and Chula Vista Drive within the study area. The route operates only on Belmont-Redwood Shores Elementary School District school days from 7:03 AM to 8:10 AM on Mondays through Fridays, 12:36 PM to 4:07 PM on Wednesdays, and 3:09 PM to 4:07 PM on Mondays, Tuesdays, Thursdays and Fridays.

- Route 68 operates from Ralston Middle School to Wessex Way and Hiller Street. The route runs along Ralston Avenue, Cipriani Boulevard, Alameda de las Pulgas, and Notre Dame Avenue within the study area. The route operates only on Belmont-Redwood Shores Elementary School District school days from 7:39 AM to 8:10 AM on Mondays through Fridays, 12:36 PM to 1:08 PM on Wednesdays and 3:09 PM to 3:43 PM on Mondays through Fridays.

- Route 260 operates from San Carlos Caltrain station to College of San Mateo. The route runs along Ralston Avenue within the study area. The route operates on weekdays from 5:59 AM to 7:14 PM on a frequency of 30- to 35- minute headways.

- Route 261 operates from San Carlos Caltrain station to Continental and Lyall Way in Belmont. The route runs along Ralston Avenue within the study area. The

route operates on weekdays from 8:28 AM to 7:31 PM on a frequency of 60-minute headways.

Existing Bicycle and Pedestrian Facilities

There are multiple existing bikeway facilities in Belmont. Class I bicycle facilities are bike paths or trails, Class II bicycle facilities are defined as bike lanes, and Class III bicycle facilities are bike routes.

Class I bike paths located within the Project study area include Lake Road Trail and the Ralston School Trail. The Lake Road Trail is located south of Ralston Avenue and runs east-west. The trail begins at Hallmark Drive and terminates at Lyall Way. The Ralston School Trail begins south of Ralston Middle School and continues south until it connects with the Lake Road Trail.

Class II bike lanes are located within the Project study area on Ralston Avenue and on Alameda de las Pulgas. On Ralston Avenue, bike lanes are located on the north side of roadway between Pullman Avenue and Cipriani Boulevard and on both sides of the roadway between Maywood Drive and South Road. On Alameda de las Pulgas bike lanes are located on both sides of the roadway between Garden Court and Cranfield Avenue.

Class III bike routes are located within the project study area on Ralston Avenue and Alameda de las Pulgas. No Class II facilities exist with the project study area.

Sidewalks and crosswalks are mostly provided throughout the study area in Belmont to allow for pedestrians to access nearby transit stops, residential uses, and commercial uses. There are no sidewalks along the north side of Ralston Avenue between Hallmark Drive and Davis Drive.

Existing Intersection Level of Service

Traffic operations were evaluated at the study intersections under existing traffic conditions. Results of the analysis are presented in **Table 4**. As shown in **Table 4**, the following study intersections do not function within acceptable standards under the existing analysis scenario:

- #1 – Ralston Avenue and El Camino Real - Signal
  - Midday and PM Peak Hours
- #3 – Ralston Avenue and South Road - AWSC
  - AM, Midday, and PM Peak Hours
- #4 – Ralston Avenue and Notre Dame de Namur University Driveway - SSSC
  - AM, Midday, and PM Peak Hours
- #5 – Ralston Avenue and Chula Vista Drive - SSSC

  - AM and Midday Peak Hours
- #6 – Ralston Avenue and Notre Dame Avenue - SSSC
  - AM and Midday Peak Hours
- #8 – Ralston Avenue and Cipriani Boulevard - Signal
  - AM Peak Hour
- #10 – Ralston Avenue and Ralston MS Exit - SSSC
  - AM and Midday Peak Hours
- #12 – Ralston Avenue and Tahoe Drive - SSSC
  - Midday and PM Peak Hours

These are preexisting deficiencies and are not a result of the Project. Analysis sheets are provided in the **Appendix**.

Table 4 - Existing (2014) Intersection Level of Service Summary

Int #	Intersection	Jurisdiction	Control	Existing								
				AM Peak			Mid-Day Peak			PM Peak		
				LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c
1	**Ralston Ave and El Camino Real**	City	Signal	D	49.9	0.93	**E**	**60.9**	**0.88**	**E**	**56.2**	**0.93**
2	Ralston Ave and Sixth Ave	City	Signal	C	27.8	0.66	C	27.8	0.63	C	29.3	0.62
3	**Ralston Ave and South Rd**	City	AWSC	**F**	**212.0**	-	**F**	**139.4**	-	**F**	**127.3**	-
4	**Ralston Ave and Notre Dame de Namur University Dwy**	City	SSSC	A	9.9	-	**E**	**37.7**	-	B	10.4	-
	Worst Approach			***F***	***109.6***	-	***F***	***307.0***	-	***F***	***105.3***	-
5	**Ralston Ave and Chula Vista Dr**	City	SSSC	**F**	**52.3**	-	A	4.3	-	A	2.2	-
	Worst Approach			***F***	***370.2***	-	***E***	***38.4***	-	*C*	*23.4*	-
6	**Ralston Ave and Notre Dame Ave**	City	SSSC	A	3.1	-	A	2.5	-	A	1.7	-
	Worst Approach			***E***	***40.4***	-	***E***	***38.6***	-	*D*	*32.9*	-
7	Ralston Ave and Alameda de Las Pulgas	City	Signal	D	44.1	0.83	D	46.0	0.83	D	41.8	0.80
8	**Ralston Ave and Cipriani Blvd**	City	Signal	**E**	**74.2**	1.00	C	27.5	0.67	C	27.6	0.72
9	Ralston Ave and Davis Dr	City	Signal	B	13.4	0.72	A	9.2	0.54	A	7.3	0.62
10	**Ralston Ave and Ralston MS Exit**	City	SSSC	A	5.0	-	A	3.8	-	A	0.5	-
	Worst Approach			***E***	***40.9***	-	***E***	***35.5***	-	*C*	*23.1*	-
11	Ralston Ave and Ralston MS Entrance	City	SSSC	A	1.1	-	A	0.4	-	A	0.1	-
	Worst Approach			*A*	*2.1*	-	*A*	*0.7*	-	*A*	*0.3*	-
12	**Ralston Ave and Tahoe Dr**	City	SSSC	A	1.5	-	A	2.8	-	A	0.5	-
	Worst Approach			*D*	*26.0*	-	***E***	***49.0***	-	***F***	***51.3***	-
13	Ralston Ave and Belmont Canyon Rd	City	Signal	B	14.4	0.72	A	8.5	0.51	A	7.1	0.55
14	Ralston Ave and Hallmark Dr	City	Signal	C	23.8	0.79	B	15.1	0.58	B	15.2	0.69

Notes: Intersections that are operating below (worse than) LOS D are shown in **BOLD**.

Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

It should be noted that calculations of delay at saturated conditions (i.e., LOS F) are less reliable than at LOS E or better. Therefore, delay in excess of 80 seconds is reported in the table to allow a relative comparison of without and with project conditions and should not be interpreted as an exact representation of actual delay.

Source: Kimley-Horn and Associates, Inc., 2014

Existing Signal Warrants Analysis

Signal warrant calculations were conducted at the non-signalized study intersections as per the City's Guidelines using Signal Warrant #3: Peak Hour. The Peak Hour Volume Warrant (Warrant #3) is satisfied when traffic volumes on the major and minor approaches exceed thresholds for only one hour of the day and is generally the first warrant to be satisfied. Other warrant criteria exists but are less conservative than the peak hour evaluation, therefore the peak hour warrant was used. It should be noted that the AM peak hour presents the worst case (or most likely case) for which the signal warrant would be met as side street volumes are typically higher during this peak in the study area. To present a worst case, only the AM peak hour results are displayed in this report. The PM peak hour results are shown in the Appendix. Aside from those shown in the AM peak, no additional intersection locations will trigger a signal warrant. As shown in the signal warrant tables within the **Appendix**, all of the unsignalized intersections meet the peak-hour warrant under existing conditions (i.e. without the Project) in the AM peak hour except Intersection #12: Ralston Avenue / Tahoe Drive. Below in **Table 5** is the list of the signal warranted intersection's v/c ratios for the worst approach.

Table 5 - Existing (2014) Intersection v/c Ratios

Int. #	Intersection Description	Existing AM
3	Ralston Ave / South Rd	1.11
4	Ralston Ave / Notre Dame Univ.	0.79
5	Ralston Ave / Chula Vista Dr.	0.65
6	Ralston Ave / Notre Dame Ave.	0.64
10	Ralston Ave / Ralston MS Exit	0.55
11	Ralston Ave / Ralston MS Entrance	0.51

Notes: Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

Source: Kimley-Horn and Associates, Inc., 2014

Existing Traffic Conditions within Vicinity of Project Site

Daily Traffic

Tube counts were taken in March 2014 on Ralston Avenue between Cipriani Drive and Davis Drive; this is adjacent to both the Ralston Middle School, which is west of Davis Drive, and the Project, which is located on Davis Drive. The vehicle classifications contain a strong majority (99%) of passenger cars with a small minority (1%) of in-town delivery trucks, buses, and large trucks. The majority of speeds along Ralston Avenue at this segment fluctuate between 36 and 45 mph for both eastbound and westbound traffic. During the AM peak hour, speeds are typically lower in the westbound direction with traffic destined for local schools. During the PM peak hour, speeds are typically lower in the eastbound direction with traffic destined for the local residential neighborhoods. The CSUS Project proposes to include an electronic speed feedback sign for eastbound traffic on Ralston Avenue between the intersections of the RMS exit driveway and Davis Drive. This element is proposed as part of the project to help reduce vehicular speeds on Ralston Avenue.

Collision History

According to data reviewed by W-Trans in the Ralston Corridor Study (RCS), from January 1, 2010 to May 27, 2013, there were a reported 174 crashes at the 14 study intersections, with 33% of the crashes involving injuries. Ralston Avenue and Alameda de Las Pulgas has the largest number of incidents with a total of 60 crashes involving 20 injuries. Following that, the four next worst intersections along Ralston Avenue were El Camino Real (with one crash fatality), Notre Dame Avenue, 6th Avenue, and South Road. Ralston Avenue and Davis Drive had 13 crashes reported with 7 injuries during this 41 month period. The most common reason for crashes cited at Davis Drive was speeding; other causes were turning movement crashes, unsafe parking/backing, and causes other than driver fault.

The collision rate per million vehicle miles was calculated for the roadway segments on Ralston Avenue adjacent to Davis Drive based on the total number of collisions studied over three years (April 1, 2010 to March 31, 2013) and ADT counts. The calculated collision rate was compared to the statewide average rate for a four-lane urban divided roadway listed in the 2010 Collision Data on California State Highways. For Davis Drive the collision rate was found to be 0.99 collisions per million vehicle miles, which is less than the statewide average of 1.55. In addition, the specific collision information was reviewed and it was determined that only 2-3 of the collisions during the 3-year period could be identified for eastbound traffic immediately west of the intersection. Consequently, no changes (e.g., right turn lane) are warranted or recommended relative to the east bound right turn at Davis Drive.

Field Observations

Field observations were conducted during both the drop-off and pickup periods in the Project site vicinity in April and May 2014. There were a few queuing issues and trip behaviors that should be noted along Ralston Avenue, particularly vehicles accessing Ralston Middle School, which is adjacent to the Project site.During the morning drop-off period, the queue from vehicles making a westbound left (WBL) off of Ralston Avenue into the Ralston Middle School entrance would exceed the turn pocket and spill into the westbound through (WBT) lane. To avoid this overcapacity queue, through vehicles utilized the right outside lane. The maximum queue for this movement was observed at 8:09 AM and extended almost as far east as the Davis Drive intersection. The traffic related to Ralston Middle School dissipates quickly and concludes by approximately 8:20AM, consistent with the Ralston Middle School bell schedule. As noted, many drivers not participating in the drop-off activities use the right-most lane to try to bypass the traffic related to Ralston Middle School, but this often causes congestion in that lane as well. Immediately west of the Davis Drive intersection, there is an electronic speed feedback sign in an effort to lower travel speeds on Ralston Avenue.

West of Ralston Middle School, traffic continues to be heavy for the westbound traffic during the morning peak period, with drivers headed to the SR-92 interchange and points beyond. In addition, vehicular traffic associated with Fox Elementary School (Fox) also impacts the areas along Hallmark Drive. The traffic conditions related to Fox were observed to be immediately following the Ralston Middle School peak traffic condition, which is consistent with Fox's bell schedule starting at 8:25 am.

In addition, many parents bypass the allocated Ralston Middle School drop-off area, and instead utilize both Davis Drive and Tahoe Drive to drop-off their children. Parents using Davis Drive would drop their student off on the western curb of Davis Drive and then either make a 3-point turn or a U-turn at the southern end of Davis Drive to get back onto Ralston Avenue. Most parents using Tahoe Drive either made an illegal U-turn on Tahoe Drive after the median south of Ralston Avenue or took Yosemite Drive back to Ralston Avenue to egress.

During the PM pick up from the Ralston Middle School parking lot, queues were observed extending onto Ralston Avenue by one vehicle. Parents arrived as early as 1:54 PM to park and wait to pick-up students and the majority of pickup activities ceased by 3:29 PM. Davis Drive and Tahoe Drive were also utilized for pickups during this timeframe. Along Davis Drive, school-related traffic would peak between 2:45 PM and 3:20 PM, often causing congestion along Davis Drive, in the form of cars parking and making unsafe U-turns too close to the Ralston Avenue / Davis Drive intersection.

Students were seen walking to and from school during both peak hours. They utilized the southern Ralston Avenue sidewalk and the Davis Drive pedestrian crossings. Students who were picked up on Davis Drive would walk down the southern Ralston Avenue sidewalk to Davis Drive and enter the vehicle. For vehicles parked along the west side of Davis Drive, students would walk in the landscaped area or along the street curb. If the vehicle was parked on the east side of Davis Drive, students would utilize the southern crosswalk to cross Davis Drive.

Ralston Middle School is currently undergoing changes to its enrollment and a plan has been completed to more efficiently operate the on-site drop-off and pickup activities. If this change is successful, the use of this informal satellite location for drop-off and pickup may become unnecessary. The City will monitor the operations on Davis Drive to determine if any additional improvements are needed.

Program for Arterial Signal Synchronization (PASS) Observations

The observations for the Ralston Avenue and Davis Drive intersections were included within the Program for Arterial Signal Synchronization (PASS) study. There were high numbers of pedestrians observed on the south crosswalk during the citywide AM and PM peak hours; there were a total of 19 pedestrians observed during the AM peak and 97 during the PM peak. Six (6) and 18 pedestrians were observed crossing the west crosswalk during the AM and PM peak hours, respectively. It is assumed that most of these pedestrians are a product of the nearby Ralston Middle School. There were only 2 bicyclists observed in each of the North and Eastbound directions in the AM peak hour and 5 in each direction during the PM peak indicating lesser bicycling activity at the intersection. The PASS study also made similar observations concerning the AM peak in that westbound volumes were particularly heavy due to vehicles waiting for a sufficient gap in oncoming traffic to make a left turn into Ralston Middle School. As a result, instead of attempting to make a left turn at the school driveway, vehicles were observed driving farther west on Ralston Avenue to Hallmark Drive, at which point they would make U-turns and then turn right into the school.

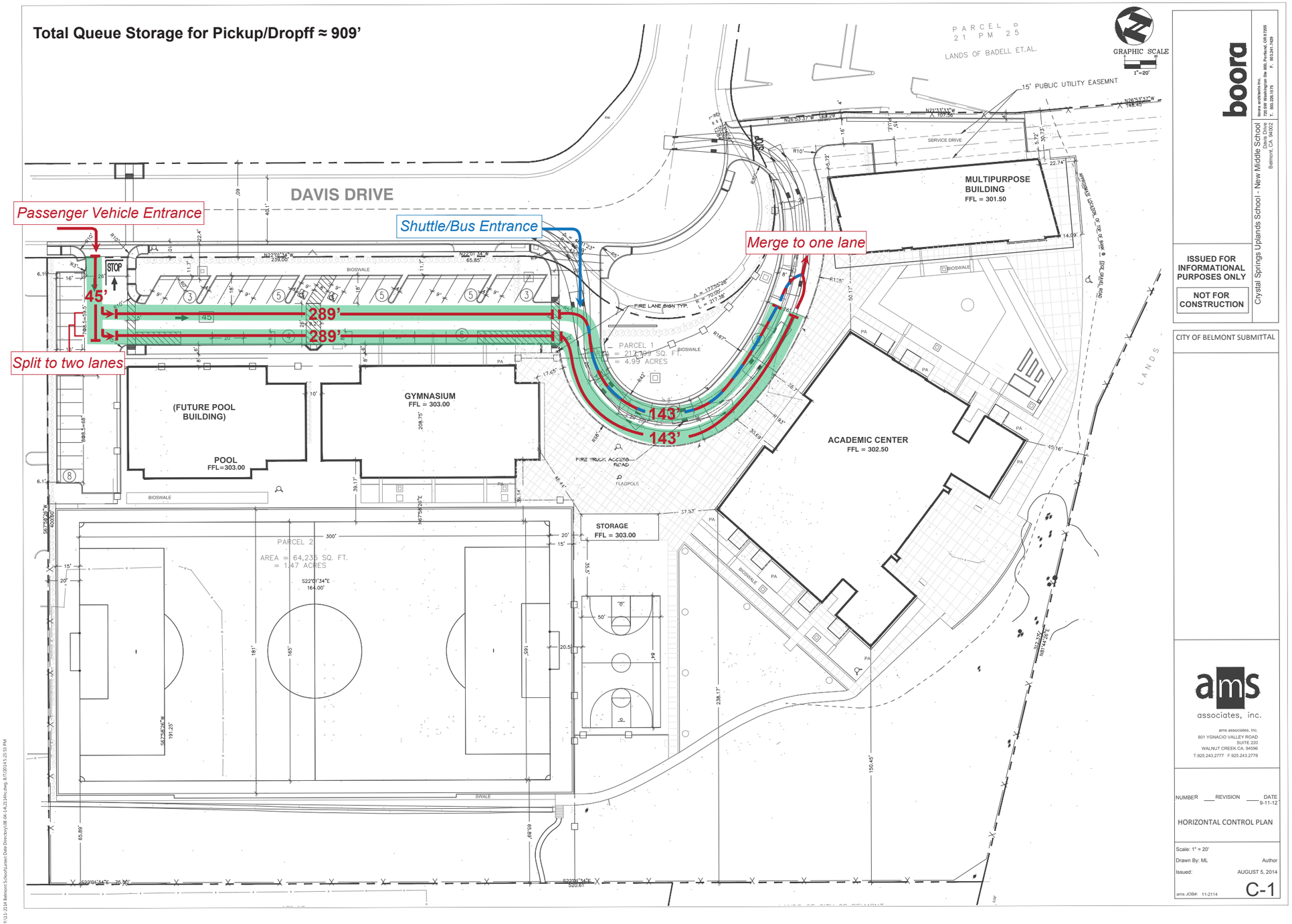
Proposed Site Use

The Project is to be located on 6-8 and 10 Davis Drive. The site is currently occupied by two vacant buildings, which are to be demolished and replaced with new school buildings. The site was previously used as office and warehouse space.

Driving south along Davis Drive from Ralston Avenue, the Project site sits on the right/western side of the road. The northern portion of the site is proposed to contain a parking lot (which also serves as the passenger vehicle entrance point for the student drop-off/pickup arc) with a stop sign controlled access point onto Davis Drive for the parking lot egress. Behind the parking lot sits the future pool building and gymnasium while a playing field and outdoor play courts are farther to the west and internal to the site.

Farther south along Davis Drive is a second driveway leading to the drop-off/pickup arc, restricted to busses and shuttle access only. The drop-off/pickup vehicular exit point is farther south and is stop sign controlled. The drop-off/pickup arc lies adjacent to the Academic Center, which contains classrooms and school administration offices. In addition, there is a science court and dining terrace in the building's vicinity. The service court is at the southernmost point of the site and vehicular access for this use is via a shared access point with the student pick-up and drop-off area exit.The Project site plan is presented in **Figure 5.**

NOT TO SCALE



Source:
AMS Assoicates, Inc
boora architects, Inc

Kimley»Horn

FIGURE 5
PROJECT SITE PLAN

Project Trip Generation

Trip generation was calculated based on discussions with the current CSUS staff members and representatives, and through discussions with City staff. **Table 6** presents the trip generation for the Project.

School Day

In order to avoid an overlap with the drop-off and pick-up for Ralston Middle School (RMS), classes will begin at 7:45 AM, 35 minutes before the start time for RMS (8:20 AM). CSUS will dismiss at 3:20 PM, 17 minutes after RMS (3:03 PM). Both drop-off and pick-up have been designed to be self-contained on the Campus in order to minimize spillover onto Davis Drive.

The Project will generate new trips with up to 240 students and 43 faculty/staff members. Sixty-eight students would use van shuttles that would transport 9 students per shuttle. Buses would transport 32 students (with two buses at 16 students per bus). Of the remaining 140 students, approximately half are conservatively assumed to be individual trips with one student per vehicle; carpooling vehicles are assumed as two students per vehicle.

For faculty, it was assumed that approximately 27 of the faculty/staff members would arrive prior to the start of school (i.e., before 7:20 AM) and the AM peak period. Thirteen faculty/staff members would arrive during the AM Peak period and three faculty would arrive throughout the rest of the day. It was assumed that all faculty members would leave during the PM Peak period.

Athletic Events

Trip generation for athletic events has also been calculated as part of the school's typical day. Middle school sports include activities such as flag football, softball, soccer, basketball, volleyball, baseball, cross-country, and track and field. Some games/meets are held at dedicated facilities elsewhere (i.e. cross-country venues, baseball fields, tracks). Home games hosted at the middle school campus will start shortly after the formal school day ends and will usually finish by 6pm. The latest time a middle school game will end is 7:30pm.

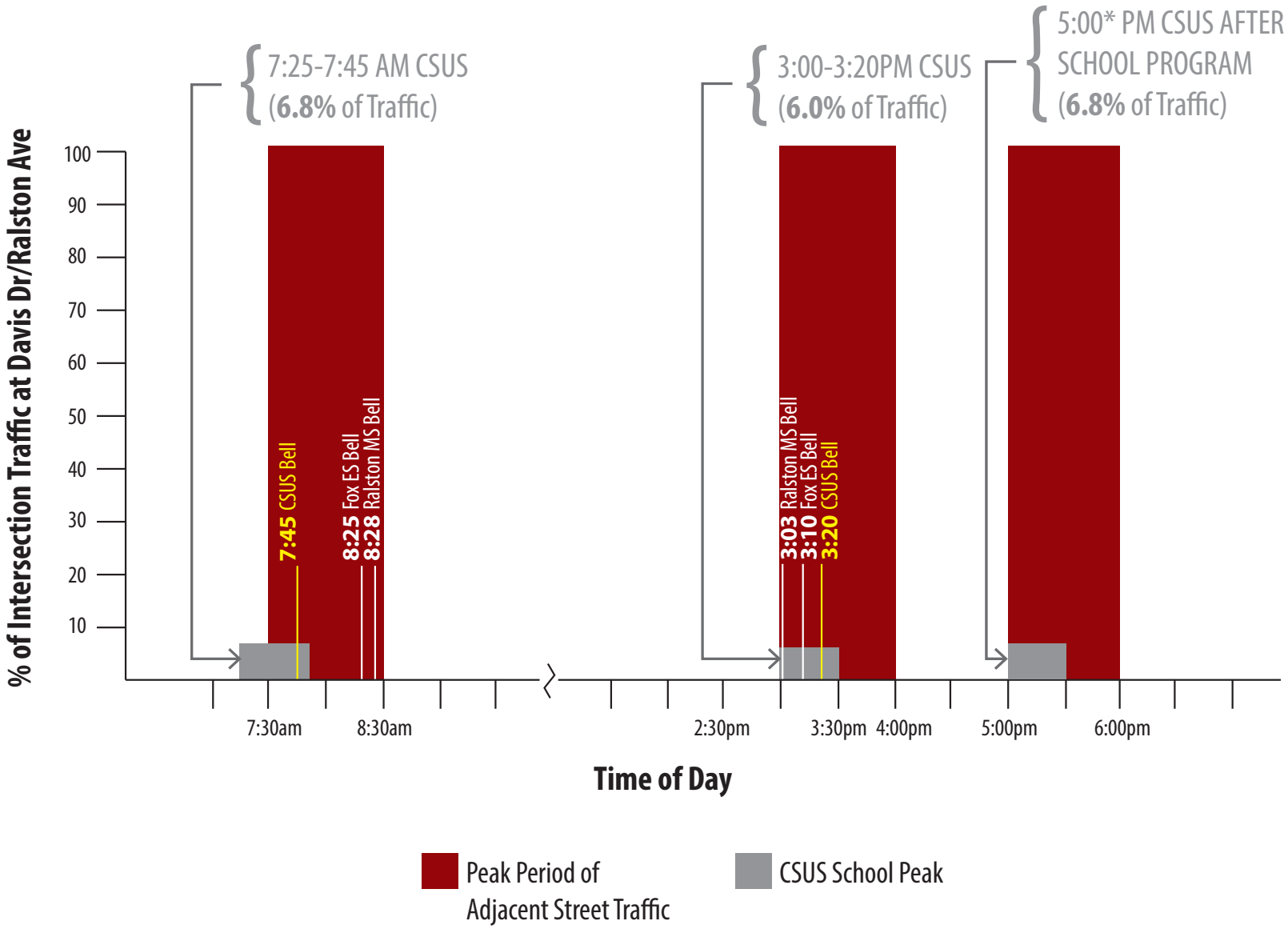
Attendance at CSUS middle school athletic events is usually between 10-25 spectators, so for purposes of the TIA analysis, 25 spectators per game were conservatively assumed. Opposing teams generally travel in vans, buses or parent carpools. It is estimated that the middle school will host an average of three home games per week (approximately 110 total per academic year) clustered during each of the four sports seasons.

In addition, the CSUS upper school swim team will utilize the middle school swim facilities for practices. Students and coaches will travel to the Belmont campus in a bus or shuttles. The bus/shuttle is anticipated to arrive during the school midday peak, wait on-site, and depart after practice during the analyzed PM peak.

Figure 6 displays the CSUS start and end times in relation to the adjacent street traffic peak and the start and end times of adjacent schools. The analysis assumes that the CSUS drop-off will occur during the adjacent street traffic peaks, which is a conservative approach. The analysis of CSUS traffic occurring at the same time as the adjacent street traffic is conservative for two reasons: 1) it intensifies the analysis given that adjacent schools are in operation at these times, and 2) increases the overall vehicular volume using the intersection.

As noted in **Table 6**, the Project will generate approximately 243 new AM peak period trips, 149 new Midday peak period trips and 186 new PM peak period trips.

For the two afternoon periods, the assumption is that there will be some students arriving and leaving school each day using a different mode of travel, thus creating some flexibility between the modes. So while most students will likely arrive and depart school in the same manner, some are likely to change their mode of travel in the afternoon due to after school activities, etc. For example, a student may ride the bus in the morning but take a carpool in the afternoon, whereas another student may be dropped-off at school by their parent in the morning but travel via bus or carpool in the afternoon.



*Student pick-up is spaced throughout the afternoon (3:20 - 5:00pm) to accomodate after school activities. The CSUS traffic during the 3:00pm block represents the ingress after school activity trips, plus the mid-day school dismissal trips. The CSUS traffic during the 5:00pm block represents the after school activity pick-up trips.

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MM-097609002 April 2015

FIGURE 6
PROPOSED DAILY SCHEDULE VS. PEAK PERIOD OF ADJACENT STREET TRAFFIC & USES AT DAVIS DR
CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

Table 6 - Project Trip Generation

Time Period	Trip Type	Trip Rate In	Trip Rate Out	Trip Rate Total	Trips In	Trips Out	Trips Total
AM Peak	Shuttle (68 Students)	.111	.111	.222	8	8	16
	Bus (32 Students)[A]	.0625	.0625	.125	2	2	4
	Carpool (70 Students)	.5	.5	1	35	35	70
	Single (70 Students)	1	1	2	70	70	140
	Faculty (43 Staff)[C]	1	0	1	13	0	13
	Net New Vehicle Trips				**128**	**115**	**243**
Midday Peak[B]	Shuttle (68 Students)	.0556	.0555	.111	4	4	8
	Bus (32 Students)[A]	.0625	.0625	.125	2	2	4
	Carpool (70 Students)	.25	.25	.5	18	18	36
	Single (70 Students)	.5	.5	1	35	35	70
	Faculty (43 Staff)[C]	0	0	0	0	0	0
	Upper School Swim Practice (1 Shuttle)	1	0	1	1	0	1
	Athletic Event (2 Shuttles)	1	0	1	2	0	2
	Athletic Event (25 Spectators)	1	0	1	25	0	25
	Athletic Event (3 Event Staff)	1	0	1	3	0	3
	Net New Vehicle Trips				**89**	**59**	**149**
PM Peak[B]	Shuttle (68 Students)	.0555	.0556	.111	4	4	8
	Bus (32 Students)[A]	0	0	0	0	0	0
	Carpool (70 Students)	.25	.25	.5	17	17	34
	Single (70 Students)	.5	.5	1	35	35	70
	Faculty (43 Staff)[C]	0	1	1	0	43	43
	Upper School Swim Practice (1 Shuttle)	0	1	1	0	1	1
	Athletic Event (2 Shuttles)	0	1	1	0	2	2
	Athletic Event (25 Spectators)	0	1	1	0	25	25
	Athletic Event (3 Event Staff)[D]	0	1	1	0	3	3
	Net New Vehicle Trips				**56**	**130**	**186**

[A] There are two buses each anticipated to carry 16 students for a total of 32 students traveling via bus. It is not necessarily assumed that all bused students depart immediately after school. Typical daily activities will fluctuate, but the worst case is still presented in that all single and carpool trips are conservatively included in the trip generation for all peaks. In addition, the number of student passengers does not change the generation or frequency of a bus trip.

[B] Approximately 50% of student generated trips would occur in the Midday peak period following school and the remainder would occur during the PM Peak period. It is important to note that the Midday peak period analyzed here does not correlate to the typical Midday peak of adjacent street traffic. Instead it correlates with the various local school dismissal times and thus is the worst case "midday" scenario.

[C] Approximately 27 faculty members are assumed to arrive prior to the start of school, before the AM Peak period, 13 faculty members arriving during the AM Peak and the remaining 3 faculty member will arrive throughout the rest of the day. All faculty members are assumed to leave during the PM peak period.

[D] Athletic event staff consists of miscellaneous members of the athletic event that may generate trips beyond the spectators, competing team, and attendees already on-site, such as referees or score keepers.

Trip rates were obtained from information from CSUS staff on the anticipated mode choices of students along with knowledge of after-school activities.

Source: Kimley-Horn and Associates, Inc., 2014

CSUS Special Activities & Events

The school is anticipated to have isolated special activities and programs throughout the course of the school year which may generate trips higher than those indicated during the typical daily school AM, Midday, or PM peak hours shown in the study trip generation. The largest events are listed below and a full list can be seen in the **Appendix**.

- Curriculum Night – Typically held one evening each Fall (usually early September) where parents attend their children's classes to hear about their curriculum. Parents arrive periodically between 5:30 and 6:30 PM, spreading out traffic during the evening commute.
- Admission Open House Events – A few events are hosted to show prospective new students and families the middle school campus. They are traditionally held on Saturdays and Sundays, thereby avoiding conflict with local weekday traffic.
- Fine Arts – There are a total of four theatrical, music, and fine arts events throughout the year. CSUS estimates up to 250 attendees for these evening performances, which generally start at 7:00 PM and end by 10:00 PM.
- Upper School Athletic Events – CSUS will host a few upper school sporting events (e.g., basketball games, volleyball games) at the middle school gymnasium, approximately ten times per year. These games generally start at 5:00 PM and finish by 9:00 PM with attendance estimated at 30-40 people. In addition, the school would potentially hold three to four swim meets per year. The meets would take place after school or on weekends. Estimated maximum attendance for the largest meet would be 100 swimmers and coaches, and 25 spectators. The teams would arrive via buses and vans and the spectators would likely drive individually. Swimmers and coaches would start arriving at 3:00 PM, with spectators arriving by 4pm for weekday meets. The events would be over between 6:00 and 6:30 PM. Weekend meets would be held during the day on Saturdays.
- Graduation – A graduation event for 8th graders is held in early to mid-June from 7:00-9:00 PM. It is estimated there will be 250 attendees for this event.

Through an established parking agreement, all of the above events will have all parking accommodated either on-site or at a neighboring Davis Drive site for overflow parking. While these special events may cause higher trip generation numbers in some isolated cases, they are infrequent, not representative of typical school days, and all efforts by CSUS planning staff are taken to minimize traffic impacts both on and off-site for such events. If the parking agreement is terminated for any reason, CSUS shall provide all parking for special events onsite, or shall secure alternative parking arrangements to the satisfaction of the Director of Community Development before holding any special events requiring additional parking.

Project Trip Distribution and Assignment

For student generated trips, it was assumed that students would be transported to and from school via three different methods: (1) Bus, (2) Shuttle, or (3) Passenger car. For buses, the commute trips would be to and from remote pickup spots along the Peninsula, such as Menlo Park and Palo Alto, and one bus would access the Belmont/Hillsdale Caltrain. A shuttle would operate between the proposed site and the current CSUS campus located on Uplands Drive in Hillsborough to the north, and another between the Project site and another offsite Park-n-Ride facility. For passenger car trips, carpooling or individual student trips would occur from various locations throughout the area. This distribution was based on current student residency information and the likely travel routes taken from these residences. The trip distribution was reviewed with the City and accepted on April 30, 2014, prior to use in this traffic study. **Figure 7** presents the trip distribution assumed for this analysis, specific to the passenger vehicle trips. Point-to-point shuttle and bus trips were distributed separately and using the assumed origin/destination of the multi-passenger vehicles.

Based on the trip distribution, new vehicle trips generated by the Project were assigned to the street network as shown in **Figure 8**. **Figure 8** presents the total trips generated by the Project.

Existing Plus Project Level of Service

Traffic operations were evaluated at the study intersections under existing conditions plus Project, as seen on **Figure 9**. Results of the analysis are presented in **Table 7**. Locations operating unacceptably are bolded and those exceeding the City's Guideline criteria are highlighted.

Level of Service

As shown in **Table 7**, the eight study intersections, which currently operate below LOS D (greater than 35 seconds of delay) under Existing Conditions, continue to operate below standards with the inclusion of the Project. As noted earlier, under the City's traffic impact thresholds, intersections operating unacceptably or that have specific increases in delay are considered to be potentially significant impacts. **Table 7** shows that the following intersections would operate below LOS D (greater than 35 seconds of delay) in the Existing Plus Project scenario:

- #1 – Ralston Avenue and El Camino Real - Signal
  - Midday and PM Peak Hours
- #3 – Ralston Avenue and South Road - AWSC
  - AM, Midday, and PM Peak Hours
- #4 – Ralston Avenue and Notre Dame University Road - SSSC
  - AM, Midday, and PM Peak Hours
- #5 – Ralston Avenue and Chula Vista Drive - SSSC
  - AM and Midday Peak Hours

- #6 – Ralston Avenue and Notre Dame Avenue - SSSC
    - AM and Midday Peak Hours
- #8 – Ralston Avenue and Cipriani Boulevard - Signal
    - AM Peak Hour
- #10 – Ralston Avenue and Ralston MS Exit - SSSC
    - AM and Midday Peak Hours
- #12 – Ralston Avenue and Tahoe Drive - SSSC
    - AM, Midday and PM Peak Hours

Intersection Delay & LOS – Potentially Significant Impacts

In addition, the following intersections are considered to have potentially significant impacts according to the City of Belmont Guidelines:

- #3 – Ralston Avenue and South Road - AWSC
    - AM, Midday, and PM Peak Hours
- #12 – Ralston Avenue and Tahoe Drive – SSSC
    - AM Peak Hour

The City of Belmont Guidelines for unsignalized intersections is stated in the Study Methodology section.

Analysis sheets are provided in the **Appendix** and were completed using Highway Capacity Manual (HCM) 2000 methodologies in Synchro.

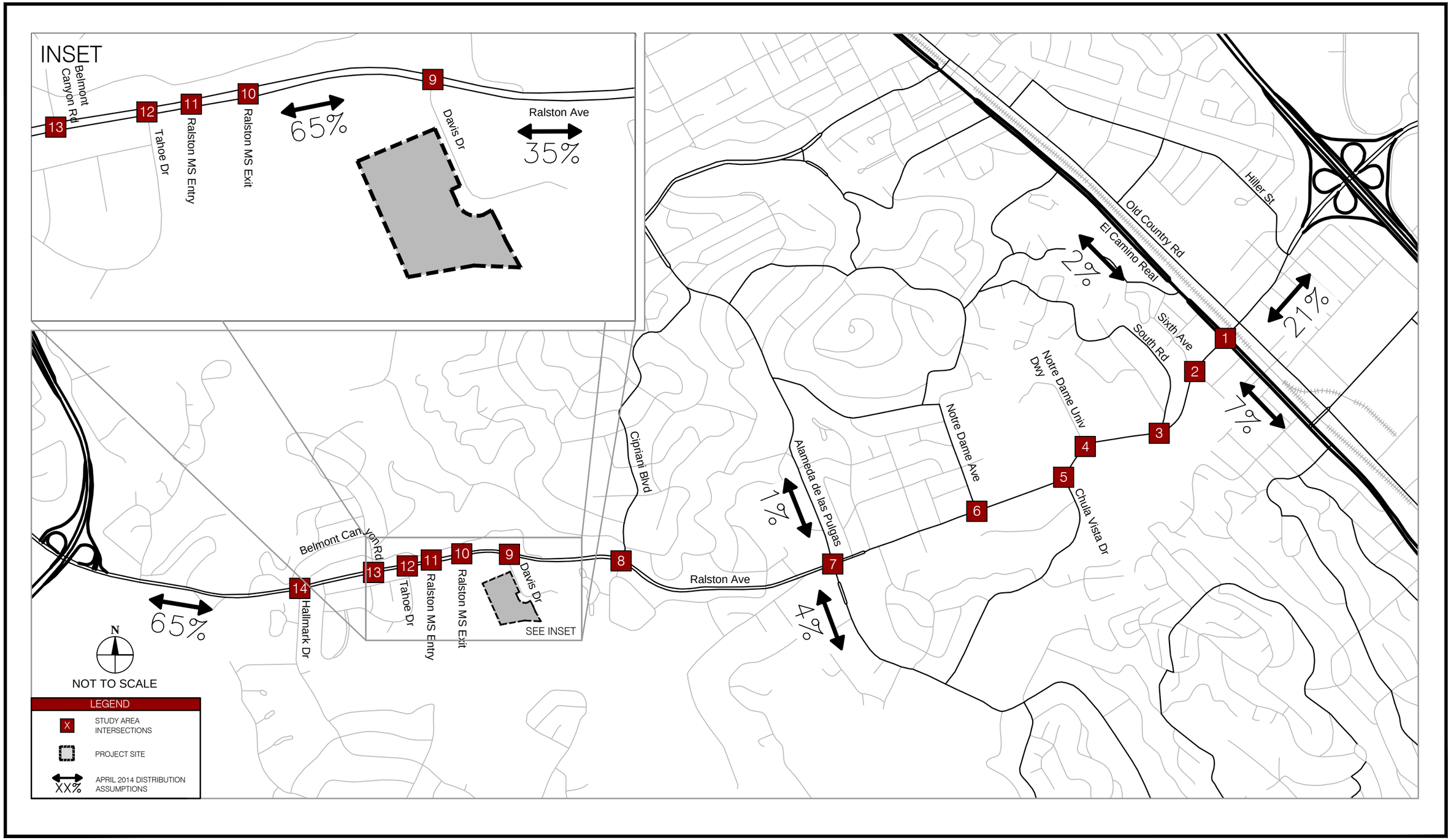

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FIGURE 7
PROJECT TRIP DISTRIBUTION
CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

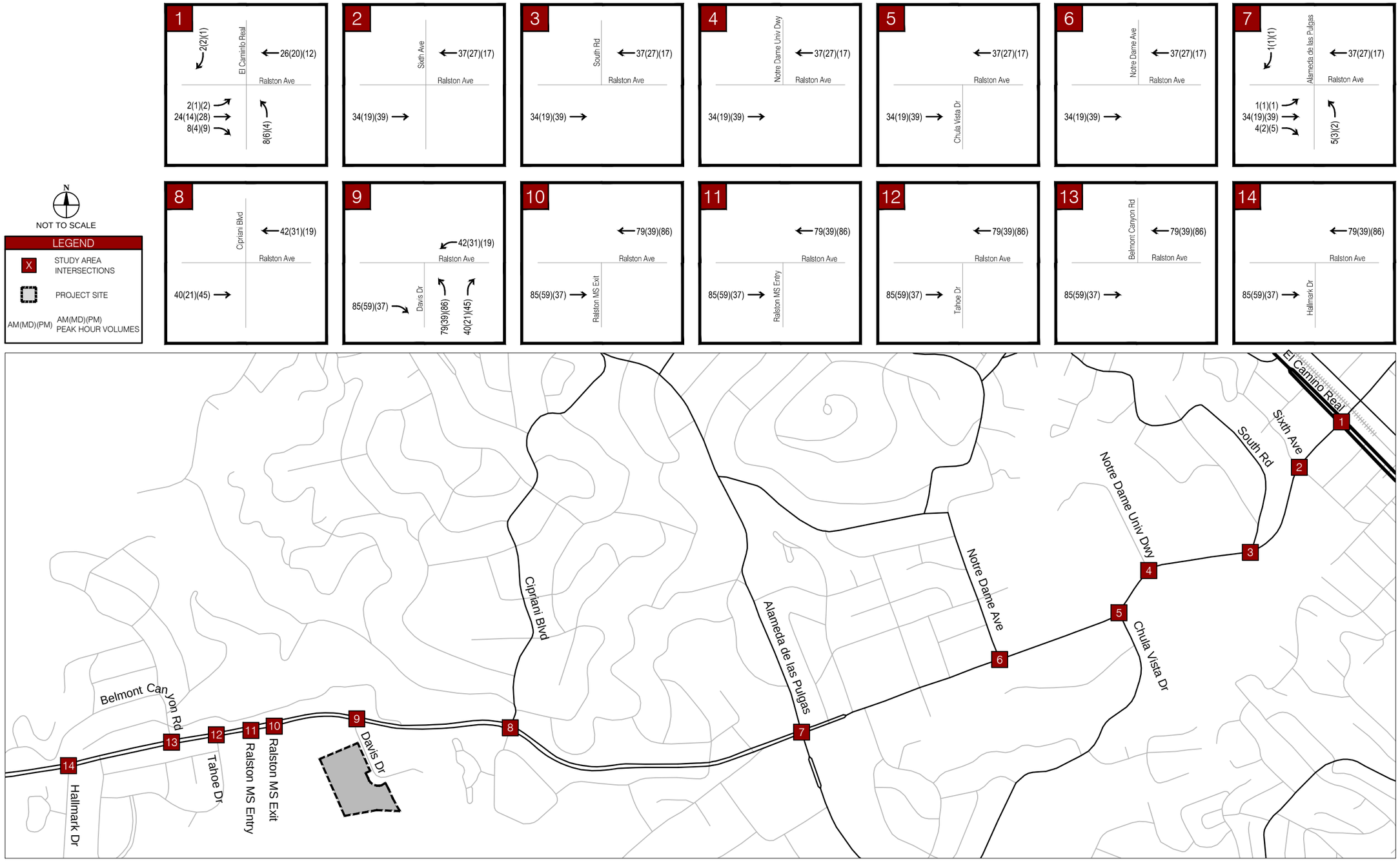

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FIGURE 8
PROJECT TRIP ASSIGNMENT VOLUMES
CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

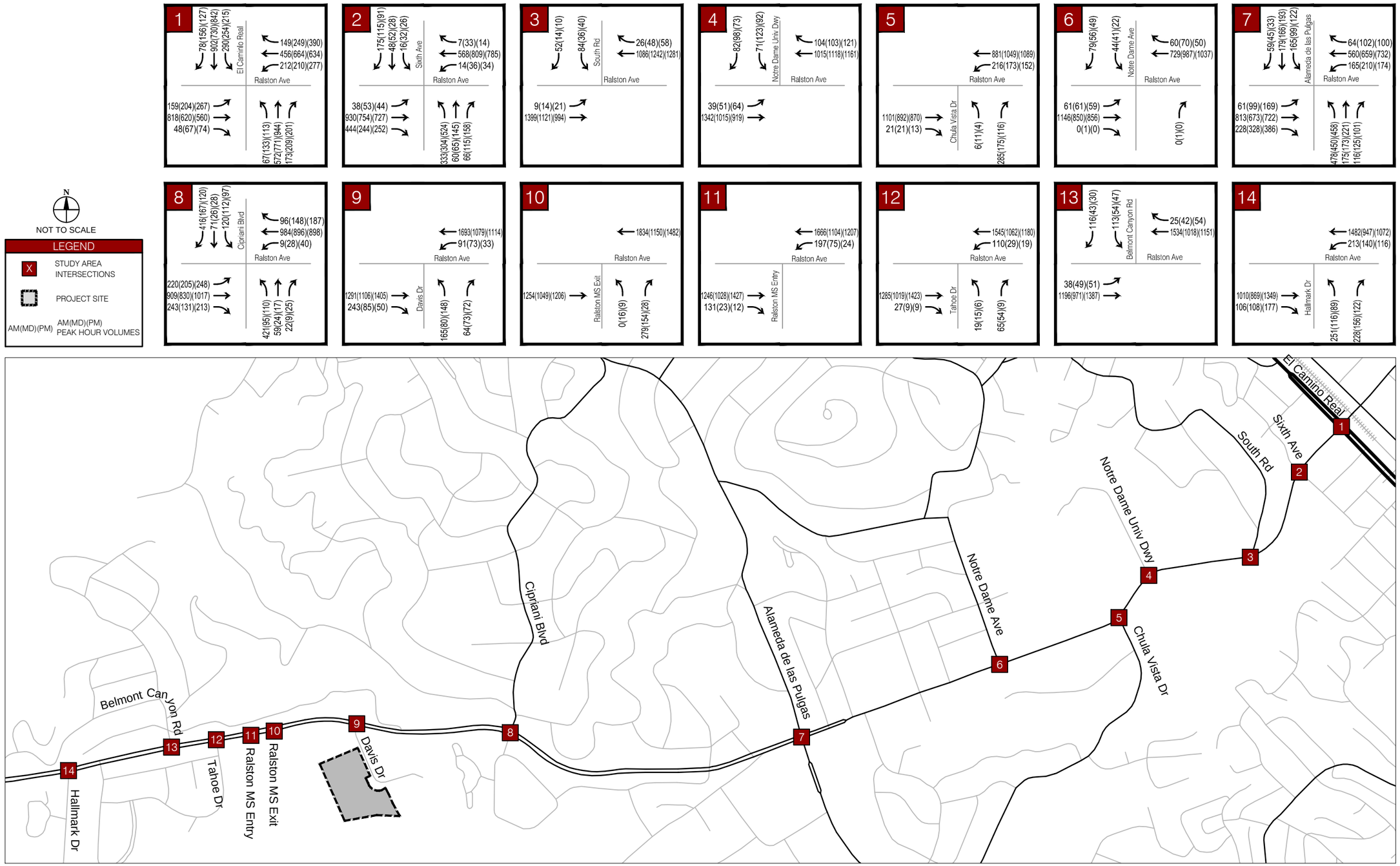

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FIGURE 9

EXISTING (2014) PLUS PROJECT - PEAK HOUR TURNING MOVEMENT VOLUMES

CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

Table 7 - Existing (2014) Plus Project Intersection Level of Service Summary

Int #	Intersection	Jurisdiction	Control	Existing									Existing + Project														
				AM Peak			Mid-Day Peak			PM Peak			AM Peak					Mid-Day Peak					PM Peak				
				LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	ΔDelay	v/c	Δv/c	LOS	Delay	ΔDelay	v/c	Δv/c	LOS	Delay	ΔDelay	v/c	Δv/c
1	**Ralston Ave and El Camino Real**	City	Signal	D	49.9	0.93	**E**	**60.9**	**0.88**	**E**	**56.2**	**0.93**	D	52.0	2.1	0.95	0.02	**E**	**61.9**	**1.0**	**0.89**	**0.01**	**E**	**57.8**	**1.6**	**0.93**	**0.00**
2	Ralston Ave and Sixth Ave	City	Signal	C	27.8	0.66	C	27.8	0.63	C	29.3	0.62	C	28.1	0.3	0.67	0.01	C	28.1	0.3	0.64	0.01	C	29.6	0.3	0.63	0.01
3	**Ralston Ave and South Rd**	City	AWSC	**F**	**212.0**	-	**F**	**139.4**	-	**F**	**127.3**	-	**F**	**228.4**	**16.4**	-	-	**F**	**149.5**	**10.1**	-	-	**F**	**137.0**	**9.7**	-	-
4	**Ralston Ave and Notre Dame de Namur University Dwy**	City	SSSC	A	9.9	-	**E**	**37.7**	-	B	10.4	-	B	11.2	1.3	-	-	**E**	**41.4**	**3.7**	-	-	B	11.3	0.9	-	-
	Worst Approach			***F***	***109.6***	-	***F***	***307.0***	-	***F***	***105.3***	-	***F***	***128.6***	***19.0***	-	-	***F***	***343.8***	***36.8***	-	-	***F***	***117.7***	***12.4***	-	-
5	**Ralston Ave and Chula Vista Dr**	City	SSSC	**F**	**52.3**	-	A	4.3	-	A	2.2	-	**F**	**56.1**	**3.8**	-	-	A	4.4	0.1	-	-	A	2.2	0.0	-	-
	Worst Approach			***F***	***370.2***	-	***E***	***38.4***	-	*C*	*23.4*	-	***F***	***408.5***	***38.3***	-	-	***E***	***40.8***	***2.4***	-	-	*D*	*25.2*	*1.8*	-	-
6	**Ralston Ave and Notre Dame Ave**	City	SSSC	A	3.1	-	A	2.5	-	A	1.7	-	A	3.4	0.3	-	-	A	2.6	0.1	-	-	A	1.7	0.0	-	-
	Worst Approach			***E***	***40.4***	-	***E***	***38.6***	-	*D*	*32.9*	-	***E***	***45.4***	***5.0***	-	-	***E***	***41.2***	***2.6***	-	-	*D*	*34.3*	*1.4*	-	-
7	Ralston Ave and Alameda de Las Pulgas	City	Signal	D	44.1	0.83	D	46.0	0.83	D	41.8	0.80	D	44.7	0.6	0.85	0.02	D	46.4	0.4	0.84	0.01	D	42.4	0.6	0.80	0.00
8	**Ralston Ave and Cipriani Blvd**	City	Signal	**E**	**74.2**	**1.00**	C	27.5	0.67	C	27.6	0.72	**E**	**75.4**	**1.0**	**1.01**	**0.01**	C	27.9	0.4	0.68	0.01	C	28.0	0.4	0.74	0.02
9	Ralston Ave and Davis Dr	City	Signal	B	13.4	0.72	A	9.2	0.54	A	7.3	0.62	C	20.0	6.6	0.82	0.10	B	13.4	4.2	0.63	0.09	B	14.8	7.5	0.74	0.12
10	**Ralston Ave and Ralston MS Exit**	City	SSSC	A	5.0	-	A	3.8	-	A	0.5	-	A	4.5	-0.5	-	-	A	3.7	-0.1	-	-	A	0.4	-0.1	-	-
	Worst Approach			***E***	***40.9***	-	***E***	***35.5***	-	*C*	*23.1*	-	***E***	***38.1***	***-2.8***	-	-	***E***	***35.3***	***-0.2***	-	-	*C*	*22.1*	*-1.0*	-	-
11	Ralston Ave and Raltson MS Entrance	City	SSSC	A	1.1	-	A	0.4	-	A	0.1	-	A	1.2	0.1	-	-	A	0.4	0.0	-	-	A	0.1	0.0	-	-
	Worst Approach			*A*	*2.1*	-	*A*	*0.7*	-	*A*	*0.3*	-	*A*	*2.2*	*0.1*	-	-	*A*	*0.7*	*0.0*	-	-	*A*	*0.3*	*0.0*	-	-
12	**Ralston Ave and Tahoe Dr**	City	SSSC	A	1.5	-	A	2.8	-	A	0.5	-	A	1.9	0.4	-	-	A	3.4	0.6	-	-	A	0.6	0.1	-	-
	Worst Approach			*D*	*26.0*	-	***E***	***49.0***	-	***F***	***51.3***	-	***E***	***37.9***	***11.9***	-	-	***F***	***62.0***	***13.0***	-	-	***F***	***61.6***	***10.3***	-	-
13	Ralston Ave and Belmont Canyon Rd	City	Signal	B	14.4	0.72	A	8.5	0.51	A	7.1	0.55	B	15.0	0.6	0.75	0.03	A	8.5	0.0	0.53	0.02	A	7.2	0.1	0.55	0.00
14	Ralston Ave and Hallmark Dr	City	Signal	C	23.8	0.79	B	15.1	0.58	B	15.2	0.69	C	25.3	1.5	0.82	0.03	B	15.5	0.4	0.60	0.02	B	15.4	0.2	0.71	0.02

Notes: Intersections that are operating below (worse than) LOS D are shown in BOLD. Potentially significant exceedance levels are highlighted.

Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

It should be noted that calculations of delay at saturated conditions (i.e., LOS F) are less reliable than at LOS E or better. Therefore, delay in excess of 80 seconds is reported in the table to allow a relative comparison of without and with project conditions and should not be interpreted as an exact representation of actual delay.

Source: Kimley-Horn and Associates, Inc., 2014

Existing Plus Project Signal Warrants Analysis

Signal warrant calculations were conducted at the non-signalized study intersections for the Existing Plus Project conditions. While the Project causes an increase in Ralston Avenue volumes, it does not increase volume on the side streets. All Existing Plus Project warrants are met except Intersection #12: Ralston Avenue / Tahoe Drive, as was found under Existing Conditions. Below in **Table 8** is the list of the warranted intersection's v/c ratios for the worst approach. These warranted intersections are potentially significant impacts according to the City's Guidelines, because their v/c ratios increase by more than .01 with the inclusion of the Project. As stated previously, the AM peak hour presents the worst case (or most likely case) for which the signal warrant would be met as side street volumes are typically higher during this peak in the study area. To present a worst case, only the AM peak hour results are displayed in this report. The PM peak hour results are shown in the Appendix. Aside from those shown in the AM peak, no additional intersection locations will trigger a signal warrant.

Table 8 - Existing Plus Project (2014) Signal Warranted Intersection v/c Ratios

Int. #	Intersection Description	Existing AM	Existing + Project AM	Δ v/c
3	Ralston Ave / South Rd	1.11	1.15	**0.03**
4	Ralston Ave / Notre Dame Univ.	0.79	0.81	**0.02**
5	Ralston Ave / Chula Vista Dr.	0.65	0.67	**0.02**
6	Ralston Ave / Notre Dame Ave.	0.64	0.66	**0.02**
10	Ralston Ave / Ralston MS Exit	0.55	0.57	**0.02**
11	Ralston Ave / Ralston MS Entrance	0.51	0.54	**0.03**

Notes: Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

Source: Kimley-Horn and Associates, Inc., 2014

FUTURE ROADWAY AND DEVELOPMENT PROJECTS

Buildings in Vicinity of Project Site

The Future (2020) No Project conditions include the occupancy of the office/warehouse buildings located on Davis Drive. The local building owners were queried to determine the approximate percentage of occupied space in February 2014. The difference between those current occupancy levels and the projected maximums was calculated to determine the trip generation for the net additional trips the projected increase in occupancy would generate. 19 Davis Drive, now vacant, has a projected maximum occupancy of 85% for Future Conditions (a threshold set by City staff during scoping). Similarly, when existing counts were taken in February 2014, 20 Davis Drive was occupied by approximately 233 employees or approximately 78% of its capacity. Currently, 20 Davis Drive is being occupied by a technology company with full occupancy assumed to be approximately 300 employees by the Future year. The Existing counts take into account the existing occupancy levels of the other office buildings along Davis Drive. Thus, as shown below in **Table 9,** the *difference between the existing and future occupancy levels* are estimated to generate a net total of 64 additional trips in the AM peak hour and 61 additional trips in the PM peak hour.

Table 9 – Net Additional Trip Generation by Occupancy from Davis Drive Offices

Building Address/Location	Land Use Description	ITE Land Use Code	Total Building Capacity (SF or Employees)	Existing Building Occupancy (2014)	Forecasted Building Occupancy (2020)	Change in Building Occupancy (2014-2020)	Additional Building Area/Employees Occupied By 2020	AM Peak Trips			PM Peak Trips		
								In	Out	Total	In	Out	Total
1 Davis Drive	General Office Building	710	70,000 SF	96%	96%	0%	0 SF	Trips Captured in Existing Counts					
2 Davis Drive	Warehouse	150	26,000 SF	100%	100%	0%	0 SF	Trips Captured in Existing Counts					
11 Davis Drive	Warehouse	150	5,000 SF	100%	100%	0%	0 SF	Trips Captured in Existing Counts					
19 Davis Drive	General Office Building	710	24,000 SF	0%	85%	85%	20,400 SF	28	4	32	5	25	30
20 Davis Drive**	General Office Building	710	300 Empl	78% (233 empl)	100% (300 empl)	22%	67 Empl	28	4	32	6	25	31
Net Additional Peak Trip Generation in 2020								**56**	**8**	**64**	**11**	**50**	**61**

Notes:

The Institute of Transportation Engineer's (ITE) 2010 Trip Generation Manual trip generation rates were referenced for each specified use.

Percent occupied was estimated based on information supplied by the property owners and field verification.
No Midday peak is identified because the Midday peak used within the Analysis correlates to typical school dismissal times and does not correlate the typical mid-day peak of adjacent street traffic.

**20 Davis Drive was approximately 78% occupied when Existing counts were taken on February 13, 2014. In the Future 2020 scenario, 20 Davis Drive will be occupied by a technology company with a forecasted occupancy of 300 employees (information supplied by the property owner). As a result, the net difference between the original occupants, whose trips were captured in Existing Counts, and the future occupants is reflected above to create the net additional peak trip generation for 20 Davis Drive.

Future (2020) Forecast Volumes

The expected traffic conditions during the Future Year (2020) for the AM peak, midday peak, and PM peak periods were developed after consultation with City staff. The future volumes were determined by adding the expected, but not yet completed, other project traffic in the City to existing volumes. Regional traffic growth was added to the existing volumes by applying a growth rate based off the C/CAG traffic model. The RCS and information obtained from the Belmont-Redwood Shores School District were referenced to aid in the development of the future conditions.

Future Traffic

Depending on the particular movement, the annual growth rates ranged from 0% to 6% at the highest when taking into account regional growth for the six years (2014 to 2020). Many of the side streets on Ralston Avenue had lower or zero growth rates given that these neighborhoods are already fully built out. The growth rates were applied to the existing counts and grown to 2020 volumes (primarily for vehicular volumes on Ralston Avenue).

Adjacent School Traffic

Growth projections to 2020 for the adjacent Ralston Middle School and Fox Elementary School were obtained and included in the Future forecasts. Information was obtained from representatives at the Belmont-Redwood Shores School District who provided the 2014 enrollment as well as the anticipated yearly forecast enrollment to Year 2020. Year 2017 was referenced to coincide with the Project's background year for analysis. The data was also presented in a tiered format, indicating low, medium, and high anticipated enrollment forecast numbers. To be conservative, the TIA utilized the high forecasts. The forecast trips anticipated to occur during the school AM, Midday, and PM peaks were extrapolated from the forecasted enrollment values by using the known existing enrollment as well as the existing peak hour turning movements.

Ralston Middle School

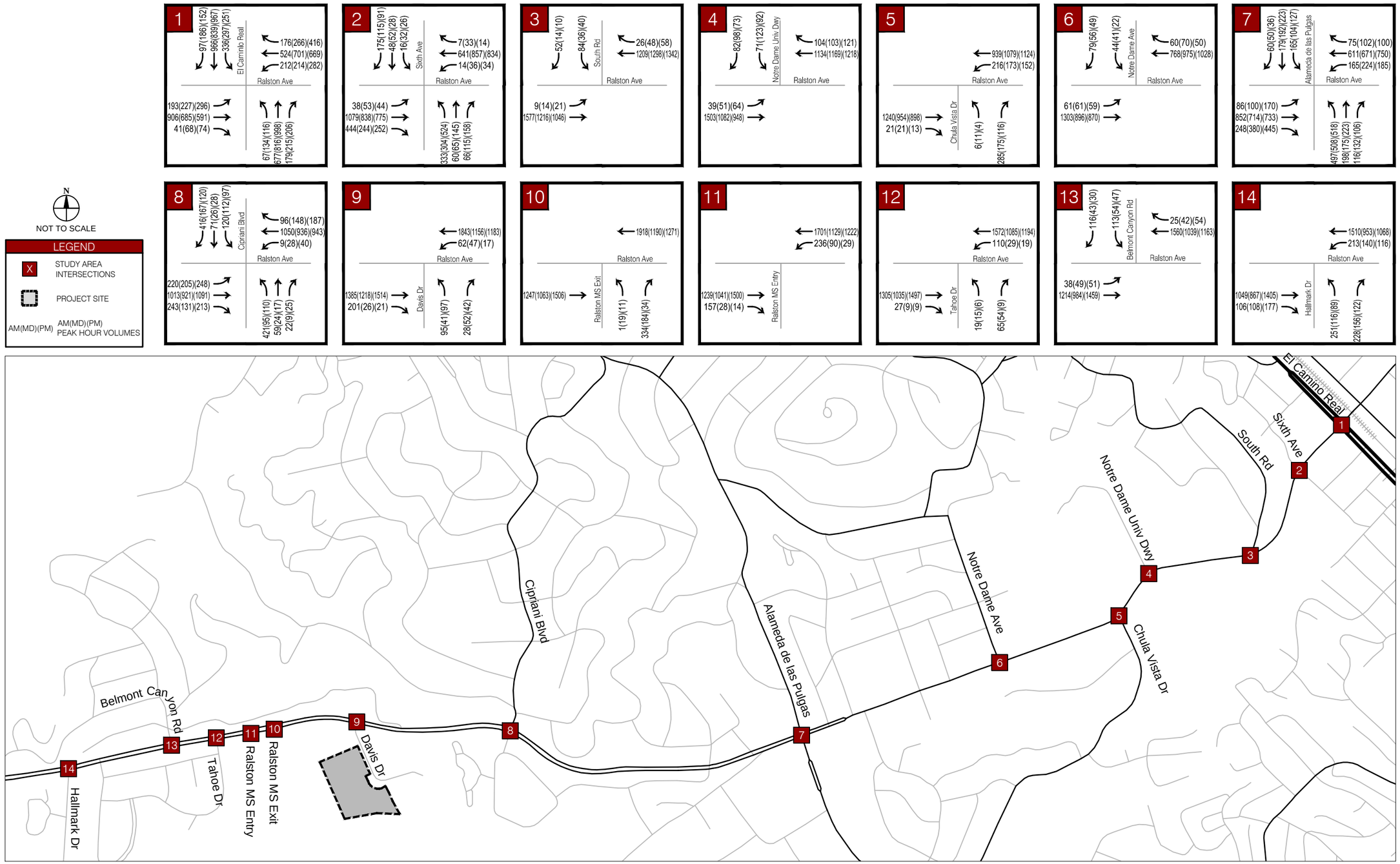
According to the Belmont-Redwood Shores School District, Ralston Middle School's enrollment is anticipated to grow by 226 students (total of 1,376 students) by 2020. Future increases in peak trips were derived by taking the ratio of currently observed peak traffic entering and exiting the Ralston Middle School to the total 2014 enrollment. This metric is the best estimate of how the student enrollment affects the peak hour trips generated. Applying that same ratio to the future 2020 forecast enrollment yielded increases in the school AM, Midday, and PM peak trips by 121, 53, and 15 trips respectively.

Fox Elementary School

According to the Belmont-Redwood Shores School District, Fox Elementary School's enrollment is anticipated to grow by 60 students by 2020. These 60 students will be part of the pre-school special education program's relocation from Nesbit and Redwood Shores Elementary schools to Fox Elementary. The standard bell time for Fox

Elementary pre-school programs indicates a start time of 8:25 AM. In addition, Fox Elementary pre-school/Kindergarten dismissal is at 12:30 PM. Because these times do not coincide with the planned CSUS start and dismissal times, any growth in Fox Elementary School enrollment would cause negligible traffic impacts for this study.

In total, the Future (2020) traffic is comprised of 1) the sum of the projected regional growth indicated by the C/CAG model annual growth rates to the year 2020 for study intersection movements; 2) the addition of the occupied office building trips on Davis Drive; and 3) the projected growth for Ralston Middle School and Fox Elementary School. The future turning movements can be seen in **Figure 10.**



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MM-097609002 April 2015

FIGURE 10

FUTURE (2020) NO PROJECT - PEAK HOUR TURNING MOVEMENT VOLUMES

CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

FUTURE (2020) NO PROJECT TRAFFIC CONDITIONS

Future Intersection Level of Service

Traffic volumes projected for 2020 were evaluated at the study intersections and are presented in **Figure 10**. Intersection level of service results are presented in **Table 10**. As shown, the following same intersections function below LOS D (greater than 35 seconds of delay) under this analysis scenario:

- #1 – Ralston Avenue and El Camino Real - Signal
  - AM, Midday and PM Peak Hours
- #3 – Ralston Avenue and South Road - AWSC
  - AM, Midday, and PM Peak Hours
- #4 – Ralston Avenue and Notre Dame University Road - SSSC
  - AM, Midday, and PM Peak Hours
- #5 – Ralston Avenue and Chula Vista Drive - SSSC
  - AM and Midday Peak Hours
- #6 – Ralston Avenue and Notre Dame Avenue - SSSC
  - AM and Midday Peak Hours
- #8 – Ralston Avenue and Cipriani Boulevard - Signal
  - AM Peak Hour
- #10 – Ralston Avenue and Ralston MS Exit - SSSC
  - AM and Midday Peak Hours
- #12 – Ralston Avenue and Tahoe Drive - SSSC
  - AM, Midday and PM Peak Hours

Note again that the intersections listed above operate below (worse than) LOS D under Future (2020) Conditions, regardless of the Project. Analysis sheets are provided in the **Appendix**.

Table 10 - Future (2020) No Project Intersection Level of Service Summary

Int #	Intersection	Jurisdiction	Control	Future								
				AM Peak			Mid-Day Peak			PM Peak		
				LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c
1	**Ralston Ave and El Camino Real**	City	Signal	**E**	**71.3**	**1.05**	**E**	**74.2**	**1**	**E**	**66.9**	**0.99**
2	Ralston Ave and Sixth Ave	City	Signal	C	29	0.71	C	28.5	0.65	C	30.1	0.65
3	**Ralston Ave and South Rd**	City	AWSC	**F**	**301.4**	-	**F**	**179.2**	-	**F**	**159.6**	-
4	**Ralston Ave and Notre Dame de Namur University Dwy**	City	SSSC	C	22.9	-	**F**	**49**	-	B	15.7	-
	Worst Approach			***F***	***291.2***	-	***F***	***426***	-	***F***	***170.6***	-
5	**Ralston Ave and Chula Vista Dr**	City	SSSC	**F**	**75.5**	-	A	5.1	-	A	2.3	-
	Worst Approach			***F***	***593.8***	-	***E***	***50.4***	-	*C*	*26.7*	-
6	**Ralston Ave and Notre Dame Ave**	City	SSSC	A	4.1	-	A	2.6	-	A	1.7	-
	Worst Approach			***F***	***60.7***	-	***E***	***41.6***	-	*D*	*34*	-
7	Ralston Ave and Alameda de Las Pulgas	City	Signal	D	46.9	0.86	D	51.9	0.88	D	45.9	0.84
8	**Ralston Ave and Cipriani Blvd**	City	Signal	**E**	**79.7**	**1.04**	C	28.6	0.7	C	29	0.76
9	Ralston Ave and Davis Dr	City	Signal	B	15	0.78	A	9.6	0.58	B	10.5	0.7
10	**Ralston Ave and Ralston MS Exit**	City	SSSC	A	9.6	-	A	6.4	-	A	0.5	-
	Worst Approach			***F***	***70.9***	-	***E***	***53.8***	-	*C*	*23*	-
11	Ralston Ave and Ralston MS Entrance	City	SSSC	A	1.7	-	A	0.5	-	A	0.1	-
	Worst Approach			*A*	*3.1*	-	*A*	*0.9*	-	*A*	*0.3*	-
12	**Ralston Ave and Tahoe Dr**	City	Signal	B	10.4	0.69	C	21.8	0.44	B	10.3	0.51
13	Ralston Ave and Belmont Canyon Rd	City	Signal	B	15.4	0.76	A	8.6	0.54	A	7.2	0.58
14	Ralston Ave and Hallmark Dr	City	Signal	C	26.1	0.84	B	15.4	0.6	B	16.3	0.73

Notes: Intersections that are operating below (worse than) LOS D are shown in **BOLD**.

Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

It should be noted that calculations of delay at saturated conditions (i.e., LOS F) are less reliable than at LOS E or better. Therefore, delay in excess of 80 seconds is reported in the table to allow a relative comparison of without and with project conditions and should not be interpreted as an exact representation of actual delay.

Source: Kimley-Horn and Associates, Inc., 2014

Future Signal Warrant Analysis

Signal warrant calculations were conducted at the non-signalized study intersections as per the City's Guidelines. The Peak Hour Volume Warrant (Warrant #3) is satisfied when traffic volumes on the major and minor approaches exceed thresholds for only one hour of the day and is generally the first warrant to be satisfied. Other warrant criteria exists but are less conservative than the peak hour evaluation, therefore the peak hour warrant was used. It should be noted that the AM peak hour presents the worst case (or most likely case) for which the signal warrant would be met as side street volumes are typically higher during this peak in the study area. To present a worst case, only the AM peak hour results are displayed in this report. The PM peak hour results are shown in the Appendix. Aside from those shown in the AM peak, no additional intersection locations will trigger a signal warrant. As shown in the signal warrant tables within the **Appendix**, all but one of the unsignalized intersections met the peak-hour warrant. Intersection #12: Ralston Avenue / Tahoe Drive does not meet the signal warrant. Below in **Table 11** is the list of the warranted intersection's v/c ratios for the worst approach.

Table 11 – Future (2020) No Project Signal Warranted Intersection v/c Ratios

Int. #	Intersection Description	Future AM
3	Ralston Ave / South Rd	1.31
4	Ralston Ave / Notre Dame Univ.	0.91
5	Ralston Ave / Chula Vista Dr.	0.75
6	Ralston Ave / Notre Dame Ave.	0.74
10	Ralston Ave / Ralston MS Exit	0.60
11	Ralston Ave / Ralston MS Entrance	0.55

Notes: Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

Source: Kimley-Horn and Associates, Inc., 2014

Future Plus Project Intersection Level of Service

Traffic operations were evaluated at the study intersections under Future Plus Project as seen on **Figure 11**. Results of the intersection level of service analysis are presented in **Table 12**. Locations operating below (worse than) LOS D are bolded and potentially significant project impacts are highlighted.

The City of Belmont Guidelines for unsignalized intersections is stated in the Study Methodology section.

Level of Service

As shown in **Table 12**, according to the City's Guidelines, the same eight study intersections that do not function above LOS D under Future Conditions also operate below LOS D (greater than 35 seconds of delay) with the inclusion of the Project. **Table 12** shows that the following intersections that would operate below LOS D (greater than 35 seconds of delay) in the Future (2020) Plus Project scenario:

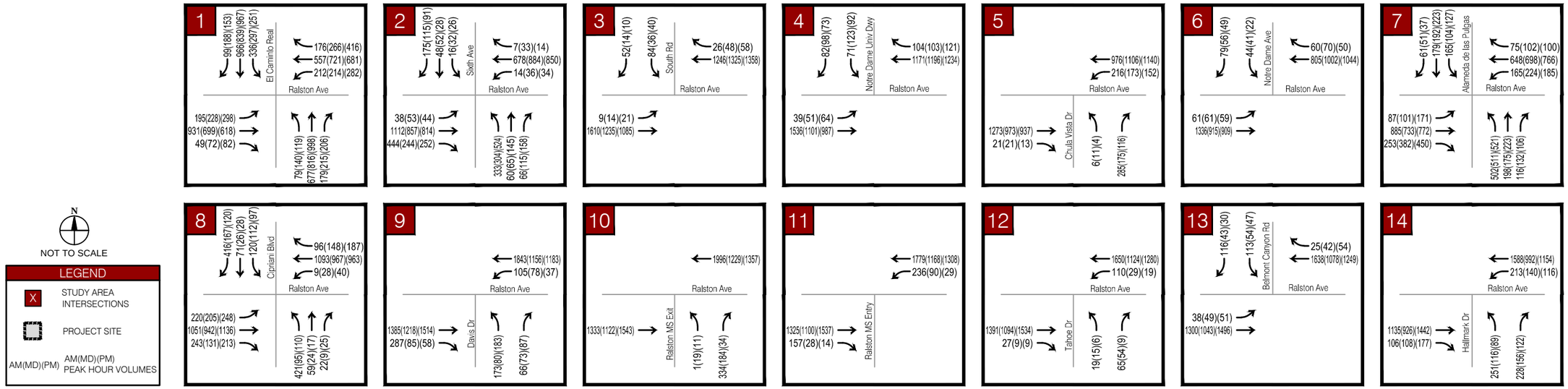
- #1 – Ralston Avenue and El Camino Real - Signal
  - AM, Midday and PM Peak Hours
- #3 – Ralston Avenue and South Road - AWSC
  - AM, Midday, and PM Peak Hours
- #4 – Ralston Avenue and Notre Dame University Road - SSSC
  - AM, Midday, and PM Peak Hours
- #5 – Ralston Avenue and Chula Vista Drive - SSSC
  - AM and Midday Peak Hours
- #6 – Ralston Avenue and Notre Dame Avenue - SSSC
  - AM and Midday Peak Hours
- #8 – Ralston Avenue and Cipriani Boulevard - Signal
  - AM Peak Hour
- #10 – Ralston Avenue and Ralston MS Exit - SSSC
  - AM and Midday Peak Hours
- #12 – Ralston Avenue and Tahoe Drive - SSSC
  - AM, Midday and PM Peak Hours

Intersection Delay & LOS – Potentially Significant Impacts

The following intersections are considered potentially significant according to the City's Guidelines for movement delay:

- #3 – Ralston Avenue and South Road - SSSC
  - AM, Midday, and PM Peak Hours
- #5 – Ralston Avenue and Chula Vista Drive - SSSC
  - AM Peak Hour
- #6 – Ralston Avenue and Notre Dame Avenue
  - PM Peak Hour

Analysis sheets are provided in the **Appendix**.



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MM-097609002 April 2015

FIGURE 11

FUTURE (2020) PLUS PROJECT - PEAK HOUR TURNING MOVEMENT VOLUMES

CRYSTAL SPRINGS UPLANDS SCHOOL TRAFFIC IMPACT STUDY

Table 12 - Future (2020) Plus Project Intersection Level of Service Summary

Int #	Intersection	Jurisdiction	Control	Future									Future Plus Project														
				AM Peak			Mid-Day Peak			PM Peak			AM Peak					Mid-Day Peak					PM Peak				
				LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	v/c	LOS	Delay	ΔDelay	v/c	Δv/c	LOS	Delay	ΔDelay	v/c	Δv/c	LOS	Delay	ΔDelay	v/c	Δv/c
1	**Ralston Ave and El Camino Real**	City	Signal	**E**	**71.3**	**1.05**	**E**	**74.2**	**1**	**E**	**66.9**	**0.99**	**E**	**74.2**	**2.9**	**1.07**	**0.02**	**E**	**75.9**	**1.7**	**1.01**	**0.01**	**E**	**69.4**	**2.5**	**1.01**	**0.02**
2	Ralston Ave and Sixth Ave	City	Signal	C	29	0.71	C	28.5	0.65	C	30.1	0.65	C	29.5	0.5	0.73	0.02	C	28.7	0.2	0.66	0.01	C	30.6	0.5	0.67	0.02
3	**Ralston Ave and South Rd**	City	AWSC	**F**	**301.4**	-	**F**	**179.2**	-	**F**	**159.6**	-	**F**	**318.9**	**17.5**	-	-	**F**	**189**	**9.8**	-	-	**F**	**170**	**10.4**	-	-
4	**Ralston Ave and Notre Dame de Namur University Dwy**	City	SSSC	C	22.9	-	F	49	-	B	15.7	-	C	26.9	4	-	-	**F**	**52.4**	**3.4**	-	-	**C**	**16.8**	**1.1**	-	-
	Worst Approach			***F***	***291.2***	-	***F***	***426***	-	***F***	***170.6***	-	***F***	***349.8***	***58.6***	-	-	***F***	***463.6***	***37.6***	-	-	***F***	***187.4***	***16.8***	-	-
5	**Ralston Ave and Chula Vista Dr**	City	SSSC	**F**	**75.5**	-	A	5.1	-	A	2.3	-	**F**	**79.8**	**4.3**	-	-	A	5.3	0.2	-	-	A	2.3	0	-	-
	Worst Approach			***F***	***593.8***	-	***E***	***50.4***	-	*C*	*26.7*	-	***F***	***644.3***	***50.5***	-	-	***F***	***54.1***	***3.7***	-	-	***D***	***28.9***	***2.2***	-	-
6	**Ralston Ave and Notre Dame Ave**	City	SSSC	A	4.1	-	A	2.6	-	A	1.7	-	A	4.5	0.4	-	-	A	2.7	0.1	-	-	A	1.7	0.0	-	-
	Worst Approach			***F***	***60.7***	-	***E***	***41.6***	-	*D*	*34*	-	***F***	***69.8***	***9.1***	-	-	***E***	***44.5***	***2.9***	-	-	***E***	***35.5***	***1.5***	-	-
7	Ralston Ave and Alameda de Las Pulgas	City	Signal	D	46.9	0.86	D	51.9	0.88	D	45.9	0.84	D	48	1.1	0.87	0.01	D	52.4	0.5	0.89	0.01	D	46.5	0.6	0.85	0.01
8	**Ralston Ave and Cipriani Blvd**	City	Signal	**E**	**79.7**	**1.04**	C	28.6	0.7	C	29	0.76	**F**	**82.7**	**3**	**1.05**	**0.01**	C	29.2	0.6	0.71	0.01	C	29.8	0.8	0.78	0.02
9	Ralston Ave and Davis Dr	City	Signal	B	15	0.78	A	9.6	0.58	B	10.5	0.7	C	24	9	0.88	0.1	B	13.9	4.3	0.67	0.09	B	18.8	8.3	0.82	0.12
10	**Ralston Ave and Ralston MS Exit**	City	SSSC	A	9.6	-	A	6.4	-	A	0.5	-	A	7.6	-2	-	-	A	6.2	-0.2	-	-	A	0.5	0	-	-
	Worst Approach			***F***	***70.9***	-	***E***	***53.8***	-	*C*	*23*	-	***F***	***59.1***	***-11.8***	-	-	***F***	***53.8***	***0***	-	-	*C*	*21.9*	*-1.1*	-	-
11	Ralston Ave and Raltson MS Entrance	City	SSSC	A	1.7	-	A	0.5	-	A	0.1	-	A	2	0.3	-	-	A	0.5	0	-	-	A	0.1	0	-	-
	Worst Approach			*A*	*3.1*	-	*A*	*0.9*	-	*A*	*0.3*	-	*A*	*3.7*	*0.6*	-	-	*A*	*0.9*	*0*	-	-	*A*	*0.3*	*0*	-	-
12	**Ralston Ave and Tahoe Dr**	City	Signal	B	10.4	0.69	C	21.8	0.44	B	10.3	0.51	B	10.8	0.4	0.79	0.1	C	21.4	-0.4	0.46	0.02	B	10.3	0	0.52	0.01
13	Ralston Ave and Belmont Canyon Rd	City	Signal	B	15.4	0.76	A	8.6	0.54	A	7.2	0.58	B	16.5	1.1	0.8	0.04	A	8.6	0	0.55	0.01	A	7.3	0.1	0.59	0.01
14	Ralston Ave and Hallmark Dr	City	Signal	C	26.1	0.84	B	15.4	0.6	B	16.3	0.73	C	28	1.9	0.87	0.03	B	15.8	0.4	0.62	0.02	B	16.8	0.5	0.74	0.01

Notes: Intersections that are operating below (worse than) LOS D are shown in BOLD. Potentially significant exceedance levels are highlighted.

Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

It should be noted that calculations of delay at saturated conditions (i.e., LOS F) are less reliable than at LOS E or better. Therefore, delay in excess of 80 seconds is reported in the table to allow a relative comparison of without and with project conditions and should not be interpreted as an exact representation of actual delay.

Source: Kimley-Horn and Associates, Inc., 2014

Future (2020) Plus Project Signal Warrants Analysis

Signal warrant calculations were conducted at the unsignalized study intersections for the Future (2020) Plus Project conditions. All but one warrant was met in Future conditions. The Project caused an increase in Ralston Avenue volumes and did not increase volumes for the side streets. All Future (2020) Plus Project warrants are also met except Intersection #12: Ralston Avenue / Tahoe Drive.

Below in **Table 13** is the list of the warranted intersection's v/c ratios for the worst approach; all warranted intersections also are potentially significant impacts according to the City's Guidelines as their v/c ratios increased by more than .01 with the inclusion of the Project. As stated previously, the AM peak hour presents the worst case (or most likely case) for which the signal warrant would be met as side street volumes are typically higher during this peak in the study area. To present a worst case, only the AM peak hour results are displayed in this report. The PM peak hour results are shown in the Appendix. Aside from those shown in the AM peak, no additional intersection locations will trigger a signal warrant.

Table 13 – Future (2020) Plus Project Signal Warranted Intersection v/c Ratios

Int. #	Intersection Description	Future AM	Future + Project AM	Δ v/c
3	Ralston Ave / South Rd	1.31	1.33	**0.03**
4	Ralston Ave / Notre Dame Univ.	0.91	0.93	**0.02**
5	Ralston Ave / Chula Vista Dr.	0.75	0.77	**0.02**
6	Ralston Ave / Notre Dame Ave.	0.74	0.76	**0.02**
10	Ralston Ave / Ralston MS Exit	0.60	0.63	**0.02**
11	Ralston Ave / Ralston MS Entrance	0.55	0.59	**0.04**

Notes: Intersection delay, LOS, and v/c ratios calculated with Highway Capacity Manual (HCM) 2000 methodology using Synchro software.

Source: Kimley-Horn and Associates, Inc., 2014

VEHICLE QUEUING FOR ALL SCENARIOS

As congestion increases, it is common for traffic at signals and stop signs to form lines of stopped (or queued) vehicles. Queue lengths were determined for each turn lane throughout the study. Synchro software calculates the queues based on HCM 2000 methodology. The 95th percentile queue is calculated by using 95th percentile traffic to account for fluctuations in traffic and represents a condition where 95 percent of the time during the peak period, traffic volumes and related queuing will be at, or less than, that determined by the analysis and is used as the benchmark for impacts as a standard transportation engineering practice. Average queuing is generally less. Ninety-fifth percentile queuing was estimated under the various development conditions.[6] A typical vehicle length of 25 feet is used in the queuing analysis. Vehicle queuing was considered during the AM, Midday, and PM peaks.
The City's Guidelines state that there would be a potentially significant impact if Project traffic creates vehicle queues exceeding turn lane capacity or causes problematic back-ups of traffic on driveways or roadways on or off the Project site. For locations where Base Case volumes already create vehicle queues exceeding turn lane capacity, there would be a potentially significant impact where Project traffic increases vehicle queues by 1%. As stated in the methodology section, the criteria was interpreted to mean a potentially significant impact is assumed to occur if the queue exceeds the turn pocket length, the queue causes problematic back-ups of traffic or, in cases where the base case already exceeds turn pocket length, a potentially significant impact would occur if the queue is increased by one or more vehicles after the inclusion of the Project. A summary of the queuing results is included in the **Appendix**. The results indicated instances where queuing in the dedicated turn lanes may exceed the storage limits of the turn pockets.

The analysis showed that many existing turn bay lengths are exceeded under future traffic volumes. In most cases, these inadequate turn bay lengths are not associated with the Project, but rather are a result of pre-existing deficiencies. For example, the southbound left turn queue at the intersection of Ralston Avenue / Alameda de las Pulgas is 177 feet during the AM peak during Existing Conditions and the queue length is also 177 feet during the AM peak in the Existing Plus Project conditions. The turn pocket length is 140 feet long and, because the queue spills out of the turn pocket under Existing Conditions, the result is a pre-existing deficiency not associated with the Project. Therefore, this is not an impact since the Project does not increase this queue by at least one vehicle length.

At the study intersections, the increase in vehicle queuing is typically less than one vehicle, except at the intersections listed in **Table 14**.

[6] Existing queuing was calibrated in the Synchro model based on existing signal timing parameters and field observations.

Table 14 – Summary of Vehicle Queuing for All Scenarios

#	Intersection Name	Condition	Movement	Peak Period	Storage Length (ft)	Base Case Vehicle Queue Length (ft)	With Project Vehicle Queue Length (ft)	Exceeds Base Vehicle Queue Length by:
4	Ralston Avenue / Notre Dame University Driveway	Existing	SBR	MD	50	527	554	27 (2 vehicles)
		Future		AM		416	449	33 feet (2 vehicles)
				PM		317	331	14 feet (1 vehicle)
9	Ralston Avenue / Davis Drive	Existing	NBL	AM	50	102	177	75 feet (3 vehicles)
				MD		45	78	78 (2 vehicles)
				PM		61	129	68 feet (3 vehicles)
			WBL	AM	65	76	129	53 feet (2 vehicles)
				MD		65	91	91 (2 vehicles)
		Future	NBL	AM	50	108	185	77 feet (3 vehicles)
				MD		45	78	78 (2 vehicles)
				PM		88	157	69 feet (3 vehicles)
			WBL	AM	65	91	148	57 feet (2 vehicles)
				MD		65	97	97 (2 vehicles)

Source: Kimley-Horn and Associates, Inc., 2016

The queuing impacts listed above are considered potentially significant impacts according to the City's Guidelines.

EXCLUSIVE TURN LANE WARRANT ANALYSIS FOR ALL SCENARIOS

HCM 2000 methodology was used to determine if the addition of exclusive turn lanes were warranted at intersections. According to the City's Guidelines, there would be a potentially significant impact if exclusive turn lanes are warranted at an intersection after inclusion of the Project. For locations where Base Case volumes already exceed turn lane warrant criteria levels, there would be a potentially significant impact where Project traffic increases peak hour volumes by more than 1%. Turn lane warrants were considered during the AM, Midday, and PM peak. However, the AM and PM peak are assumed to be critical periods for vehicular volume and queuing activity within the study area in relation to adjacent street traffic and Project specific traffic. As a result, only the AM and PM peak hour results are presented within this report.

The analysis showed that there are two (2) baseline deficiencies for Existing No Project Conditions and three (3) baseline deficiencies for Future No Project Conditions at the study intersections in terms of turn lane warrant criteria, as shown below:

- Ralston Avenue / El Camino Real – Future Only
- Ralston Avenue / Sixth Avenue – Existing and Future
- Ralston Avenue / Cipriani Boulevard – Existing and Future

After inclusion of the Project, these turns remain deficient but the Project does not add any vehicles to the movements. Thus, according to the City's Guidelines, these are not potentially significant impacts.

Full analysis tables can be seen in the **Appendix**.

POTENTIAL EFFECTS ON TRANSIT, BICYCLE, AND PEDESTRIAN MOBILITY

The Project was evaluated to determine if it would conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by transit, bicycle, or pedestrian facilities and plans.

Students and employees of CSUS have the option of driving, taking transit, walking, bicycling, or using either the bus or shuttle service provided. Those who choose to take transit have the option of taking the Belmont Caltrain (and subsequently utilizing the shuttle service) or bus routes provided by SamTrans. As noted earlier in the trip generation information, CSUS is projected to use transit options and is also anticipated to utilize carpooling to the proposed campus. The proposed shuttle and bus operations servicing the Project will be private transit services rather than public transit services; therefore, the Project is not assumed to have a potentially significant impact to public transit services.

Sidewalks are already installed along Ralston Avenue near Davis Drive and exist on the eastern side of Davis Drive across from the Project site. The Project will construct a sidewalk on the western side of Davis Drive, adjacent to the Project site, in order for CSUS to provide a safe pedestrian option for users. These proposed frontage improvements would extend the existing sidewalk along the western side of Davis Drive from the currently stopped sidewalk south of the Ralston Avenue / Davis Drive intersection to the main Academic Center access point to the south. There are existing crosswalks at the intersection of Ralston Avenue and Davis Drive providing pedestrian access to Davis Drive. Signage will be placed at the northern parking lot entrance/exit and around the student pickup/drop-off point to indicate pedestrian crossings.

A Class III bicycle facility currently exists along Ralston Avenue near the Project site. In addition, a bicycle trail network exists immediately south of the site near Ralston Middle School for the Lake Road Trail.

The Project will construct necessary on-site sidewalks, walkways, bicycle parking, and other amenities in compliance with the City's adopted policies, plans and programs; thus, CSUS's impact on transit, pedestrian or bicycle facilities is determined to be less than significant.

PROPOSED TRAFFIC FLOW, PARKING AND TDM PLANS

On-site circulation was evaluated at the Project's two driveways and within the Project site based on information provided by CSUS in the form of a preliminary site plan. The site plan can be viewed in **Figure 5**.

There are two primary entrances to the Project along Davis Drive and one additional access point that serves as a service vehicle access point. The northernmost curb cut enters the northern half of the parking lot leading to the main parking area, serves the passenger vehicle entrance point for drop-off/pickup activities, and also serves as parking lot exit point. The second curb cut leads to the student drop-off/pickup arc in front of the Academic Center and will be for shuttles and buses only during drop-off/pickup activities. The third curb cut at the southernmost part of the site is a shared student pickup/drop-off arc exit and service access point for vehicles to utilize the service court. All exits shall be side street stop sign controlled intersections with signage and striping for pedestrian crossings.

On-Site Queuing

A queuing analysis was done for the student pickup/drop-off area for both the AM and midday peak periods, which are the times assumed for most student arrivals and departures, respectively. The majority of students is anticipated to arrive within a 15 minute period in the AM (7:30 – 7:45 AM) and will depart within a 30 minute period in the midday (3:20 – 3:50 PM). These peaks, specifically the AM peak, are anticipated to be the worst case arrival and departure times for the CSUS campus, as all other times have anticipated minimal trips in terms of queuing. It is assumed that most staff is expected to arrive prior to the start of the morning queue before the AM peak hour. The rest of the staff will arrive during the 15 minute peak and access the on-site parking instead of utilizing the student pickup/drop-off storage area. All faculty members are assumed to leave during the PM peak hour after the student departures during the midday peak hour.

In total, there are 115 vehicle trips arriving for the queue in the AM and 59 vehicle trips arriving for the midday queue; this is inclusive of bus and shuttle trips for each peak period. Based on engineering and professional judgment, conservative estimates for pickup and drop-off dwelling times of 60 seconds and 30 seconds, respectively, were used in the analysis. The pick-up and drop-off time is the assumed amount of time it takes for a vehicle to enter a dedicated pick-up/drop-off space within the driveway arc and for children to safely enter or exit the car. The conservative estimates used in this analysis are higher than those typically used for middle-school age children.

Information contained in the proposed site plan indicates approximately 909' of overall curb storage from Davis Drive through the student pickup/drop-off area, and a four vehicle utilization of the exclusive pickup/drop-off zone directly in front of the Academic Center.

In the AM, it is estimated the average arrival rate of drop-off time would be 7.67 veh/min; therefore, the total queue would be accommodated according to the site plan. In the midday, it is estimated the average arrival rate of pickup time is 1.97 veh/min, thus there would be no anticipated queue. This indicates that all vehicles would be served given the queue storage provided according to the site plan.

There is an adequate pedestrian crossing within the pickup/drop-off area to safely provide student access to two lanes of queued vehicular traffic. The queue analysis calculations can be found in the **Appendix** and more detail of pickup and drop-off protocols can also be found within the **Appendix** in the **Preliminary Traffic, Parking, and TDM Plans**.

On-Site Parking

On-site parking is provided on the Project site. The site plan accommodates 53 parking spaces (two being ADA accessible), with 21 diagonal spaces, 15 perpendicular spaces, 9 spaces along the gymnasium building, and 8 spaces along the student drop-off/pickup area.

Evaluation of the Project site was observed to provide a combined entrance/exit for 15 ninety degree parking spaces on the northern end of the lot. To access the additional 30 (21 angled and 9 parallel) parking spaces on the western edge, drivers must enter via the northerly driveway and exit to the south. Signage shall be placed to indicate the one-directional (southerly) traffic flow on the western side of the parking lot containing the angled spaces. Given the angled parking and lane width, vehicles are not allowed to enter this section via the southern entrance driveway.

Pedestrian Circulation

Internal pedestrian connections would link the multiple uses associated with the CSUS facility, such as the Academic Center, Science Court, playing fields, and gymnasium. These on-site elements will allow students, visitors, and faculty to conveniently walk from one destination to the next. A sidewalk will be constructed on the western side of Davis Drive as part of the Project connecting Ralston Avenue to the Project site. In addition, there are adequate pedestrian crossings at the site access point intersections and along the student drop-off/pickup area. South of the drop-off/pickup area, the campus is a pedestrian-only zone.

Sight Distances & Emergency Vehicle Access

Currently, emergency vehicle access is via the pickup/drop-off arc entrance. Emergency vehicles will enter and park within the arc for access. Service vehicles would gain access and exit the site via Davis Drive and the southerly access point adjacent to the multi-purpose building. Section D103 of the California Fire Code states that where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet. Sight distances, emergency vehicle and truck access, and on-site circulation

planned for the Project appear to be adequate and would be subject to refinements as part of the design review process.

Transportation Demand Management (TDM)

The trip generation estimates appear to be achievable based on current travel patterns at the Hillsborough CSUS campus. A recent commute survey of middle school parents determined that nearly 30% of middle school students currently carpool to campus and that approximately 35% of them travel to campus by train/shuttle and bus. Therefore, it appears that the culture and practices necessary for a successful trip reduction program are already ingrained in the CSUS parent body. Further, when queried about how they would transport their students to a Belmont campus, 65% of respondents indicated that they would voluntarily utilize carpools, trains/shuttles, buses or local shuttles. Notwithstanding this high level of voluntary participation, CSUS intends to require as a condition of admission that all middle school families commit to support and participate in trip reduction efforts.

CSUS will implement a TDM program. The purpose of the TDM plan is to reduce the number of vehicular trips to and from the Project in order to minimize traffic congestion along the Ralston Avenue corridor.

CSUS proposes a comprehensive TDM program that will require buses, van shuttles, and carpools in place of solo vehicle trips to and from the school. The TDM program intends for the buses and van shuttles to be free and they are expected to transport approximately 100 students from the Hillsdale Caltrain station and various other locations in the morning and back again in the afternoon hours. A similar program currently is in effect at the existing CSUS Hillsborough campus, and it is expected to be just as effective at the new campus in Belmont.

CSUS also will offer bus service that will pick up students at locations along the I-280 corridor, such as the Foothill Expressway exit in Los Altos, the Sharon Heights Shopping Center in Menlo Park, and Woodside Road in Woodside.

Supplemental measures that could be implemented as part of the TDM program include the following;

- On-site TDM outreach coordinator to help implement the plan and identify appropriate shuttle loading areas;
- Distribution of TDM program information to all CSUS families;
- On-site shuttle, Caltrain, and BART schedules;
- Use of the Highway 92 Park & Ride as a resource for ridesharing.

CSUS will provide the City with TDM monitoring reports that assess the efficacy of the TDM program at reducing vehicle trips and confirm that CSUS continues to implement a successful TDM program. CSUS intends to provide annual surveys which include traffic counts conducted at the Project driveways that quantify school trip generation. Further

details regarding the TDM program are included in the **Appendix** in the **Proposed Traffic Flow, Parking, and TDM Plans**.

CONSTRUCTION RELATED IMPACTS REVIEW

Potential traffic related impacts created by the construction of the Project were evaluated as part of this analysis. The number of trips generated by construction activities is estimated to be kept at or less than the trips generated by the Project itself, thus, there are no additional identified potentially significant operational impacts in the study area. The current study area roadways do not indicate any additional locations with identified potential geometric impacts or obvious traffic hazards which would cause a potentially significant impact for construction traffic. The City's final design review process will require CSUS to prepare and submit Traffic Control plans for construction purposes. The traffic control plans will detail construction worker parking locations, the anticipated amount of truck traffic, construction traffic hours, and the length of construction activities. These plans would be reviewed by the City Engineer. The purpose of the Traffic Control Plan is to accommodate safe traffic operations on the roadway system during construction activities. The plans may include warning signals, bollards, and temporary diversion of traffic. Assuming that the processes stated above are adhered to during construction, any potential impacts would be considered less than significant.

SUMMARY OF IMPACTS AND RECOMMENDED MITIGATIONS

This traffic analysis and evaluation of the proposed site plan has identified potential impacts as defined by the City's Guidelines' significance criteria that require mitigation under the California Environmental Quality Act (CEQA). Although CEQA requires all significant impacts to be mitigated, most of the locations with unacceptable operations and identified potential impacts already exist under baseline conditions (i.e. Existing Condition (2014) and Future (2020)).

The Ralston Corridor Study and Improvements Plan (RCS) was approved by the City Council on August 26, 2014 and is intended to address existing and future impacts and constraints along the Ralston Avenue corridor. The Project's impacted intersections overlap with a number of areas identified in the RCS; therefore, the mitigations listed below are discussed in the context of the RCS and the recommended improvements in the RCS.

Since the City does not currently have an established traffic impact fee (TIF) program, the City must determine project-related traffic impacts and mitigations on a case-by-case basis. The City must demonstrate that the required mitigation has a "nexus" to the

impact of the development and is "roughly proportional" to these impacts. Consequently, when a project has an impact under the City's CEQA thresholds, but the cost of a physical improvement may be excessive, the City may determine a "fair share" cost contribution toward specific improvements based on a percentage of peak hour or daily trips that the project contributes to the roadway or intersection and other factors.

The RCS recognizes that there are instances where traffic signal warrants may be satisfied under the City's Guidelines triggering the need for signalization, but the RCS also acknowledges that other traffic improvements could provide equal or better operations and that traffic signals are not desired at certain intersections. As a consequence, the RCS requires that any determination the City makes regarding appropriate traffic mitigation measures for a development project along the Ralston Avenue corridor should be consistent with the RCS. This allows for the necessary flexibility to ensure both operational improvements and preservation of community character along the corridor.

Accordingly, this traffic analysis addresses mitigations for the Project's identified impacts within the context of the RCS' anticipated improvements for the Ralston Avenue corridor.

The potentially significant impacted intersections which may require subsequent courses of action are listed below for all Project-inclusive scenarios:

- Intersection #3: Ralston Avenue / South Road
- Intersection #4: Ralston Avenue / Notre Dame de Namur University Driveway
- Intersection #5: Ralston Avenue / Chula Vista Drive
- Intersection #6: Ralston Avenue / Notre Dame Avenue
- Intersection #9: Ralston Avenue / Davis Drive
- Intersection #10: Ralston Avenue / Ralston Middle School Exit
- Intersection #11: Ralston Avenue / Ralston Middle School Entrance
- Intersection #12: Ralston Avenue / Tahoe Drive

Recommended Mitigations

EXISTING PLUS PROJECT

Impact #1—Ralston Avenue and South Road (Intersection #3)

The intersection of Ralston Avenue and South Road operates at LOS F during the AM, Midday, and PM peak hours under Existing Conditions, with delays of 212, 139, and 127 seconds, respectively. Because the intersection already is degraded, the addition of the Project will cause an increase in delay exceeding the 4 second average control delay threshold. The intersection also meets the signal warrant criteria under Existing

and Existing Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. Together, these result in potentially significant impacts.

Mitigation #1

While it would be appropriate for the applicant to contribute its fair share to the signalization of the intersection based on traffic volume contributed to the intersection and other factors, the applicant has offered to pay the full cost of a traffic signal at this intersection in lieu of contributing relatively minor fair share contributions for this and other intersections. If the signal is installed, the resultant intersection LOS would be LOS A for the AM, Midday, and PM peak hours with delays of 8.7, 3.8, and 4.2 seconds, respectively. The results can be seen in the **Appendix**.

The conversion of South Road to a signalized intersection and improvements to the east and westbound approaches are identified in the RCS and, therefore, Mitigation #1 would be consistent with the RCS' anticipated improvements for this intersection. The CSUS payment for the cost of the traffic signal would reduce this potentially significant impact to a less than significant level.

Impact #2 – Ralston Avenue and Notre Dame de Namur University Driveway (Intersection #4)

The intersection of Ralston Avenue and Notre Dame de Namur University Driveway meets the signal warrant criteria under Existing and Existing Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. In addition, the intersection has a SBR 95th percentile queue length of 554 feet in Existing Plus Project Conditions. This value is more than the permitted increase of 1% (or an increase in one queued vehicle in most cases as identified in the interpretation of the City of Belmont's Guidelines for Traffic Impact Studies as indicated in the Methodology section). This results in a potentially significant impact.

Mitigation #2

The potentially significant impact at this intersection could be mitigated by the installation of a traffic signal. However, the RCS recommends a modern roundabout at this intersection instead of signalization in order to provide traffic calming benefits along this section of the Ralston Avenue corridor. Payment of the costs of the roundabout by CSUS would be disproportionate to the Project's incremental traffic contribution to the intersection. While payment of the Applicant's fair share contribution toward the cost of the improvement at this intersection would be reasonable, instead the Applicant has offered to fully fund Intersection #3: Ralston Avenue / South Road (See Mitigation #1) in lieu of

paying a fair share contribution for this intersection. Consequently, this impact would not be mitigated in the near term and, as a result, the impact at this intersection will remain potentially significant and unavoidable.

Impact #3 – Ralston Avenue and Chula Vista Drive (Intersection #5)

The intersection of Ralston Avenue and Chula Vista Drive meets the signal warrant criteria in Existing and Existing Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. This results in a potentially significant impact.

Mitigation #3

The potentially significant impact at this intersection could be mitigated by the installation of a traffic signal. However, the RCS identifies extensive crossing improvements at this intersection, including the installation of a median, the removal of the WB merge, and the installation of a rectangular rapid flash beacon (RRFB), instead of signalization in order to provide traffic calming benefits along this section of the Ralston Avenue corridor. Payment of the costs of the improvements at this intersection by CSUS would be disproportionate to the Project's incremental traffic contribution to the intersection. While payment of the Applicant's fair share contribution toward the cost of the improvement at this intersection would be reasonable, instead the Applicant has offered to fully fund Intersection #3: Ralston Avenue / South Road (See Mitigation #1) in lieu of paying a fair share contribution for this intersection. Consequently, this impact would not be mitigated in the near term and, as a result, the impact at this intersection will remain potentially significant and unavoidable.

Impact #4 – Ralston Avenue and Notre Dame Avenue (Intersection #6)

The intersection of Ralston Avenue and Notre Dame Avenue meets the signal warrant criteria in Existing and Existing Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. This results in a potentially significant impact.

Mitigation #4

The potentially significant impact at this intersection could be mitigated by the installation of a traffic signal. The RCS identifies the signalization of Notre Dame Avenue in addition to striping and crosswalk improvements. Payment of the costs of the improvements at this intersection by CSUS would be disproportionate to the Project's incremental traffic contribution to the intersection. While payment of the Applicant's fair share contribution toward the cost of the improvement at this intersection would be reasonable, instead the Applicant has offered to fully fund Intersection #3: Ralston Avenue / South Road (See Mitigation #1) in lieu of

paying a fair share contribution for this intersection. Consequently, this impact would not be mitigated in the near term and, as a result, the impact at this intersection will remain potentially significant and unavoidable.

Impact #5 – Ralston Avenue and Davis Drive (Intersection #9)

The intersection of Ralston Avenue and Davis Drive has a NBL 95th percentile queue length of 177 feet, 78 feet, and 129 feet for the AM, Midday, and PM peak hours, respectively in Existing Plus Project Conditions. In addition, it has a WBL 95th percentile queue length of 129 feet and 91 feet for the AM and Midday peak hours in Existing Plus Project Conditions, respectively. These values are more than the permitted increase of 1% (or an increase in one queued vehicle in most cases as identified in the interpretation of the City of Belmont's Guidelines for Traffic Impact Studies as indicated in the Methodology section). This results in a potentially significant impact. Only the AM peak hour for the WBL was operating over-capacity under Existing Conditions at this intersection.

Mitigation #5

The Applicant shall restripe the NBR turn to a shared NBR/L turn lane. The restriping will likely require a signal modification but is up to the City's discretion. The applicant shall increase of the WBL turn pocket by 85 feet creating a new total storage length of 150 feet. The applicant shall fully fund both improvements.

As shown in the **Appendix** and consistent with the City of Belmont's Guidelines for Traffic Impact Studies, the new intersection geometry allows the 95th percentile queues of the NBL to be 97 feet, 32 feet, and 47 feet for the AM, Midday, and PM peak hours, respectively, and for the WBL queue to be 125 feet and 81 feet in the AM and Midday peak hours, respectively. The potentially significant impact is therefore reduced to a less than significant level.

Impact #6 – Ralston Avenue and Ralston Middle School Exit (Intersection #10)

The intersection of Ralston Avenue and the Ralston Middle School Exit meets the signal warrant criteria under Existing and Existing Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. This results in a potentially significant impact. However, it should be noted that the Project adds zero trips to the intersection's critical movement (i.e., the exit driveway) and adds 164 of 3,367 trips (4.9% of intersection traffic) in the warranted peak hour.

Mitigation #6

The potentially significant impact at this intersection could be mitigated by the installation of a traffic signal. However, the RCS does not recommend that the

driveway be signalized. Rather, the RCS recognizes that, if the Ralston Avenue/Tahoe Drive intersection is signalized, access from the Ralston Middle School driveway could be modified to improve its operations. The Belmont Redwood Shores School District has agreed, as part of its expansion, to fully fund the traffic signal at Tahoe Drive. As a result of this mitigation by the School District, the potentially significant impact would be mitigated to a less than significant level.

Impact #7 – Ralston Avenue and Ralston Middle School Entrance (Intersection #11)

The intersection of Ralston Avenue and the Ralston Middle School Entrance meets the signal warrant criteria under Existing and Existing Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. This results in a potentially significant impact. The Project adds zero trips to the intersection's critical movements (i.e., the entrance driveways) and adds 164 of 3,240 trips (5.1% of intersection traffic) in the warranted peak hour.

Mitigation #7

The potentially significant impact at this intersection could be mitigated by the installation of a traffic signal. However, the RCS does not recommend that the driveway be signalized. Rather, the RCS recognizes that, if the Ralston Avenue/Tahoe Drive intersection is signalized, access to the Ralston Middle School driveway could be modified to improve its operations. While the School District has agreed to install a traffic signal at the Ralston Avenue/Tahoe Drive intersection, the impacts may not be full mitigated. As a result, impacts at this intersection will remain potentially significant and unavoidable.

Impact #8 – Ralston Avenue and Tahoe Drive (Intersection #12)

The intersection of Ralston Avenue and Tahoe Drive operates at LOS A (1.5 second delay) and the SSSC approach at LOS D (26.0 seconds delay) during the AM peak hour under Existing Conditions. The addition of the Project traffic causes the SSSC delay to increase to LOS E (37.9 seconds delay), resulting in a potentially significant impact under the City's Guidelines. However, it should be noted that the Project adds zero trips to the intersection's critical movement (i.e., the northbound approach) and adds 164 of 3,051 trips (5.4% of intersection traffic) in the AM peak hour.

Mitigation #8

The signalization of this intersection is currently identified in the BRSSD 5 School Expansions TIA (Hexagon Transportation Consultants, Inc., 2015) and is planned to be implemented under the direction of the City of Belmont, thus, is not a Project level mitigation. Consistent with the City of Belmont's Guidelines for

Traffic Impact Studies, if the signal were implemented, the resultant LOS would be A, C, and B for the AM, Midday, and PM peak hours with delays of 6.8, 22.4, and 12.3 seconds, respectively. The results can be seen in the **Appendix**. After implementation of the signal, impacts at this intersection will be reduced to a less than significant level.

FUTURE (2020) PLUS PROJECT

Impact #9 – Ralston Avenue and South Road (Intersection #3)

The intersection of Ralston Avenue and South Road also operates at LOS F during the AM, Midday, and PM peak hours with delays of 301, 179, and 160 seconds of delay, respectively under Future No Project conditions. Because the intersection already is degraded, the addition of the Project will cause an increase in delay exceeding the 4 second average control delay threshold. The intersection also meets the signal warrant criteria under Future and Future Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. Together, these result in potentially significant impacts.

Mitigation #9

See Mitigation #1.

After implementation of the signal, the resulting intersection LOS results for the Future Plus Project scenario would be LOS B (11.7 seconds of delay), LOS A (6.4 seconds of delay), and LOS A (6.3 seconds of delay) for AM, Midday, and PM peak hours, respectively.

Impact #10 – Ralston Avenue and Notre Dame de Namur University Driveway (Intersection #4)

The intersection of Ralston Avenue and Notre Dame de Namur University Driveway meets the signal warrant criteria under Future and Future Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. The intersection also has SBR 95th percentile queue lengths of 449 feet and 331 feet for the AM and PM peak hours, respectively. These values exceed the permitted increase of 1% (or an increase in one queued vehicle) set by the City's Guidelines. Together, these result in potentially significant impacts.

Mitigation #10

See Mitigation #2

Impact #11 – Ralston Avenue and Chula Vista Drive (Intersection #5)

The intersection of Ralston Avenue and Chula Vista Drive operates at LOS F (80 seconds of delay) during the AM peak hour under Future No Project conditions. The addition of the Project will cause an increase in delay exceeding the 4 second average control delay threshold. The intersection also meets the signal warrant criteria under Future and Future Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. Together, these result in potentially significant impacts.

Mitigation #11

See Mitigation #3

Impact #12 – Ralston Avenue and Notre Dame Avenue (Intersection #6)

The intersection of Ralston Avenue and Notre Dame Avenue operates at LOS A (2 seconds of delay) and the SSSC approach at LOS D (34 seconds of delay) in the PM peak hour under Future No Project conditions. After inclusion of the Project, the intersection operates at LOS A (2 seconds of delay) and the SSSC approach at LOS E (36 seconds of delay). The intersection also meets the signal warrant criteria under Future and Future Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. Together, these result in potentially significant impacts.

Mitigation #12

See Mitigation #4

Impact #13 – Ralston Avenue and Davis Drive (Intersection #9)

The intersection of Ralston Avenue and Davis Drive has a NBL 95th percentile queue length of 185 feet, 78 feet, and 157 feet for the AM, Midday, and PM peak hours, respectively in Future Plus Project Conditions. In addition, it has a WBL 95th percentile queue length of 148 feet and 97 feet for the AM and Midday peak hours, respectively. These values are more than the permitted increase of 1% (or an increase in one queued vehicle in most cases) set by the City's Guidelines. This results in a potentially significant impact. Only the AM peak hour for the WBL was operating over-capacity in the Future No Project scenario.

Mitigation #13

See Mitigation #5.

After implementation of the intersection improvements, the resulting 95th percentile queue lengths are 102 feet and 61 feet for the NBL in the AM and PM peak hours, respectively and 141 feet for the WBL in the AM peak hour.

Impact #14 – Ralston Avenue and Ralston Middle School Exit (Intersection #10)

The intersection of Ralston Avenue and the Ralston Middle School Exit meets the signal warrant criteria under Future and Future Plus Project Conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. This results in a potentially significant impact. However, it should be noted that the Project adds zero trips to the intersection's critical movement (i.e., the exit driveway) and adds 4.5% of intersection traffic in the warranted peak hour.

Mitigation #14

See Mitigation #6

Impact #15 – Ralston Avenue and Ralston Middle School Entrance (Intersection #11)

The intersection of Ralston Avenue and the Ralston Middle School Entrance meets the signal warrant criteria under Future and Future Plus Project conditions. With the inclusion of the Project, the v/c ratio increases by more than the .01 threshold set by the City's Guidelines. This results in a potentially significant impact. It should be noted that the Project adds zero trips to the intersection's critical movements (i.e., the entrance driveways) and adds 4.7% of intersection traffic in the warranted peak hour.

Mitigation #15

See Mitigation #7

A complete list of all identified significant measures of effectiveness, the proposed mitigations, and the percent of project peak intersection traffic are shown in **Table 15.**

Table 15 - Summary of Significant Measures of Effectiveness (MOEs) & Possible Mitigations

Scenario	Impact #	Int #	Intersection Name	Significant MOE	Possible Mitigation	Percent of Project Peak Intersection Traffic[1]
Existing Plus Project	1[R]	3	Ralston Ave/ South Rd	Delay / LOS Signal Warrant / v.c. Ratio	As indicated in the RCS, signalize and improve intersection.	2.5%
	2[R]	4	Ralston Ave / Notre Dame Univ.	Signal Warrant / v.c. Ratio Queuing	As indicated in the RCS, convert to a Roundabout.	2.5%
	3[R]	5	Ralston Ave/ Chula Vista Dr	Signal Warrant / v.c. Ratio	As indicated in the RCS, implement crossing improvements and a restriction of the NBL.	2.7%
	4[R]	6	Ralston Ave / Notre Dame Ave	Signal Warrant / v.c. Ratio	As indicated in the RCS, signalize and improve crossings.	3.0%
	5	9	Ralston Ave/ Davis Dr	Queuing	Restripe NBR to be a shared NBR/L (will likely require a signal modification) Increase WBL turn pocket by 85' (total storage length of 150')	6.8%
	6	10	Ralston Ave / Ralston MS Exit	Signal Warrant / v.c. Ratio	As indicated in the RCS, construct sidewalks along RMS frontage. The future signal at Tahoe Drive will alleviate side street congestion.	4.7%
	7	11	Ralston Ave / Ralston MS Entrance	Signal Warrant / v.c. Ratio	As indicated in the RCS, restrict the WBL turn to a "Bus Only" turn and construct sidewalks on RMS frontage.	4.9%
	8[R]	12	Ralston Ave / Tahoe Dr	Delay / LOS	As indicated in the RCS, signalize and improve medians.	5.0%[2]
Future Plus Project	9[R]	3	Ralston Ave/ South Rd	Delay / LOS Signal Warrant / v.c. Ratio	As indicated in the RCS, signalize and improve intersection.	2.3%
	10[R]	4	Ralston Ave / Notre Dame Univ.	Signal Warrant / v.c. Ratio Queuing	As indicated in the RCS, convert to a Roundabout.	2.3%
	11[R]	5	Ralston Ave/ Chula Vista Dr	Delay / LOS Signal Warrant / v.c. Ratio	As indicated in the RCS, implement crossing improvements and a restriction of the NBL.	2.5%
	12[R]	6	Ralston Ave / Notre Dame Ave	Delay / LOS Signal Warrant / v.c. Ratio	As indicated in the RCS, signalize and improve crosings[3]	2.8%
	13	9	Ralston Ave / Davis Dr	Queuing	Restripe NBR to be a shared NBR/L (will likely require a signal modification) Increase WBL turn pocket by 85' (total storage length of 150')	6.3%
	14	10	Ralston Ave / Ralston MS Exit	Signal Warrant / v.c. Ratio	As indicated in the RCS, construct sidewalks along RMS frontage. The future signal at Tahoe Drive will alleviate side street congestion.	4.3%
	15	11	Ralston Ave / Ralston MS Entrance	Signal Warrant / v.c. Ratio	As indicated in the RCS, signalize and improve medians.	4.5%

1. The Project vehicular contribution displayed here is calculated as the sum of the AM and PM Project Only peak hour volumes for the intersection over the sum of the baseline plus project AM and PM peak hour volumes for the intersection.

2. As indicated in the BRSSD 5 School Expansions TIA (Hexagon Transportation Consultants, Inc, 2015), the signal improvement at Tahoe Drive is planned to be implemented under the discretion of the City of Belmont, thus, is not a Project level mitigation.

3. The professional engineering suggestion for this intersection is that a signal is not imminently necessary given that the v/c ratio only increases by only .02 from the baseline and the plus project delay/LOS using the existing SSSC configuration is adequate given the City of Belmont delay and LOS Guidelines. However, to technically meet the City of Belmont's non-LOS and delay Guidelines, a signal is required.

R. Intersection contains proposed improvements identified in the vested Ralston Avenue Corridor Study & Improvement Plan (*W-Trans & Alta Planning + Design, 2014*).

Source: Kimley-Horn and Associates, Inc. 2015

APPENDIX

INTERSECTION TURNING MOVEMENT COUNTS

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-005 El Camino Real-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	El Camino Real Southbound					Ralston Avenue Westbound					El Camino Real Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	48	116	12	0	176	46	83	24	0	153	6	63	36	0	105	24	140	10	0	174	608	0
07:15	56	173	20	0	249	40	149	28	0	217	4	115	34	0	153	30	169	10	0	209	828	0
07:30	63	187	21	0	271	41	137	26	0	204	16	117	35	0	168	50	180	16	0	246	889	0
07:45	73	265	20	0	358	48	94	43	0	185	14	158	45	0	217	32	189	6	0	227	987	0
Total	240	741	73	0	1054	175	463	121	0	759	40	453	150	0	643	136	678	42	0	856	3312	0
08:00	74	222	18	0	314	63	102	51	0	216	13	140	54	0	207	40	212	12	0	264	1001	0
08:15	80	228	17	0	325	60	97	29	0	186	16	157	39	0	212	35	213	7	0	255	978	0
08:30	77	214	19	0	310	47	116	32	0	195	20	143	47	0	210	29	220	6	0	255	970	0
08:45	77	229	18	0	324	43	93	41	0	177	24	185	65	0	274	32	206	9	0	247	1022	0
Total	308	893	72	0	1273	213	408	153	0	774	73	625	205	0	903	136	851	34	0	1021	3971	0
14:00	59	146	27	0	232	59	130	61	0	250	28	128	59	0	215	40	144	16	0	200	897	0
14:15	72	161	44	0	277	48	131	50	0	229	42	161	55	0	258	41	119	21	0	181	945	0
14:30	52	143	38	0	233	40	140	53	0	233	30	148	44	0	222	56	157	16	0	229	917	0
14:45	74	190	47	0	311	56	173	55	0	284	24	173	63	0	260	61	148	14	0	223	1078	0
Total	257	640	156	0	1053	203	574	219	0	996	124	610	221	0	955	198	568	67	0	833	3837	0
15:00	53	158	42	0	253	43	169	58	0	270	40	193	57	0	290	56	149	15	0	220	1033	0
15:15	67	209	34	0	310	51	150	72	0	273	33	206	55	0	294	42	158	15	0	215	1092	0
15:30	60	173	31	0	264	60	152	64	0	276	30	199	34	0	263	44	151	19	0	214	1017	0
15:45	61	195	38	0	294	71	126	64	0	261	29	226	54	0	309	46	155	5	0	206	1070	0
Total	241	735	145	0	1121	225	597	258	0	1080	132	824	200	0	1156	188	613	54	0	855	4212	0
16:00	49	187	36	0	272	65	159	64	0	288	35	210	56	0	301	64	145	17	0	226	1087	0
16:15	53	210	36	0	299	63	145	65	0	273	37	253	57	0	347	40	136	14	0	190	1109	0
16:30	52	176	28	0	256	69	173	76	0	318	35	221	46	0	302	65	139	23	0	227	1103	0
16:45	58	214	47	0	319	63	166	77	0	306	22	258	49	0	329	34	135	14	0	183	1137	0
Total	212	787	147	0	1146	260	643	282	0	1185	129	942	208	0	1279	203	555	68	0	826	4436	0
17:00	59	187	40	0	286	57	156	100	0	313	34	217	52	0	303	74	155	16	0	245	1147	0
17:15	61	219	33	0	313	78	176	87	0	341	21	263	51	0	335	48	109	14	0	171	1160	0
17:30	50	200	22	0	272	58	143	86	0	287	31	221	43	0	295	85	141	20	0	246	1100	0
17:45	45	236	31	0	312	84	147	117	0	348	23	243	55	0	321	58	127	15	0	200	1181	0
Total	215	842	126	0	1183	277	622	390	0	1289	109	944	201	0	1254	265	532	65	0	862	4588	0
Grand Total	1473	4638	719	0	6830	1353	3307	1423	0	6083	607	4398	1185	0	6190	1126	3797	330	0	5253	24356	0
Apprch %	21.6%	67.9%	10.5%	0.0%		22.2%	54.4%	23.4%	0.0%		9.8%	71.1%	19.1%	0.0%		21.4%	72.3%	6.3%	0.0%			
Total %	6.0%	19.0%	3.0%	0.0%	28.0%	5.6%	13.6%	5.8%	0.0%	25.0%	2.5%	18.1%	4.9%	0.0%	25.4%	4.6%	15.6%	1.4%	0.0%	21.6%	100.0%	

AM PEAK HOUR	El Camino Real Southbound					Ralston Avenue Westbound					El Camino Real Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	74	222	18	0	314	63	102	51	0	216	13	140	54	0	207	40	212	12	0	264	1001
08:15	80	228	17	0	325	60	97	29	0	186	16	157	39	0	212	35	213	7	0	255	978
08:30	77	214	19	0	310	47	116	32	0	195	20	143	47	0	210	29	220	6	0	255	970
08:45	77	229	18	0	324	43	93	41	0	177	24	185	65	0	274	32	206	9	0	247	1022
Total Volume	308	893	72	0	1273	213	408	153	0	774	73	625	205	0	903	136	851	34	0	1021	3971
% App Total	24.2%	70.1%	5.7%	0.0%		27.5%	52.7%	19.8%	0.0%		8.1%	69.2%	22.7%	0.0%		13.3%	83.3%	3.3%	0.0%		
PHF	.963	.975	.947	.000	.979	.845	.879	.750	.000	.896	.760	.845	.788	.000	.824	.850	.967	.708	.000	.967	.971

PM PEAK HOUR	El Camino Real Southbound					Ralston Avenue Westbound					El Camino Real Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	59	187	40	0	286	57	156	100	0	313	34	217	52	0	303	74	155	16	0	245	1147
17:15	61	219	33	0	313	78	176	87	0	341	21	263	51	0	335	48	109	14	0	171	1160
17:30	50	200	22	0	272	58	143	86	0	287	31	221	43	0	295	85	141	20	0	246	1100
17:45	45	236	31	0	312	84	147	117	0	348	23	243	55	0	321	58	127	15	0	200	1181
Total Volume	215	842	126	0	1183	277	622	390	0	1289	109	944	201	0	1254	265	532	65	0	862	4588
% App Total	18.2%	71.2%	10.7%	0.0%		21.5%	48.3%	30.3%	0.0%		8.7%	75.3%	16.0%	0.0%		30.7%	61.7%	7.5%	0.0%		
PHF	.881	.892	.788	.000	.945	.824	.884	.833	.000	.926	.801	.897	.914	.000	.936	.779	.858	.813	.000	.876	.971

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-006 Sixth Avenue-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Sixth Avenue Southbound					Ralston Avenue Westbound					Sixth Avenue Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	3	0	7	0	10	6	91	2	0	99	20	1	12	0	33	3	146	52	0	201	343	0
07:15	3	4	24	0	31	2	151	4	0	157	45	3	14	0	62	0	175	83	0	258	508	0
07:30	3	9	64	0	76	1	159	0	0	160	122	11	15	0	148	4	223	115	0	342	726	0
07:45	3	6	53	0	62	3	124	5	0	132	123	10	14	0	147	8	223	126	0	357	698	0
Total	12	19	148	0	179	12	525	11	0	548	310	25	55	0	390	15	767	376	0	1158	2275	0
08:00	5	10	29	0	44	4	138	0	0	142	35	17	20	0	72	10	225	87	0	322	580	0
08:15	5	23	29	0	57	6	110	2	0	118	53	22	17	0	92	16	226	116	0	358	625	0
08:30	6	12	14	0	32	9	138	3	0	150	43	4	17	0	64	6	221	109	0	336	582	0
08:45	4	4	13	0	21	6	112	6	0	124	47	8	14	0	69	4	236	86	0	326	540	0
Total	20	49	85	0	154	25	498	11	0	534	178	51	68	0	297	36	908	398	0	1342	2327	0
14:00	16	6	13	0	35	11	151	3	0	165	52	12	31	0	95	3	128	46	0	177	472	0
14:15	13	7	18	0	38	14	176	2	0	192	60	12	33	0	105	7	144	30	0	181	516	0
14:30	6	6	28	0	40	5	199	7	0	211	66	14	29	0	109	19	194	51	0	264	624	0
14:45	11	23	34	0	68	15	170	7	0	192	84	19	30	0	133	13	187	69	0	269	662	0
Total	46	42	93	0	181	45	696	19	0	760	262	57	123	0	442	42	653	196	0	891	2274	0
15:00	6	6	25	0	37	7	225	8	0	240	84	14	30	0	128	11	182	66	0	259	664	0
15:15	9	17	28	0	54	9	188	11	0	208	70	18	26	0	114	10	172	58	0	240	616	0
15:30	8	10	16	0	34	9	193	6	0	208	62	10	25	0	97	19	177	57	0	253	592	0
15:45	4	10	19	0	33	12	152	5	0	169	81	13	20	0	114	23	176	71	0	270	586	0
Total	27	43	88	0	158	37	758	30	0	825	297	55	101	0	453	63	707	252	0	1022	2458	0
16:00	6	6	15	0	27	13	201	2	0	216	82	19	32	0	133	13	181	57	0	251	627	0
16:15	7	10	19	0	36	13	218	6	0	237	92	20	21	0	133	7	171	52	0	230	636	0
16:30	9	9	25	0	43	7	205	6	0	218	84	17	36	0	137	13	168	61	0	242	640	0
16:45	7	8	14	0	29	21	214	6	0	241	88	22	33	0	143	6	159	70	0	235	648	0
Total	29	33	73	0	135	54	838	20	0	912	346	78	122	0	546	39	679	240	0	958	2551	0
17:00	6	2	16	0	24	15	195	5	0	215	124	34	46	0	204	13	173	61	0	247	690	0
17:15	8	13	26	0	47	7	191	5	0	203	137	24	40	0	201	5	138	57	0	200	651	0
17:30	6	5	18	0	29	8	200	2	0	210	137	46	42	0	225	20	200	69	0	289	753	0
17:45	6	8	31	0	45	4	182	2	0	188	126	41	30	0	197	6	177	65	0	248	678	0
Total	26	28	91	0	145	34	768	14	0	816	524	145	158	0	827	44	688	252	0	984	2772	0
Grand Total	160	214	578	0	952	207	4083	105	0	4395	1917	411	627	0	2955	239	4402	1714	0	6355	14657	0
Apprch %	16.8%	22.5%	60.7%	0.0%		4.7%	92.9%	2.4%	0.0%		64.9%	13.9%	21.2%	0.0%		3.8%	69.3%	27.0%	0.0%			
Total %	1.1%	1.5%	3.9%	0.0%	6.5%	1.4%	27.9%	0.7%	0.0%	30.0%	13.1%	2.8%	4.3%	0.0%	20.2%	1.6%	30.0%	11.7%	0.0%	43.4%	100.0%	

AM PEAK HOUR	Sixth Avenue Southbound					Ralston Avenue Westbound					Sixth Avenue Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	3	9	64	0	76	1	159	0	0	160	122	11	15	0	148	4	223	115	0	342	726
07:45	3	6	53	0	62	3	124	5	0	132	123	10	14	0	147	8	223	126	0	357	698
08:00	5	10	29	0	44	4	138	0	0	142	35	17	20	0	72	10	225	87	0	322	580
08:15	5	23	29	0	57	6	110	2	0	118	53	22	17	0	92	16	226	116	0	358	625
Total Volume	16	48	175	0	239	14	531	7	0	552	333	60	66	0	459	38	897	444	0	1379	2629
% App Total	6.7%	20.1%	73.2%	0.0%		2.5%	96.2%	1.3%	0.0%		72.5%	13.1%	14.4%	0.0%		2.8%	65.0%	32.2%	0.0%		
PHF	.800	.522	.684	.000	.786	.583	.835	.350	.000	.863	.677	.682	.825	.000	.775	.594	.992	.881	.000	.963	.905

PM PEAK HOUR	Sixth Avenue Southbound					Ralston Avenue Westbound					Sixth Avenue Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	6	2	16	0	24	15	195	5	0	215	124	34	46	0	204	13	173	61	0	247	690
17:15	8	13	26	0	47	7	191	5	0	203	137	24	40	0	201	5	138	57	0	200	651
17:30	6	5	18	0	29	8	200	2	0	210	137	46	42	0	225	20	200	69	0	289	753
17:45	6	8	31	0	45	4	182	2	0	188	126	41	30	0	197	6	177	65	0	248	678
Total Volume	26	28	91	0	145	34	768	14	0	816	524	145	158	0	827	44	688	252	0	984	2772
% App Total	17.9%	19.3%	62.8%	0.0%		4.2%	94.1%	1.7%	0.0%		63.4%	17.5%	19.1%	0.0%		4.5%	69.9%	25.6%	0.0%		
PHF	.813	.538	.734	.000	.771	.567	.960	.700	.000	.949	.956	.788	.859	.000	.919	.550	.860	.913	.000	.851	.920

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-007 South Road-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	South Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	10	0	2	0	12	0	106	0	0	106	0	0	0	0	0	1	194	0	0	195	313	0
07:15	18	0	5	0	23	0	225	2	0	227	0	0	0	0	0	2	255	0	0	257	507	0
07:30	22	0	19	0	41	0	307	3	0	310	0	0	0	0	0	3	342	0	0	345	696	0
07:45	28	0	22	0	50	0	317	9	0	326	0	0	0	0	0	1	349	0	0	350	726	0
Total	78	0	48	0	126	0	955	14	0	969	0	0	0	0	0	7	1140	0	0	1147	2242	0
08:00	12	0	8	0	20	0	225	9	0	234	0	0	0	0	0	4	337	0	0	341	595	0
08:15	22	0	3	0	25	0	200	5	0	205	0	0	0	0	0	1	338	0	0	339	569	0
08:30	20	0	3	0	23	0	177	9	0	186	0	0	0	0	0	0	339	0	0	339	548	0
08:45	17	0	3	0	20	0	179	2	0	181	0	0	0	0	0	1	315	0	0	316	517	0
Total	71	0	17	0	88	0	781	25	0	806	0	0	0	0	0	6	1329	0	0	1335	2229	0
14:00	10	0	4	0	14	0	212	9	0	221	0	0	0	0	0	1	181	0	0	182	417	0
14:15	5	0	2	0	7	0	259	6	0	265	0	0	0	0	0	3	187	0	0	190	462	0
14:30	10	0	6	0	16	0	281	14	0	295	0	0	0	0	0	2	295	0	0	297	608	0
14:45	7	0	4	0	11	0	304	13	0	317	0	0	0	0	0	5	259	0	0	264	592	0
Total	32	0	16	0	48	0	1056	42	0	1098	0	0	0	0	0	11	922	0	0	933	2079	0
15:00	10	0	0	0	10	0	322	10	0	332	0	0	0	0	0	3	253	0	0	256	598	0
15:15	9	0	4	0	13	0	308	11	0	319	0	0	0	0	0	4	295	0	0	299	631	0
15:30	5	0	3	0	8	0	242	12	0	254	0	0	0	0	0	8	260	0	0	268	530	0
15:45	11	0	4	0	15	0	257	15	0	272	0	0	0	0	0	1	248	0	0	249	536	0
Total	35	0	11	0	46	0	1129	48	0	1177	0	0	0	0	0	16	1056	0	0	1072	2295	0
16:00	4	0	7	0	11	0	299	12	0	311	0	0	0	0	0	3	241	0	0	244	566	0
16:15	6	0	5	0	11	0	295	7	0	302	0	0	0	0	0	2	206	0	0	208	521	0
16:30	8	0	3	0	11	0	312	13	0	325	0	0	0	0	0	3	239	0	0	242	578	0
16:45	12	0	3	0	15	0	291	12	0	303	0	0	0	0	0	2	233	0	0	235	553	0
Total	30	0	18	0	48	0	1197	44	0	1241	0	0	0	0	0	10	919	0	0	929	2218	0
17:00	9	0	1	0	10	0	304	12	0	316	0	0	0	0	0	3	225	0	0	228	554	0
17:15	5	0	3	0	8	0	323	15	0	338	0	0	0	0	0	8	221	0	0	229	575	0
17:30	11	0	5	0	16	0	323	15	0	338	0	0	0	0	0	4	268	0	0	272	626	0
17:45	15	0	1	0	16	0	314	16	0	330	0	0	0	0	0	6	241	0	0	247	593	0
Total	40	0	10	0	50	0	1264	58	0	1322	0	0	0	0	0	21	955	0	0	976	2348	0
Grand Total	286	0	120	0	406	0	6382	231	0	6613	0	0	0	0	0	71	6321	0	0	6392	13411	0
Apprch %	70.4%	0.0%	29.6%	0.0%		0.0%	96.5%	3.5%	0.0%		0.0%	0.0%	0.0%	0.0%		1.1%	98.9%	0.0%	0.0%			
Total %	2.1%	0.0%	0.9%	0.0%	3.0%	0.0%	47.6%	1.7%	0.0%	49.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	47.1%	0.0%	0.0%	47.7%	100.0%	

AM PEAK HOUR	South Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	22	0	19	0	41	0	307	3	0	310	0	0	0	0	0	3	342	0	0	345	696
07:45	28	0	22	0	50	0	317	9	0	326	0	0	0	0	0	1	349	0	0	350	726
08:00	12	0	8	0	20	0	225	9	0	234	0	0	0	0	0	4	337	0	0	341	595
08:15	22	0	3	0	25	0	200	5	0	205	0	0	0	0	0	1	338	0	0	339	569
Total Volume	84	0	52	0	136	0	1049	26	0	1075	0	0	0	0	0	9	1366	0	0	1375	2586
% App Total	61.8%	0.0%	38.2%	0.0%		0.0%	97.6%	2.4%	0.0%		0.0%	0.0%	0.0%	0.0%		0.7%	99.3%	0.0%	0.0%		
PHF	.750	.000	.591	.000	.680	.000	.827	.722	.000	.824	.000	.000	.000	.000	.000	.563	.979	.000	.000	.982	.890

PM PEAK HOUR	South Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	10	0	6	0	16	0	281	14	0	295	0	0	0	0	0	2	295	0	0	297	608
14:45	7	0	4	0	11	0	304	13	0	317	0	0	0	0	0	5	259	0	0	264	592
15:00	10	0	0	0	10	0	322	10	0	332	0	0	0	0	0	3	253	0	0	256	598
15:15	9	0	4	0	13	0	308	11	0	319	0	0	0	0	0	4	295	0	0	299	631
Total Volume	36	0	14	0	50	0	1215	48	0	1263	0	0	0	0	0	14	1102	0	0	1116	2429
% App Total	72.0%	0.0%	28.0%	0.0%		0.0%	96.2%	3.8%	0.0%		0.0%	0.0%	0.0%	0.0%		1.3%	98.7%	0.0%	0.0%		
PHF	.900	.000	.583	.000	.781	.000	.943	.857	.000	.951	.000	.000	.000	.000	.000	.700	.934	.000	.000	.933	.962

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-008 Notre Dame University Road-Ralston Avenue.
Date : 2/13/2014

Unshifted Count = All Vehicles

	Notre Dame University Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	1	0	1	0	104	1	0	105	0	0	0	0	0	3	194	0	0	197	303	0
07:15	2	0	2	0	4	0	211	13	0	224	0	0	0	0	0	6	270	0	0	276	504	0
07:30	5	0	13	0	18	0	312	14	0	326	0	0	0	0	0	5	332	0	0	337	681	0
07:45	28	0	38	0	66	0	293	35	0	328	0	0	0	0	0	11	320	0	0	331	725	0
Total	35	0	54	0	89	0	920	63	0	983	0	0	0	0	0	25	1116	0	0	1141	2213	0
08:00	35	0	26	0	61	0	202	34	0	236	0	0	0	0	0	12	314	0	0	326	623	0
08:15	3	0	5	0	8	0	171	21	0	192	0	0	0	0	0	11	343	0	0	354	554	0
08:30	9	0	5	0	14	0	161	20	0	181	0	0	0	0	0	11	330	0	0	341	536	0
08:45	13	0	5	0	18	0	165	14	0	179	0	0	0	0	0	12	305	0	0	317	514	0
Total	60	0	41	0	101	0	699	89	0	788	0	0	0	0	0	46	1292	0	0	1338	2227	0
14:00	18	0	13	0	31	0	199	15	0	214	0	0	0	0	0	8	162	0	0	170	415	0
14:15	16	0	4	0	20	0	249	13	0	262	0	0	0	0	0	10	176	0	0	186	468	0
14:30	23	0	15	0	38	0	232	29	0	261	0	0	0	0	0	15	258	0	0	273	572	0
14:45	46	0	39	0	85	0	279	16	0	295	0	0	0	0	0	10	218	0	0	228	608	0
Total	103	0	71	0	174	0	959	73	0	1032	0	0	0	0	0	43	814	0	0	857	2063	0
15:00	26	0	20	0	46	0	299	28	0	327	0	0	0	0	0	12	248	0	0	260	633	0
15:15	28	0	24	0	52	0	281	30	0	311	0	0	0	0	0	14	272	0	0	286	649	0
15:30	19	0	16	0	35	0	231	16	0	247	0	0	0	0	0	7	249	0	0	256	538	0
15:45	11	0	10	0	21	0	242	11	0	253	0	0	0	0	0	8	229	0	0	237	511	0
Total	84	0	70	0	154	0	1053	85	0	1138	0	0	0	0	0	41	998	0	0	1039	2331	0
16:00	16	0	16	0	32	0	291	16	0	307	0	0	0	0	0	8	226	0	0	234	573	0
16:15	16	0	18	0	34	0	284	18	0	302	0	0	0	0	0	8	199	0	0	207	543	0
16:30	20	0	6	0	26	0	285	23	0	308	0	0	0	0	0	8	213	0	0	221	555	0
16:45	20	0	17	0	37	0	265	26	0	291	0	0	0	0	0	12	206	0	0	218	546	0
Total	72	0	57	0	129	0	1125	83	0	1208	0	0	0	0	0	36	844	0	0	880	2217	0
17:00	18	0	16	0	34	0	279	22	0	301	0	0	0	0	0	13	213	0	0	226	561	0
17:15	23	0	19	0	42	0	301	23	0	324	0	0	0	0	0	12	206	0	0	218	584	0
17:30	26	0	16	0	42	0	282	43	0	325	0	0	0	0	0	15	234	0	0	249	616	0
17:45	25	0	22	0	47	0	282	33	0	315	0	0	0	0	0	24	227	0	0	251	613	0
Total	92	0	73	0	165	0	1144	121	0	1265	0	0	0	0	0	64	880	0	0	944	2374	0
Grand Total	446	0	366	0	812	0	5900	514	0	6414	0	0	0	0	0	255	5944	0	0	6199	13425	0
Apprch %	54.9%	0.0%	45.1%	0.0%		0.0%	92.0%	8.0%	0.0%		0.0%	0.0%	0.0%	0.0%		4.1%	95.9%	0.0%	0.0%			
Total %	3.3%	0.0%	2.7%	0.0%	6.0%	0.0%	43.9%	3.8%	0.0%	47.8%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	44.3%	0.0%	0.0%	46.2%	100.0%	

AM PEAK HOUR	Notre Dame University Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	5	0	13	0	18	0	312	14	0	326	0	0	0	0	0	5	332	0	0	337	681
07:45	28	0	38	0	66	0	293	35	0	328	0	0	0	0	0	11	320	0	0	331	725
08:00	35	0	26	0	61	0	202	34	0	236	0	0	0	0	0	12	314	0	0	326	623
08:15	3	0	5	0	8	0	171	21	0	192	0	0	0	0	0	11	343	0	0	354	554
Total Volume	71	0	82	0	153	0	978	104	0	1082	0	0	0	0	0	39	1309	0	0	1348	2583
% App Total	46.4%	0.0%	53.6%	0.0%		0.0%	90.4%	9.6%	0.0%		0.0%	0.0%	0.0%	0.0%		2.9%	97.1%	0.0%	0.0%		
PHF	.507	.000	.539	.000	.580	.000	.784	.743	.000	.825	.000	.000	.000	.000	.000	.813	.954	.000	.000	.952	.891

PM PEAK HOUR	Notre Dame University Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	23	0	15	0	38	0	232	29	0	261	0	0	0	0	0	15	258	0	0	273	572
14:45	46	0	39	0	85	0	279	16	0	295	0	0	0	0	0	10	218	0	0	228	608
15:00	26	0	20	0	46	0	299	28	0	327	0	0	0	0	0	12	248	0	0	260	633
15:15	28	0	24	0	52	0	281	30	0	311	0	0	0	0	0	14	272	0	0	286	649
Total Volume	123	0	98	0	221	0	1091	103	0	1194	0	0	0	0	0	51	996	0	0	1047	2462
% App Total	55.7%	0.0%	44.3%	0.0%		0.0%	91.4%	8.6%	0.0%		0.0%	0.0%	0.0%	0.0%		4.9%	95.1%	0.0%	0.0%		
PHF	.668	.000	.628	.000	.650	.000	.912	.858	.000	.913	.000	.000	.000	.000	.000	.850	.915	.000	.000	.915	.948

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-009 Chula Vista Drive-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Southbound					Ralston Avenue Westbound					Chula Vista Drive Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	24	81	0	0	105	1	0	14	0	15	0	186	1	0	187	307	0
07:15	0	0	0	0	0	70	136	0	0	206	1	0	32	0	33	0	242	3	0	245	484	0
07:30	0	0	0	0	0	80	235	0	0	315	0	0	50	0	50	0	288	8	0	296	661	0
07:45	0	0	0	0	0	69	271	0	0	340	1	0	75	0	76	0	262	7	0	269	685	0
Total	0	0	0	0	0	243	723	0	0	966	3	0	171	0	174	0	978	19	0	997	2137	0
08:00	0	0	0	0	0	49	183	0	0	232	3	0	98	0	101	0	230	5	0	235	568	0
08:15	0	0	0	0	0	18	155	0	0	173	2	0	62	0	64	0	288	1	0	289	526	0
08:30	0	0	0	0	0	23	147	0	0	170	1	0	25	0	26	0	317	4	0	321	517	0
08:45	0	0	0	0	0	13	152	0	0	165	2	0	24	0	26	0	284	2	0	286	477	0
Total	0	0	0	0	0	103	637	0	0	740	8	0	209	0	217	0	1119	12	0	1131	2088	0
14:00	0	0	0	0	0	23	188	0	0	211	2	0	15	0	17	0	152	1	0	153	381	0
14:15	0	0	0	0	0	35	215	0	0	250	3	0	29	0	32	0	161	3	0	164	446	0
14:30	0	0	0	0	0	42	203	0	0	245	4	0	49	0	53	0	220	5	0	225	523	0
14:45	0	0	0	0	0	44	279	0	0	323	4	0	30	0	34	0	196	7	0	203	560	0
Total	0	0	0	0	0	144	885	0	0	1029	13	0	123	0	136	0	729	16	0	745	1910	0
15:00	0	0	0	0	0	47	270	0	0	317	3	0	42	0	45	0	216	7	0	223	585	0
15:15	0	0	0	0	0	40	270	0	0	310	0	0	54	0	54	0	241	2	0	243	607	0
15:30	0	0	0	0	0	30	214	0	0	244	4	0	51	0	55	0	206	5	0	211	510	0
15:45	0	0	0	0	0	22	228	0	0	250	2	0	25	0	27	0	202	3	0	205	482	0
Total	0	0	0	0	0	139	982	0	0	1121	9	0	172	0	181	0	865	17	0	882	2184	0
16:00	0	0	0	0	0	36	270	0	0	306	5	0	34	0	39	0	192	2	0	194	539	0
16:15	0	0	0	0	0	31	274	0	0	305	3	0	18	0	21	0	195	4	0	199	525	0
16:30	0	0	0	0	0	20	273	0	0	293	2	0	28	0	30	0	190	2	0	192	515	0
16:45	0	0	0	0	0	29	251	0	0	280	2	0	14	0	16	0	205	3	0	208	504	0
Total	0	0	0	0	0	116	1068	0	0	1184	12	0	94	0	106	0	782	11	0	793	2083	0
17:00	0	0	0	0	0	34	265	0	0	299	0	0	38	0	38	0	187	2	0	189	526	0
17:15	0	0	0	0	0	40	279	0	0	319	2	0	19	0	21	0	201	4	0	205	545	0
17:30	0	0	0	0	0	37	263	0	0	300	1	0	31	0	32	0	217	3	0	220	552	0
17:45	0	0	0	0	0	41	265	0	0	306	1	0	28	0	29	0	226	4	0	230	565	0
Total	0	0	0	0	0	152	1072	0	0	1224	4	0	116	0	120	0	831	13	0	844	2188	0
Grand Total	0	0	0	0	0	897	5367	0	0	6264	49	0	885	0	934	0	5304	88	0	5392	12590	0
Apprch %	0.0%	0.0%	0.0%	0.0%		14.3%	85.7%	0.0%	0.0%		5.2%	0.0%	94.8%	0.0%		0.0%	98.4%	1.6%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	7.1%	42.6%	0.0%	0.0%	49.8%	0.4%	0.0%	7.0%	0.0%	7.4%	0.0%	42.1%	0.7%	0.0%	42.8%	100.0%	

AM PEAK HOUR	Southbound					Ralston Avenue Westbound					Chula Vista Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	80	235	0	0	315	0	0	50	0	50	0	288	8	0	296	661
07:45	0	0	0	0	0	69	271	0	0	340	1	0	75	0	76	0	262	7	0	269	685
08:00	0	0	0	0	0	49	183	0	0	232	3	0	98	0	101	0	230	5	0	235	568
08:15	0	0	0	0	0	18	155	0	0	173	2	0	62	0	64	0	288	1	0	289	526
Total Volume	0	0	0	0	0	216	844	0	0	1060	6	0	285	0	291	0	1068	21	0	1089	2440
% App Total	0.0%	0.0%	0.0%	0.0%		20.4%	79.6%	0.0%	0.0%		2.1%	0.0%	97.9%	0.0%		0.0%	98.1%	1.9%	0.0%		
PHF	.000	.000	.000	.000	.000	.675	.779	.000	.000	.779	.500	.000	.727	.000	.720	.000	.927	.656	.000	.920	.891

PM PEAK HOUR	Southbound					Ralston Avenue Westbound					Chula Vista Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	0	0	0	0	0	42	203	0	0	245	4	0	49	0	53	0	220	5	0	225	523
14:45	0	0	0	0	0	44	279	0	0	323	4	0	30	0	34	0	196	7	0	203	560
15:00	0	0	0	0	0	47	270	0	0	317	3	0	42	0	45	0	216	7	0	223	585
15:15	0	0	0	0	0	40	270	0	0	310	0	0	54	0	54	0	241	2	0	243	607
Total Volume	0	0	0	0	0	173	1022	0	0	1195	11	0	175	0	186	0	873	21	0	894	2275
% App Total	0.0%	0.0%	0.0%	0.0%		14.5%	85.5%	0.0%	0.0%		5.9%	0.0%	94.1%	0.0%		0.0%	97.7%	2.3%	0.0%		
PHF	.000	.000	.000	.000	.000	.920	.916	.000	.000	.925	.688	.000	.810	.000	.861	.000	.906	.750	.000	.920	.937

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-010 Notre Dame Avenue-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Notre Dame Avenue Southbound					Ralston Avenue Westbound					Driveway Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	7	0	11	0	18	0	76	2	0	78	0	0	0	0	0	2	174	0	0	176	272	0
07:15	9	0	18	0	27	0	117	1	0	118	0	0	0	0	0	4	260	0	0	264	409	0
07:30	19	0	18	0	37	0	173	9	0	182	0	0	0	0	0	18	312	0	0	330	549	0
07:45	16	0	26	0	42	0	201	28	0	229	0	0	0	0	0	28	296	0	0	324	595	0
Total	51	0	73	0	124	0	567	40	0	607	0	0	0	0	0	52	1042	0	0	1094	1825	0
08:00	5	0	19	0	24	0	170	16	0	186	0	0	0	0	0	6	235	0	0	241	451	0
08:15	4	0	16	0	20	0	148	7	0	155	0	0	0	0	0	9	270	0	0	279	454	0
08:30	11	0	17	0	28	0	142	5	0	147	0	0	0	0	0	12	310	0	0	322	497	0
08:45	5	0	15	0	20	0	135	11	0	146	0	0	0	0	0	11	283	0	0	294	460	0
Total	25	0	67	0	92	0	595	39	0	634	0	0	0	0	0	38	1098	0	0	1136	1862	0
14:00	8	0	10	0	18	0	169	14	0	183	0	0	0	0	0	9	141	0	0	150	351	0
14:15	3	0	8	0	11	0	198	18	0	216	0	0	0	0	0	15	158	0	0	173	400	0
14:30	6	0	4	0	10	0	182	23	0	205	0	0	0	0	0	23	211	1	0	235	450	0
14:45	13	0	17	0	30	0	250	20	0	270	0	0	0	0	0	12	191	0	0	203	503	0
Total	30	0	39	0	69	0	799	75	0	874	0	0	0	0	0	59	701	1	0	761	1704	0
15:00	15	0	17	0	32	0	273	13	0	286	0	0	1	0	1	10	186	0	0	196	515	0
15:15	7	0	18	0	25	0	255	14	0	269	0	0	0	0	0	16	243	0	0	259	553	0
15:30	7	0	11	0	18	0	195	7	0	202	0	0	0	0	0	12	183	0	0	195	415	0
15:45	8	0	9	0	17	0	218	17	0	235	0	0	0	0	0	8	191	0	0	199	451	0
Total	37	0	55	0	92	0	941	51	0	992	0	0	1	0	1	46	803	0	0	849	1934	0
16:00	3	0	13	0	16	0	269	14	0	283	0	0	0	0	0	11	188	0	0	199	498	0
16:15	11	0	11	0	22	0	261	19	0	280	0	0	0	0	0	11	189	0	0	200	502	0
16:30	10	0	5	0	15	0	261	7	0	268	0	0	0	0	0	9	180	0	0	189	472	0
16:45	7	0	10	0	17	0	241	10	0	251	0	0	0	0	0	17	186	0	0	203	471	0
Total	31	0	39	0	70	0	1032	50	0	1082	0	0	0	0	0	48	743	0	0	791	1943	0
17:00	3	0	17	0	20	0	251	13	0	264	0	0	0	0	0	14	180	0	0	194	478	0
17:15	8	0	6	0	14	0	258	7	0	265	0	0	0	0	0	19	199	0	0	218	497	0
17:30	7	0	11	0	18	0	263	16	0	279	0	0	0	0	0	20	216	0	0	236	533	0
17:45	4	0	15	0	19	0	248	14	0	262	0	0	0	0	0	6	222	1	0	229	510	0
Total	22	0	49	0	71	0	1020	50	0	1070	0	0	0	0	0	59	817	1	0	877	2018	0
Grand Total	196	0	322	0	518	0	4954	305	0	5259	0	0	1	0	1	302	5204	2	0	5508	11286	0
Apprch %	37.8%	0.0%	62.2%	0.0%		0.0%	94.2%	5.8%	0.0%		0.0%	0.0%	100.0%	0.0%		5.5%	94.5%	0.0%	0.0%			
Total %	1.7%	0.0%	2.9%	0.0%	4.6%	0.0%	43.9%	2.7%	0.0%	46.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	46.1%	0.0%	0.0%	48.8%	100.0%	

AM PEAK HOUR	Notre Dame Avenue Southbound					Ralston Avenue Westbound					Driveway Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	19	0	18	0	37	0	173	9	0	182	0	0	0	0	0	18	312	0	0	330	549
07:45	16	0	26	0	42	0	201	28	0	229	0	0	0	0	0	28	296	0	0	324	595
08:00	5	0	19	0	24	0	170	16	0	186	0	0	0	0	0	6	235	0	0	241	451
08:15	4	0	16	0	20	0	148	7	0	155	0	0	0	0	0	9	270	0	0	279	454
Total Volume	44	0	79	0	123	0	692	60	0	752	0	0	0	0	0	61	1113	0	0	1174	2049
% App Total	35.8%	0.0%	64.2%	0.0%		0.0%	92.0%	8.0%	0.0%		0.0%	0.0%	0.0%	0.0%		5.2%	94.8%	0.0%	0.0%		
PHF	.579	.000	.760	.000	.732	.000	.861	.536	.000	.821	.000	.000	.000	.000	.000	.545	.892	.000	.000	.889	.861

PM PEAK HOUR	Notre Dame Avenue Southbound					Ralston Avenue Westbound					Driveway Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:30 to 15:30																					
Peak Hour For Entire Intersection Begins at 14:30																					
14:30	6	0	4	0	10	0	182	23	0	205	0	0	0	0	0	23	211	1	0	235	450
14:45	13	0	17	0	30	0	250	20	0	270	0	0	0	0	0	12	191	0	0	203	503
15:00	15	0	17	0	32	0	273	13	0	286	0	0	1	0	1	10	186	0	0	196	515
15:15	7	0	18	0	25	0	255	14	0	269	0	0	0	0	0	16	243	0	0	259	553
Total Volume	41	0	56	0	97	0	960	70	0	1030	0	0	1	0	1	61	831	1	0	893	2021
% App Total	42.3%	0.0%	57.7%	0.0%		0.0%	93.2%	6.8%	0.0%		0.0%	0.0%	100.0%	0.0%		6.8%	93.1%	0.1%	0.0%		
PHF	.683	.000	.778	.000	.758	.000	.879	.761	.000	.900	.000	.000	.250	.000	.250	.663	.855	.250	.000	.862	.914

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-011 Alameda de las Pulgas-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Alameda de las Pulgas Southbound					Ralston Avenue Westbound					Alameda de las Pulgas Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	23	19	17	0	59	25	52	5	0	82	60	11	26	0	97	9	118	62	0	189	427	0
07:15	28	45	22	0	95	36	88	7	0	131	90	32	29	0	151	9	211	80	0	300	677	0
07:30	43	49	16	0	108	38	109	4	0	151	124	31	38	0	193	10	208	80	0	298	750	0
07:45	57	63	14	0	134	61	168	14	0	243	123	49	23	0	195	8	232	59	0	299	871	0
Total	151	176	69	0	396	160	417	30	0	607	397	123	116	0	636	36	769	281	0	1086	2725	0
08:00	31	30	14	0	75	38	150	27	0	215	132	46	24	0	202	21	139	20	0	180	672	0
08:15	34	37	14	0	85	28	96	19	0	143	94	49	31	0	174	21	201	65	0	287	689	0
08:30	21	25	11	0	57	22	119	17	0	158	72	46	30	0	148	28	261	79	0	368	731	0
08:45	33	37	23	0	93	27	111	8	0	146	84	39	33	0	156	25	199	64	0	288	683	0
Total	119	129	62	0	310	115	476	71	0	662	382	180	118	0	680	95	800	228	0	1123	2775	0
14:00	23	30	9	0	62	35	102	16	0	153	61	22	28	0	111	21	93	64	0	178	504	0
14:15	27	33	8	0	68	39	110	19	0	168	80	34	34	0	148	21	111	57	0	189	573	0
14:30	28	32	11	0	71	39	111	13	0	163	100	38	49	0	187	19	128	60	0	207	628	0
14:45	19	49	12	0	80	48	152	21	0	221	82	37	35	0	154	19	155	86	0	260	715	0
Total	97	144	40	0	281	161	475	69	0	705	323	131	146	0	600	80	487	267	0	834	2420	0
15:00	26	35	12	0	73	62	181	31	0	274	124	39	26	0	189	28	160	80	0	268	804	0
15:15	28	48	12	0	88	47	160	24	0	231	115	43	31	0	189	25	202	106	0	333	841	0
15:30	26	34	8	0	68	53	139	26	0	218	126	54	33	0	213	26	137	54	0	217	716	0
15:45	19	32	8	0	59	44	132	21	0	197	101	54	29	0	184	25	127	75	0	227	667	0
Total	99	149	40	0	288	206	612	102	0	920	466	190	119	0	775	104	626	315	0	1045	3028	0
16:00	25	38	10	0	73	44	171	38	0	253	78	42	24	0	144	34	137	78	0	249	719	0
16:15	31	43	5	0	79	40	176	23	0	239	122	57	35	0	214	30	150	81	0	261	793	0
16:30	28	41	6	0	75	37	192	24	0	253	97	50	26	0	173	33	141	70	0	244	745	0
16:45	33	47	10	0	90	44	169	20	0	233	91	45	19	0	155	24	174	67	0	265	743	0
Total	117	169	31	0	317	165	708	105	0	978	388	194	104	0	686	121	602	296	0	1019	3000	0
17:00	25	51	9	0	85	40	179	24	0	243	107	49	37	0	193	36	140	87	0	263	784	0
17:15	29	47	3	0	79	50	171	27	0	248	110	54	19	0	183	41	173	92	0	306	816	0
17:30	31	54	8	0	93	38	173	26	0	237	129	61	20	0	210	46	185	101	0	332	872	0
17:45	37	41	12	0	90	46	192	23	0	261	110	57	25	0	192	45	185	101	0	331	874	0
Total	122	193	32	0	347	174	715	100	0	989	456	221	101	0	778	168	683	381	0	1232	3346	0
Grand Total	705	960	274	0	1939	981	3403	477	0	4861	2412	1039	704	0	4155	604	3967	1768	0	6339	17294	0
Apprch %	36.4%	49.5%	14.1%	0.0%		20.2%	70.0%	9.8%	0.0%		58.1%	25.0%	16.9%	0.0%		9.5%	62.6%	27.9%	0.0%			
Total %	4.1%	5.6%	1.6%	0.0%	11.2%	5.7%	19.7%	2.8%	0.0%	28.1%	13.9%	6.0%	4.1%	0.0%	24.0%	3.5%	22.9%	10.2%	0.0%	36.7%	100.0%	

AM PEAK HOUR	Alameda de las Pulgas Southbound					Ralston Avenue Westbound					Alameda de las Pulgas Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	43	49	16	0	108	38	109	4	0	151	124	31	38	0	193	10	208	80	0	298	750
07:45	57	63	14	0	134	61	168	14	0	243	123	49	23	0	195	8	232	59	0	299	871
08:00	31	30	14	0	75	38	150	27	0	215	132	46	24	0	202	21	139	20	0	180	672
08:15	34	37	14	0	85	28	96	19	0	143	94	49	31	0	174	21	201	65	0	287	689
Total Volume	165	179	58	0	402	165	523	64	0	752	473	175	116	0	764	60	780	224	0	1064	2982
% App Total	41.0%	44.5%	14.4%	0.0%		21.9%	69.5%	8.5%	0.0%		61.9%	22.9%	15.2%	0.0%		5.6%	73.3%	21.1%	0.0%		
PHF	.724	.710	.906	.000	.750	.676	.778	.593	.000	.774	.896	.893	.763	.000	.946	.714	.841	.700	.000	.890	.856

PM PEAK HOUR	Alameda de las Pulgas Southbound					Ralston Avenue Westbound					Alameda de las Pulgas Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	25	51	9	0	85	40	179	24	0	243	107	49	37	0	193	36	140	87	0	263	784
17:15	29	47	3	0	79	50	171	27	0	248	110	54	19	0	183	41	173	92	0	306	816
17:30	31	54	8	0	93	38	173	26	0	237	129	61	20	0	210	46	185	101	0	332	872
17:45	37	41	12	0	90	46	192	23	0	261	110	57	25	0	192	45	185	101	0	331	874
Total Volume	122	193	32	0	347	174	715	100	0	989	456	221	101	0	778	168	683	381	0	1232	3346
% App Total	35.2%	55.6%	9.2%	0.0%		17.6%	72.3%	10.1%	0.0%		58.6%	28.4%	13.0%	0.0%		13.6%	55.4%	30.9%	0.0%		
PHF	.824	.894	.667	.000	.933	.870	.931	.926	.000	.947	.884	.906	.682	.000	.926	.913	.923	.943	.000	.928	.957

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-012 Cipriani Boulevard-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Cipriani Boulevard Southbound					Ralston Avenue Westbound					Cipriani Boulevard Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	23	4	71	0	98	3	118	6	0	127	54	3	8	0	65	9	137	5	0	151	441	0
07:15	42	9	83	0	134	1	184	11	0	196	59	3	10	0	72	14	223	17	0	254	656	0
07:30	36	27	87	0	150	0	234	17	0	251	84	7	10	0	101	26	293	79	0	398	900	0
07:45	24	20	124	0	168	1	268	16	0	285	132	9	5	0	146	47	182	64	1	294	893	1
Total	125	60	365	0	550	5	804	50	0	859	329	22	33	0	384	96	835	165	1	1097	2890	1
08:00	22	10	101	0	133	3	259	19	1	282	136	20	1	0	157	65	202	51	3	321	893	4
08:15	38	14	104	0	156	4	181	44	0	229	69	23	6	0	98	76	194	49	2	321	804	2
08:30	44	14	79	0	137	3	160	28	0	191	50	9	9	0	68	32	177	38	1	248	644	1
08:45	38	6	59	0	103	6	178	28	0	212	50	6	5	0	61	22	193	13	3	231	607	3
Total	142	44	343	0	529	16	778	119	1	914	305	58	21	0	384	195	766	151	9	1121	2948	10
14:00	28	2	27	0	57	4	121	29	1	155	16	1	2	0	19	23	115	23	1	162	393	2
14:15	21	1	22	0	44	4	134	50	0	188	23	3	3	0	29	28	139	19	0	186	447	0
14:30	36	4	35	0	75	8	150	34	2	194	28	5	3	0	36	39	154	17	3	213	518	5
14:45	42	3	34	0	79	3	166	37	0	206	19	1	3	0	23	37	183	33	2	255	563	2
Total	127	10	118	0	255	19	571	150	3	743	86	10	11	0	107	127	591	92	6	816	1921	9
15:00	42	6	49	0	97	4	252	39	0	295	29	6	3	0	38	40	229	21	3	293	723	3
15:15	29	10	59	0	98	11	215	41	0	267	33	3	3	0	39	69	238	44	3	354	758	3
15:30	24	5	25	0	54	6	202	36	0	244	17	7	0	0	24	47	154	24	0	225	547	0
15:45	17	5	34	0	56	6	196	32	1	235	16	8	3	0	27	43	188	42	0	273	591	1
Total	112	26	167	0	305	27	865	148	1	1041	95	24	9	0	128	199	809	131	6	1145	2619	7
16:00	33	3	33	0	69	7	170	45	0	222	17	9	3	0	29	41	200	19	0	260	580	0
16:15	36	3	34	0	73	9	205	46	0	260	23	6	6	0	35	57	180	29	2	268	636	2
16:30	30	0	34	0	64	6	231	53	0	290	18	6	2	0	26	47	185	42	0	274	654	0
16:45	21	5	39	0	65	10	205	48	0	263	22	1	7	0	30	63	231	37	0	331	689	0
Total	120	11	140	0	271	32	811	192	0	1035	80	22	18	0	120	208	796	127	2	1133	2559	2
17:00	18	6	21	0	45	7	204	52	0	263	30	3	2	0	35	53	218	44	1	316	659	1
17:15	25	8	41	0	74	11	215	43	0	269	27	1	8	0	36	53	231	45	2	331	710	2
17:30	25	10	27	0	62	11	237	52	0	300	35	7	11	0	53	68	287	59	1	415	830	1
17:45	29	4	31	0	64	11	223	40	0	274	18	6	4	0	28	70	236	65	0	371	737	0
Total	97	28	120	0	245	40	879	187	0	1106	110	17	25	0	152	244	972	213	4	1433	2936	4
Grand Total	723	179	1253	0	2155	139	4708	846	5	5698	1005	153	117	0	1275	1069	4769	879	28	6745	15873	33
Apprch %	33.5%	8.3%	58.1%	0.0%		2.4%	82.6%	14.8%	0.1%		78.8%	12.0%	9.2%	0.0%		15.8%	70.7%	13.0%	0.4%			
Total %	4.6%	1.1%	7.9%	0.0%	13.6%	0.9%	29.7%	5.3%	0.0%	35.9%	6.3%	1.0%	0.7%	0.0%	8.0%	6.7%	30.0%	5.5%	0.2%	42.5%	100.0%	

AM PEAK HOUR	Cipriani Boulevard Southbound					Ralston Avenue Westbound					Cipriani Boulevard Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	36	27	87	0	150	0	234	17	0	251	84	7	10	0	101	26	293	79	0	398	900
07:45	24	20	124	0	168	1	268	16	0	285	132	9	5	0	146	47	182	64	1	294	893
08:00	22	10	101	0	133	3	259	19	1	282	136	20	1	0	157	65	202	51	3	321	893
08:15	38	14	104	0	156	4	181	44	0	229	69	23	6	0	98	76	194	49	2	321	804
Total Volume	120	71	416	0	607	8	942	96	1	1047	421	59	22	0	502	214	871	243	6	1334	3490
% App Total	19.8%	11.7%	68.5%	0.0%		0.8%	90.0%	9.2%	0.1%		83.9%	11.8%	4.4%	0.0%		16.0%	65.3%	18.2%	0.4%		
PHF	.789	.657	.839	.000	.903	.500	.879	.545	.250	.918	.774	.641	.550	.000	.799	.704	.743	.769	.500	.838	.969

PM PEAK HOUR	Cipriani Boulevard Southbound					Ralston Avenue Westbound					Cipriani Boulevard Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	18	6	21	0	45	7	204	52	0	263	30	3	2	0	35	53	218	44	1	316	659
17:15	25	8	41	0	74	11	215	43	0	269	27	1	8	0	36	53	231	45	2	331	710
17:30	25	10	27	0	62	11	237	52	0	300	35	7	11	0	53	68	287	59	1	415	830
17:45	29	4	31	0	64	11	223	40	0	274	18	6	4	0	28	70	236	65	0	371	737
Total Volume	97	28	120	0	245	40	879	187	0	1106	110	17	25	0	152	244	972	213	4	1433	2936
% App Total	39.6%	11.4%	49.0%	0.0%		3.6%	79.5%	16.9%	0.0%		72.4%	11.2%	16.4%	0.0%		17.0%	67.8%	14.9%	0.3%		
PHF	.836	.700	.732	.000	.828	.909	.927	.899	.000	.922	.786	.607	.568	.000	.717	.871	.847	.819	.500	.863	.884

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-013 Davis Drive-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Southbound					Ralston Avenue Westbound					Davis Drive Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	2	235	0	0	237	2	0	2	0	4	0	156	12	0	168	409	0
07:15	0	0	0	0	0	8	309	0	4	321	1	0	4	0	5	0	265	14	0	279	605	4
07:30	0	0	0	0	0	7	400	0	0	407	5	0	2	0	7	0	378	17	0	395	809	0
07:45	0	0	0	0	0	13	484	0	3	500	20	0	5	0	25	0	300	41	0	341	866	3
Total	0	0	0	0	0	30	1428	0	7	1465	28	0	13	0	41	0	1099	84	0	1183	2689	7
08:00	0	0	0	0	0	17	440	0	2	459	33	0	9	0	42	0	325	57	0	382	883	2
08:15	0	0	0	0	0	7	369	0	0	376	31	0	10	0	41	0	288	43	0	331	748	0
08:30	0	0	0	0	0	2	299	0	0	301	5	0	4	0	9	0	236	8	0	244	554	0
08:45	0	0	0	0	0	7	274	0	2	283	3	0	1	0	4	0	226	13	0	239	526	2
Total	0	0	0	0	0	33	1382	0	4	1419	72	0	24	0	96	0	1075	121	0	1196	2711	4
14:00	0	0	0	0	0	4	169	0	0	173	6	0	4	0	10	0	155	7	0	162	345	0
14:15	0	0	0	0	0	3	178	0	1	182	6	0	6	0	12	0	179	8	0	187	381	1
14:30	0	0	0	0	0	3	191	0	1	195	4	0	1	0	5	0	214	3	0	217	417	1
14:45	0	0	0	0	0	13	223	0	0	236	7	0	3	0	10	0	251	11	0	262	508	0
Total	0	0	0	0	0	23	761	0	2	786	23	0	14	0	37	0	799	29	0	828	1651	2
15:00	0	0	0	0	0	28	297	0	0	325	7	0	29	0	36	0	297	8	0	305	666	0
15:15	0	0	0	0	0	9	308	0	2	319	21	0	17	0	38	0	308	12	0	320	677	2
15:30	0	0	0	0	0	2	241	0	2	245	9	0	2	0	11	0	213	3	0	216	472	2
15:45	0	0	0	0	0	3	233	0	1	237	4	0	4	0	8	0	288	3	0	291	536	1
Total	0	0	0	0	0	42	1079	0	5	1126	41	0	52	0	93	0	1106	26	0	1132	2351	5
16:00	0	0	0	0	0	3	220	0	4	227	14	0	6	0	20	0	238	8	0	246	493	4
16:15	0	0	0	0	0	3	256	0	0	259	13	0	4	0	17	0	246	7	0	253	529	0
16:30	0	0	0	0	0	1	269	0	2	272	16	0	5	0	21	0	280	1	0	281	574	2
16:45	0	0	0	0	0	4	257	0	0	261	16	0	8	0	24	0	313	3	0	316	601	0
Total	0	0	0	0	0	11	1002	0	6	1019	59	0	23	0	82	0	1077	19	0	1096	2197	6
17:00	0	0	0	0	0	1	265	0	3	269	23	0	13	0	36	0	300	6	0	306	611	3
17:15	0	0	0	0	0	4	287	0	1	292	18	0	4	0	22	0	356	3	0	359	673	1
17:30	0	0	0	0	0	2	293	0	1	296	13	0	6	0	19	0	389	2	0	391	706	1
17:45	0	0	0	0	0	2	269	0	0	271	8	0	4	0	12	0	360	2	0	362	645	0
Total	0	0	0	0	0	9	1114	0	5	1128	62	0	27	0	89	0	1405	13	0	1418	2635	5
Grand Total	0	0	0	0	0	148	6766	0	29	6943	285	0	153	0	438	0	6561	292	0	6853	14234	29
Apprch %	0.0%	0.0%	0.0%	0.0%		2.1%	97.5%	0.0%	0.4%		65.1%	0.0%	34.9%	0.0%		0.0%	95.7%	4.3%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	47.5%	0.0%	0.2%	48.8%	2.0%	0.0%	1.1%	0.0%	3.1%	0.0%	46.1%	2.1%	0.0%	48.1%	100.0%	

AM PEAK HOUR	Southbound					Ralston Avenue Westbound					Davis Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	7	400	0	0	407	5	0	2	0	7	0	378	17	0	395	809
07:45	0	0	0	0	0	13	484	0	3	500	20	0	5	0	25	0	300	41	0	341	866
08:00	0	0	0	0	0	17	440	0	2	459	33	0	9	0	42	0	325	57	0	382	883
08:15	0	0	0	0	0	7	369	0	0	376	31	0	10	0	41	0	288	43	0	331	748
Total Volume	0	0	0	0	0	44	1693	0	5	1742	89	0	26	0	115	0	1291	158	0	1449	3306
% App Total	0.0%	0.0%	0.0%	0.0%		2.5%	97.2%	0.0%	0.3%		77.4%	0.0%	22.6%	0.0%		0.0%	89.1%	10.9%	0.0%		
PHF	.000	.000	.000	.000	.000	.647	.874	.000	.417	.871	.674	.000	.650	.000	.685	.000	.854	.693	.000	.917	.936

PM PEAK HOUR	Southbound					Ralston Avenue Westbound					Davis Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	1	265	0	3	269	23	0	13	0	36	0	300	6	0	306	611
17:15	0	0	0	0	0	4	287	0	1	292	18	0	4	0	22	0	356	3	0	359	673
17:30	0	0	0	0	0	2	293	0	1	296	13	0	6	0	19	0	389	2	0	391	706
17:45	0	0	0	0	0	2	269	0	0	271	8	0	4	0	12	0	360	2	0	362	645
Total Volume	0	0	0	0	0	9	1114	0	5	1128	62	0	27	0	89	0	1405	13	0	1418	2635
% App Total	0.0%	0.0%	0.0%	0.0%		0.8%	98.8%	0.0%	0.4%		69.7%	0.0%	30.3%	0.0%		0.0%	99.1%	0.9%	0.0%		
PHF	.000	.000	.000	.000	.000	.563	.951	.000	.417	.953	.674	.000	.519	.000	.618	.000	.903	.542	.000	.907	.933

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-014 Ralston Middle School Exit Driveway-Raslton
Date : 2/13/2014

Unshifted Count = All Vehicles

	Southbound					Raslton Avenue Westbound					Ralston Middle School Exit Driveway Northbound					Raslton Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	245	0	0	245	1	0	1	0	2	0	167	0	0	167	414	0
07:15	0	0	0	0	0	0	311	0	0	311	3	0	6	0	9	0	283	0	0	283	603	0
07:30	0	0	0	0	0	0	400	0	0	400	0	0	22	0	22	0	374	0	0	374	796	0
07:45	0	0	0	0	0	0	485	0	0	485	0	0	64	0	64	0	280	0	0	280	829	0
Total	0	0	0	0	0	0	1441	0	0	1441	4	0	93	0	97	0	1104	0	0	1104	2642	0
08:00	0	0	0	0	0	0	450	0	0	450	0	0	121	0	121	0	259	0	0	259	830	0
08:15	0	0	0	0	0	0	423	0	0	423	0	0	72	0	72	0	256	0	0	256	751	0
08:30	0	0	0	0	0	0	293	0	0	293	1	0	7	0	8	0	237	0	0	237	538	0
08:45	0	0	0	0	0	0	284	0	0	284	3	0	2	0	5	0	241	0	0	241	530	0
Total	0	0	0	0	0	0	1450	0	0	1450	4	0	202	0	206	0	993	0	0	993	2649	0
14:00	0	0	0	0	0	0	172	0	0	172	4	0	12	0	16	0	155	0	0	155	343	0
14:15	0	0	0	0	0	0	183	0	0	183	2	0	2	0	4	0	182	0	0	182	369	0
14:30	0	0	0	0	0	0	197	0	0	197	0	0	1	0	1	0	219	0	0	219	417	0
14:45	0	0	0	0	0	0	225	0	0	225	1	0	7	0	8	0	251	0	0	251	484	0
Total	0	0	0	0	0	0	777	0	0	777	7	0	22	0	29	0	807	0	0	807	1613	0
15:00	0	0	0	0	0	0	300	0	0	300	1	0	71	0	72	0	257	0	0	257	629	0
15:15	0	0	0	0	0	0	324	0	0	324	2	0	60	0	62	0	246	0	0	246	632	0
15:30	0	0	0	0	0	0	262	0	0	262	8	0	9	0	17	0	214	0	0	214	493	0
15:45	0	0	0	0	0	0	225	0	0	225	5	0	14	0	19	0	273	0	0	273	517	0
Total	0	0	0	0	0	0	1111	0	0	1111	16	0	154	0	170	0	990	0	0	990	2271	0
16:00	0	0	0	0	0	0	243	0	0	243	6	0	9	0	15	0	240	0	0	240	498	0
16:15	0	0	0	0	0	0	276	0	0	276	9	0	9	0	18	0	257	0	0	257	551	0
16:30	0	0	0	0	0	0	277	0	0	277	5	0	22	0	27	0	256	0	0	256	560	0
16:45	0	0	0	0	0	0	260	0	0	260	5	0	17	0	22	0	287	0	0	287	569	0
Total	0	0	0	0	0	0	1056	0	0	1056	25	0	57	0	82	0	1040	0	0	1040	2178	0
17:00	0	0	0	0	0	0	291	0	0	291	2	0	7	0	9	0	301	0	0	301	601	0
17:15	0	0	0	0	0	0	296	0	0	296	4	0	10	0	14	0	352	0	0	352	662	0
17:30	0	0	0	0	0	0	294	0	0	294	0	0	6	0	6	0	384	0	0	384	684	0
17:45	0	0	0	0	0	0	283	0	0	283	3	0	5	0	8	0	359	0	0	359	650	0
Total	0	0	0	0	0	0	1164	0	0	1164	9	0	28	0	37	0	1396	0	0	1396	2597	0
Grand Total	0	0	0	0	0	0	6999	0	0	6999	65	0	556	0	621	0	6330	0	0	6330	13950	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		10.5%	0.0%	89.5%	0.0%		0.0%	100.0%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.2%	0.0%	0.0%	50.2%	0.5%	0.0%	4.0%	0.0%	4.5%	0.0%	45.4%	0.0%	0.0%	45.4%	100.0%	

AM PEAK HOUR	Southbound					Raslton Avenue Westbound					Ralston Middle School Exit Driveway Northbound					Raslton Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	0	400	0	0	400	0	0	22	0	22	0	374	0	0	374	796
07:45	0	0	0	0	0	0	485	0	0	485	0	0	64	0	64	0	280	0	0	280	829
08:00	0	0	0	0	0	0	450	0	0	450	0	0	121	0	121	0	259	0	0	259	830
08:15	0	0	0	0	0	0	423	0	0	423	0	0	72	0	72	0	256	0	0	256	751
Total Volume	0	0	0	0	0	0	1758	0	0	1758	0	0	279	0	279	0	1169	0	0	1169	3206
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	100.0%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.906	.000	.000	.906	.000	.000	.576	.000	.576	.000	.781	.000	.000	.781	.966

PM PEAK HOUR	Southbound					Raslton Avenue Westbound					Ralston Middle School Exit Driveway Northbound					Raslton Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	291	0	0	291	2	0	7	0	9	0	301	0	0	301	601
17:15	0	0	0	0	0	0	296	0	0	296	4	0	10	0	14	0	352	0	0	352	662
17:30	0	0	0	0	0	0	294	0	0	294	0	0	6	0	6	0	384	0	0	384	684
17:45	0	0	0	0	0	0	283	0	0	283	3	0	5	0	8	0	359	0	0	359	650
Total Volume	0	0	0	0	0	0	1164	0	0	1164	9	0	28	0	37	0	1396	0	0	1396	2597
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		24.3%	0.0%	75.7%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.983	.000	.000	.983	.563	.000	.700	.000	.661	.000	.909	.000	.000	.909	.949

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-015 Ralston Middle School Entrance Driveway-Ral
Date : 2/13/2014

Unshifted Count = All Vehicles

	Southbound					Ralston Avenue Westbound					Ralston Middle School Entrance Driveway Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	6	238	0	0	244	0	0	0	0	0	0	163	4	0	167	411	0
07:15	0	0	0	0	0	11	298	0	0	309	0	0	0	0	0	0	277	5	0	282	591	0
07:30	0	0	0	0	0	28	366	0	0	394	0	0	0	0	0	0	372	14	0	386	780	0
07:45	0	0	0	0	0	67	410	0	0	477	0	0	0	0	0	0	280	28	0	308	785	0
Total	0	0	0	0	0	112	1312	0	0	1424	0	0	0	0	0	0	1092	51	0	1143	2567	0
08:00	0	0	0	0	0	70	392	0	0	462	0	0	0	0	0	0	258	70	0	328	790	0
08:15	0	0	0	0	0	32	422	0	0	454	0	0	0	0	0	0	251	19	0	270	724	0
08:30	0	0	0	0	0	4	288	0	0	292	0	0	0	0	0	0	230	2	0	232	524	0
08:45	0	0	0	0	0	5	281	0	0	286	0	0	0	0	0	0	236	0	0	236	522	0
Total	0	0	0	0	0	111	1383	0	0	1494	0	0	0	0	0	0	975	91	0	1066	2560	0
14:00	0	0	0	0	0	9	182	0	0	191	0	0	0	0	0	0	141	5	0	146	337	0
14:15	0	0	0	0	0	7	166	0	0	173	0	0	0	0	0	0	186	4	0	190	363	0
14:30	0	0	0	0	0	11	192	0	0	203	0	0	0	0	0	0	209	5	0	214	417	0
14:45	0	0	0	0	0	16	210	0	0	226	0	0	0	0	0	0	267	3	0	270	496	0
Total	0	0	0	0	0	43	750	0	0	793	0	0	0	0	0	0	803	17	0	820	1613	0
15:00	0	0	0	0	0	25	277	0	0	302	0	0	0	0	0	0	245	7	0	252	554	0
15:15	0	0	0	0	0	24	296	0	0	320	0	0	0	0	0	0	255	7	0	262	582	0
15:30	0	0	0	0	0	13	272	0	0	285	0	0	0	0	0	0	203	4	0	207	492	0
15:45	0	0	0	0	0	13	220	0	0	233	0	0	0	0	0	0	266	5	0	271	504	0
Total	0	0	0	0	0	75	1065	0	0	1140	0	0	0	0	0	0	969	23	0	992	2132	0
16:00	0	0	0	0	0	10	240	0	0	250	0	0	0	0	0	0	248	3	0	251	501	0
16:15	0	0	0	0	0	13	261	0	0	274	0	0	0	0	0	0	254	7	0	261	535	0
16:30	0	0	0	0	0	15	265	0	0	280	0	0	0	0	0	0	253	4	0	257	537	0
16:45	0	0	0	0	0	20	247	0	0	267	0	0	0	0	0	0	295	9	0	304	571	0
Total	0	0	0	0	0	58	1013	0	0	1071	0	0	0	0	0	0	1050	23	0	1073	2144	0
17:00	0	0	0	0	0	10	272	0	0	282	0	0	0	0	0	0	300	3	0	303	585	0
17:15	0	0	0	0	0	2	294	0	0	296	0	0	0	0	0	0	351	4	0	355	651	0
17:30	0	0	0	0	0	6	289	0	0	295	0	0	0	0	0	0	389	1	0	390	685	0
17:45	0	0	0	0	0	6	266	0	0	272	0	0	0	0	0	0	350	4	0	354	626	0
Total	0	0	0	0	0	24	1121	0	0	1145	0	0	0	0	0	0	1390	12	0	1402	2547	0
Grand Total	0	0	0	0	0	423	6644	0	0	7067	0	0	0	0	0	0	6279	217	0	6496	13563	0
Apprch %	0.0%	0.0%	0.0%	0.0%		6.0%	94.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	96.7%	3.3%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	49.0%	0.0%	0.0%	52.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	46.3%	1.6%	0.0%	47.9%	100.0%	

AM PEAK HOUR	Southbound					Ralston Avenue Westbound					Ralston Middle School Entrance Driveway Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	28	366	0	0	394	0	0	0	0	0	0	372	14	0	386	780
07:45	0	0	0	0	0	67	410	0	0	477	0	0	0	0	0	0	280	28	0	308	785
08:00	0	0	0	0	0	70	392	0	0	462	0	0	0	0	0	0	258	70	0	328	790
08:15	0	0	0	0	0	32	422	0	0	454	0	0	0	0	0	0	251	19	0	270	724
Total Volume	0	0	0	0	0	197	1590	0	0	1787	0	0	0	0	0	0	1161	131	0	1292	3079
% App Total	0.0%	0.0%	0.0%	0.0%		11.0%	89.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	89.9%	10.1%	0.0%		
PHF	.000	.000	.000	.000	.000	.704	.942	.000	.000	.937	.000	.000	.000	.000	.000	.000	.780	.468	.000	.837	.974

PM PEAK HOUR	Southbound					Ralston Avenue Westbound					Ralston Middle School Entrance Driveway Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	10	272	0	0	282	0	0	0	0	0	0	300	3	0	303	585
17:15	0	0	0	0	0	2	294	0	0	296	0	0	0	0	0	0	351	4	0	355	651
17:30	0	0	0	0	0	6	289	0	0	295	0	0	0	0	0	0	389	1	0	390	685
17:45	0	0	0	0	0	6	266	0	0	272	0	0	0	0	0	0	350	4	0	354	626
Total Volume	0	0	0	0	0	24	1121	0	0	1145	0	0	0	0	0	0	1390	12	0	1402	2547
% App Total	0.0%	0.0%	0.0%	0.0%		2.1%	97.9%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	99.1%	0.9%	0.0%		
PHF	.000	.000	.000	.000	.000	.600	.953	.000	.000	.967	.000	.000	.000	.000	.000	.000	.893	.750	.000	.899	.930

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-016 Tahoe Drive-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Southbound					Ralston Avenue Westbound					Tahoe Drive Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	1	234	0	0	235	1	0	4	0	5	0	165	0	0	165	405	0
07:15	0	0	0	0	0	1	295	0	0	296	2	0	2	0	4	0	282	2	0	284	584	0
07:30	0	0	0	0	0	7	354	0	0	361	2	0	15	0	17	0	373	2	0	375	753	0
07:45	0	0	0	0	0	23	383	0	0	406	4	0	10	0	14	0	287	7	0	294	714	0
Total	0	0	0	0	0	32	1266	0	0	1298	9	0	31	0	40	0	1107	11	0	1118	2456	0
08:00	0	0	0	0	0	52	325	0	0	377	5	0	20	0	25	0	299	12	0	311	713	0
08:15	0	0	0	0	0	28	407	0	0	435	8	0	20	0	28	0	241	6	0	247	710	0
08:30	0	0	0	0	0	4	281	0	0	285	0	0	5	0	5	0	232	0	0	232	522	0
08:45	0	0	0	0	0	2	277	0	0	279	0	0	8	0	8	0	224	0	0	224	511	0
Total	0	0	0	0	0	86	1290	0	0	1376	13	0	53	0	66	0	996	18	0	1014	2456	0
14:00	0	0	0	0	0	6	161	0	0	167	2	0	6	0	8	0	149	0	0	149	324	0
14:15	0	0	0	0	0	3	179	0	0	182	0	0	3	0	3	0	175	1	0	176	361	0
14:30	0	0	0	0	0	7	174	0	0	181	1	0	1	0	2	0	229	1	0	230	413	0
14:45	0	0	0	0	0	23	188	0	0	211	1	0	5	0	6	0	253	6	0	259	476	0
Total	0	0	0	0	0	39	702	0	0	741	4	0	15	0	19	0	806	8	0	814	1574	0
15:00	0	0	0	0	0	15	245	0	0	260	7	0	26	0	33	0	242	4	0	246	539	0
15:15	0	0	0	0	0	6	302	0	0	308	5	0	20	0	25	0	227	4	0	231	564	0
15:30	0	0	0	0	0	5	255	0	0	260	2	0	3	0	5	0	218	1	0	219	484	0
15:45	0	0	0	0	0	3	221	0	0	224	1	0	5	0	6	0	273	0	0	273	503	0
Total	0	0	0	0	0	29	1023	0	0	1052	15	0	54	0	69	0	960	9	0	969	2090	0
16:00	0	0	0	0	0	3	232	0	0	235	1	0	4	0	5	0	242	1	0	243	483	0
16:15	0	0	0	0	0	4	262	0	0	266	0	0	5	0	5	0	250	0	0	250	521	0
16:30	0	0	0	0	0	2	259	0	0	261	1	0	7	0	8	0	259	0	0	259	528	0
16:45	0	0	0	0	0	3	252	0	0	255	0	0	0	0	0	0	306	1	0	307	562	0
Total	0	0	0	0	0	12	1005	0	0	1017	2	0	16	0	18	0	1057	2	0	1059	2094	0
17:00	0	0	0	0	0	3	263	0	0	266	5	0	1	0	6	0	294	3	0	297	569	0
17:15	0	0	0	0	0	5	294	0	0	299	1	0	4	0	5	0	359	2	0	361	665	0
17:30	0	0	0	0	0	7	286	0	0	293	0	0	4	0	4	0	378	2	0	380	677	0
17:45	0	0	0	0	0	4	251	0	0	255	0	0	0	0	0	0	355	2	0	357	612	0
Total	0	0	0	0	0	19	1094	0	0	1113	6	0	9	0	15	0	1386	9	0	1395	2523	0
Grand Total	0	0	0	0	0	217	6380	0	0	6597	49	0	178	0	227	0	6312	57	0	6369	13193	0
Apprch %	0.0%	0.0%	0.0%	0.0%		3.3%	96.7%	0.0%	0.0%		21.6%	0.0%	78.4%	0.0%		0.0%	99.1%	0.9%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	48.4%	0.0%	0.0%	50.0%	0.4%	0.0%	1.3%	0.0%	1.7%	0.0%	47.8%	0.4%	0.0%	48.3%	100.0%	

AM PEAK HOUR	Southbound					Ralston Avenue Westbound					Tahoe Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	7	354	0	0	361	2	0	15	0	17	0	373	2	0	375	753
07:45	0	0	0	0	0	23	383	0	0	406	4	0	10	0	14	0	287	7	0	294	714
08:00	0	0	0	0	0	52	325	0	0	377	5	0	20	0	25	0	299	12	0	311	713
08:15	0	0	0	0	0	28	407	0	0	435	8	0	20	0	28	0	241	6	0	247	710
Total Volume	0	0	0	0	0	110	1469	0	0	1579	19	0	65	0	84	0	1200	27	0	1227	2890
% App Total	0.0%	0.0%	0.0%	0.0%		7.0%	93.0%	0.0%	0.0%		22.6%	0.0%	77.4%	0.0%		0.0%	97.8%	2.2%	0.0%		
PHF	.000	.000	.000	.000	.000	.529	.902	.000	.000	.907	.594	.000	.813	.000	.750	.000	.804	.563	.000	.818	.959

PM PEAK HOUR	Southbound					Ralston Avenue Westbound					Tahoe Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	3	263	0	0	266	5	0	1	0	6	0	294	3	0	297	569
17:15	0	0	0	0	0	5	294	0	0	299	1	0	4	0	5	0	359	2	0	361	665
17:30	0	0	0	0	0	7	286	0	0	293	0	0	4	0	4	0	378	2	0	380	677
17:45	0	0	0	0	0	4	251	0	0	255	0	0	0	0	0	0	355	2	0	357	612
Total Volume	0	0	0	0	0	19	1094	0	0	1113	6	0	9	0	15	0	1386	9	0	1395	2523
% App Total	0.0%	0.0%	0.0%	0.0%		1.7%	98.3%	0.0%	0.0%		40.0%	0.0%	60.0%	0.0%		0.0%	99.4%	0.6%	0.0%		
PHF	.000	.000	.000	.000	.000	.679	.930	.000	.000	.931	.300	.000	.563	.000	.625	.000	.917	.750	.000	.918	.932

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-017 Belmont Canyon Road-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Belmont Canyon Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	13	0	13	0	26	0	235	3	0	238	0	0	0	0	0	4	153	0	0	157	421	0
07:15	15	0	22	0	37	0	292	6	0	298	0	0	0	0	0	5	265	0	0	270	605	0
07:30	29	0	17	0	46	0	349	4	0	353	0	0	0	0	0	5	349	0	0	354	753	0
07:45	15	0	22	0	37	0	374	9	0	383	0	0	0	0	0	4	277	0	0	281	701	0
Total	72	0	74	0	146	0	1250	22	0	1272	0	0	0	0	0	18	1044	0	0	1062	2480	0
08:00	49	0	40	0	89	0	322	4	4	330	0	0	0	0	0	14	258	0	4	276	695	8
08:15	20	0	37	0	57	0	409	8	0	417	0	0	0	0	0	10	227	0	1	238	712	1
08:30	18	0	26	0	44	0	283	5	0	288	0	0	0	0	0	9	213	0	0	222	554	0
08:45	17	0	18	0	35	0	265	11	0	276	0	0	0	0	0	5	201	0	0	206	517	0
Total	104	0	121	0	225	0	1279	28	4	1311	0	0	0	0	0	38	899	0	5	942	2478	9
14:00	5	0	10	0	15	0	158	10	0	168	0	0	0	0	0	10	143	0	0	153	336	0
14:15	6	0	9	0	15	0	165	12	0	177	0	0	0	0	0	10	173	0	0	183	375	0
14:30	15	0	9	0	24	0	170	9	0	179	0	0	0	0	0	9	218	0	0	227	430	0
14:45	13	0	9	0	22	0	172	10	0	182	0	0	0	0	0	11	244	0	0	255	459	0
Total	39	0	37	0	76	0	665	41	0	706	0	0	0	0	0	40	778	0	0	818	1600	0
15:00	14	0	10	0	24	0	236	8	1	245	0	0	0	0	0	9	234	0	3	246	515	4
15:15	13	0	13	0	26	0	294	16	0	310	0	0	0	0	0	11	215	0	1	227	563	1
15:30	10	0	11	0	21	0	233	11	0	244	0	0	0	0	0	11	210	0	1	222	487	1
15:45	17	0	9	0	26	0	216	7	0	223	0	0	0	0	0	13	253	0	0	266	515	0
Total	54	0	43	0	97	0	979	42	1	1022	0	0	0	0	0	44	912	0	5	961	2080	6
16:00	10	0	5	0	15	0	233	12	0	245	0	0	0	0	0	8	236	0	1	245	505	1
16:15	11	0	9	0	20	0	252	5	0	257	0	0	0	0	0	5	237	0	0	242	519	0
16:30	5	0	10	0	15	0	265	3	0	268	0	0	0	0	0	7	263	0	0	270	553	0
16:45	9	0	8	0	17	0	236	11	0	247	0	0	0	0	0	10	293	0	1	304	568	1
Total	35	0	32	0	67	0	986	31	0	1017	0	0	0	0	0	30	1029	0	2	1061	2145	2
17:00	9	0	6	0	15	0	265	10	0	275	0	0	0	0	0	12	293	0	0	305	595	0
17:15	14	0	7	0	21	0	280	11	0	291	0	0	0	0	0	11	348	0	0	359	671	0
17:30	16	0	10	0	26	0	274	14	0	288	0	0	0	0	0	7	358	0	2	367	681	2
17:45	8	0	7	0	15	0	246	19	0	265	0	0	0	0	0	18	351	0	1	370	650	1
Total	47	0	30	0	77	0	1065	54	0	1119	0	0	0	0	0	48	1350	0	3	1401	2597	3
Grand Total	351	0	337	0	688	0	6224	218	5	6447	0	0	0	0	0	218	6012	0	15	6245	13380	20
Apprch %	51.0%	0.0%	49.0%	0.0%		0.0%	96.5%	3.4%	0.1%		0.0%	0.0%	0.0%	0.0%		3.5%	96.3%	0.0%	0.2%			
Total %	2.6%	0.0%	2.5%	0.0%	5.1%	0.0%	46.5%	1.6%	0.0%	48.2%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	44.9%	0.0%	0.1%	46.7%	100.0%	

AM PEAK HOUR	Belmont Canyon Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	29	0	17	0	46	0	349	4	0	353	0	0	0	0	0	5	349	0	0	354	753
07:45	15	0	22	0	37	0	374	9	0	383	0	0	0	0	0	4	277	0	0	281	701
08:00	49	0	40	0	89	0	322	4	4	330	0	0	0	0	0	14	258	0	4	276	695
08:15	20	0	37	0	57	0	409	8	0	417	0	0	0	0	0	10	227	0	1	238	712
Total Volume	113	0	116	0	229	0	1454	25	4	1483	0	0	0	0	0	33	1111	0	5	1149	2861
% App Total	49.3%	0.0%	50.7%	0.0%		0.0%	98.0%	1.7%	0.3%		0.0%	0.0%	0.0%	0.0%		2.9%	96.7%	0.0%	0.4%		
PHF	.577	.000	.725	.000	.643	.000	.889	.694	.250	.889	.000	.000	.000	.000	.000	.589	.796	.000	.313	.811	.950

PM PEAK HOUR	Belmont Canyon Road Southbound					Ralston Avenue Westbound					Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	9	0	6	0	15	0	265	10	0	275	0	0	0	0	0	12	293	0	0	305	595
17:15	14	0	7	0	21	0	280	11	0	291	0	0	0	0	0	11	348	0	0	359	671
17:30	16	0	10	0	26	0	274	14	0	288	0	0	0	0	0	7	358	0	2	367	681
17:45	8	0	7	0	15	0	246	19	0	265	0	0	0	0	0	18	351	0	1	370	650
Total Volume	47	0	30	0	77	0	1065	54	0	1119	0	0	0	0	0	48	1350	0	3	1401	2597
% App Total	61.0%	0.0%	39.0%	0.0%		0.0%	95.2%	4.8%	0.0%		0.0%	0.0%	0.0%	0.0%		3.4%	96.4%	0.0%	0.2%		
PHF	.734	.000	.750	.000	.740	.000	.951	.711	.000	.961	.000	.000	.000	.000	.000	.667	.943	.000	.375	.947	.953

ALL TRAFFIC DATA

City of Belmont
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7069-018 Hallmark Drive-Ralston Avenue.ppd
Date : 2/13/2014

Unshifted Count = All Vehicles

	Southbound					Ralston Avenue Westbound					Hallmark Drive Northbound					Ralston Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	5	249	0	0	254	14	0	10	0	24	0	149	6	0	155	433	0
07:15	0	0	0	0	0	13	299	0	0	312	30	0	25	0	55	0	249	13	0	262	629	0
07:30	0	0	0	0	0	19	364	0	0	383	49	0	50	0	99	0	317	16	0	333	815	0
07:45	0	0	0	0	0	38	374	0	0	412	59	0	40	0	99	0	242	30	0	272	783	0
Total	0	0	0	0	0	75	1286	0	0	1361	152	0	125	0	277	0	957	65	0	1022	2660	0
08:00	0	0	0	0	0	87	295	0	0	382	60	0	67	0	127	0	200	29	0	229	738	0
08:15	0	0	0	0	0	69	373	0	0	442	83	0	71	0	154	0	166	31	0	197	793	0
08:30	0	0	0	0	0	20	315	0	0	335	59	0	56	0	115	0	176	18	0	194	644	0
08:45	0	0	0	0	0	9	276	0	0	285	41	0	28	0	69	0	186	16	0	202	556	0
Total	0	0	0	0	0	185	1259	0	0	1444	243	0	222	0	465	0	728	94	0	822	2731	0
14:00	0	0	0	0	0	30	133	0	0	163	17	0	18	0	35	0	141	33	0	174	372	0
14:15	0	0	0	0	0	41	135	0	0	176	20	0	18	0	38	0	177	30	0	207	421	0
14:30	0	0	0	0	0	41	135	0	0	176	25	0	51	0	76	0	175	40	0	215	467	0
14:45	0	0	0	0	0	29	149	0	0	178	19	0	40	0	59	0	219	29	0	248	485	0
Total	0	0	0	0	0	141	552	0	0	693	81	0	127	0	208	0	712	132	0	844	1745	0
15:00	0	0	0	0	0	45	204	0	0	249	22	0	38	0	60	0	207	25	0	232	541	0
15:15	0	0	0	0	0	33	289	0	0	322	44	0	59	0	103	0	168	30	0	198	623	0
15:30	0	0	0	0	0	30	219	0	0	249	17	0	25	0	42	0	201	28	0	229	520	0
15:45	0	0	0	0	0	32	196	0	0	228	33	0	34	0	67	0	234	25	0	259	554	0
Total	0	0	0	0	0	140	908	0	0	1048	116	0	156	0	272	0	810	108	0	918	2238	0
16:00	0	0	0	0	0	27	209	0	0	236	27	0	22	0	49	0	229	26	0	255	540	0
16:15	0	0	0	0	0	28	247	0	0	275	28	0	19	0	47	0	225	27	0	252	574	0
16:30	0	0	0	0	0	29	254	0	0	283	19	0	23	0	42	0	250	26	0	276	601	0
16:45	0	0	0	0	0	30	212	0	0	242	16	0	20	0	36	0	291	34	0	325	603	0
Total	0	0	0	0	0	114	922	0	0	1036	90	0	84	0	174	0	995	113	0	1108	2318	0
17:00	0	0	0	0	0	27	244	0	0	271	23	0	25	0	48	0	288	39	0	327	646	0
17:15	0	0	0	0	0	33	246	0	0	279	16	0	38	0	54	0	334	43	0	377	710	0
17:30	0	0	0	0	0	25	258	0	0	283	30	0	33	0	63	0	330	47	0	377	723	0
17:45	0	0	0	0	0	31	238	0	0	269	20	0	26	0	46	0	360	48	0	408	723	0
Total	0	0	0	0	0	116	986	0	0	1102	89	0	122	0	211	0	1312	177	0	1489	2802	0
Grand Total	0	0	0	0	0	771	5913	0	0	6684	771	0	836	0	1607	0	5514	689	0	6203	14494	0
Apprch %	0.0%	0.0%	0.0%	0.0%		11.5%	88.5%	0.0%	0.0%		48.0%	0.0%	52.0%	0.0%		0.0%	88.9%	11.1%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	5.3%	40.8%	0.0%	0.0%	46.1%	5.3%	0.0%	5.8%	0.0%	11.1%	0.0%	38.0%	4.8%	0.0%	42.8%	100.0%	

AM PEAK HOUR	Southbound					Ralston Avenue Westbound					Hallmark Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	19	364	0	0	383	49	0	50	0	99	0	317	16	0	333	815
07:45	0	0	0	0	0	38	374	0	0	412	59	0	40	0	99	0	242	30	0	272	783
08:00	0	0	0	0	0	87	295	0	0	382	60	0	67	0	127	0	200	29	0	229	738
08:15	0	0	0	0	0	69	373	0	0	442	83	0	71	0	154	0	166	31	0	197	793
Total Volume	0	0	0	0	0	213	1406	0	0	1619	251	0	228	0	479	0	925	106	0	1031	3129
% App Total	0.0%	0.0%	0.0%	0.0%		13.2%	86.8%	0.0%	0.0%		52.4%	0.0%	47.6%	0.0%		0.0%	89.7%	10.3%	0.0%		
PHF	.000	.000	.000	.000	.000	.612	.940	.000	.000	.916	.756	.000	.803	.000	.778	.000	.729	.855	.000	.774	.960

PM PEAK HOUR	Southbound					Ralston Avenue Westbound					Hallmark Drive Northbound					Ralston Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	27	244	0	0	271	23	0	25	0	48	0	288	39	0	327	646
17:15	0	0	0	0	0	33	246	0	0	279	16	0	38	0	54	0	334	43	0	377	710
17:30	0	0	0	0	0	25	258	0	0	283	30	0	33	0	63	0	330	47	0	377	723
17:45	0	0	0	0	0	31	238	0	0	269	20	0	26	0	46	0	360	48	0	408	723
Total Volume	0	0	0	0	0	116	986	0	0	1102	89	0	122	0	211	0	1312	177	0	1489	2802
% App Total	0.0%	0.0%	0.0%	0.0%		10.5%	89.5%	0.0%	0.0%		42.2%	0.0%	57.8%	0.0%		0.0%	88.1%	11.9%	0.0%		
PHF	.000	.000	.000	.000	.000	.879	.955	.000	.000	.973	.742	.000	.803	.000	.837	.000	.911	.922	.000	.912	.969

TUBE COUNTS

Corrido Ralston Avenue

Locatio between Davis Drive and Cipriani Drive

Date: 3/3/2014 - 3/7/2014

5-day, 24-hour Mechanical Tube Traffic Counts

Time	Monday																													
	EB															WB														
	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0:00	0	0	0	0	1	1	2	3	3	1	0	0	0	0	11	0	0	0	0	0	1	1	4	0	0	0	0	0	0	6
0:15	0	0	0	0	0	0	1	3	0	1	1	0	0	0	6	0	0	0	0	0	0	5	0	0	0	0	1	0	0	6
0:30	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
0:45	0	0	0	0	0	0	1	2	0	2	0	0	0	0	5	0	0	0	0	0	0	2	2	0	0	0	0	0	0	4
1:00	0	0	0	0	0	0	0	3	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	2	1	2	0	0	1	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:30	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	1	2	1	0	0	0	0	0	0	0	4
1:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
2:00	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
2:15	0	0	0	0	1	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	1	1	1	0	0	0	0	0	0	3
2:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:45	0	0	0	0	0	2	1	1	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
3:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
3:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0	0	0	3
3:45	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3	0	0	0	0	0	0	1	4	0	0	0	0	0	0	5
4:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	5	1	0	1	0	0	0	0	9
4:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	1	2	2	2	0	0	0	0	0	8
4:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	1	1	2	1	0	0	0	0	6
4:45	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3	0	0	0	0	0	1	3	3	2	0	0	0	0	0	9
5:00	0	0	0	0	0	0	1	3	0	2	0	0	0	0	6	0	0	0	0	0	3	7	3	2	0	0	0	0	0	15
5:15	0	0	0	0	0	0	0	4	5	1	1	0	0	0	11	0	0	0	1	1	3	6	10	1	1	0	0	0	0	23
5:30	0	0	0	0	0	2	3	8	2	3	1	0	0	0	19	0	0	0	0	2	5	14	19	4	1	0	0	0	0	45
5:45	0	0	0	0	0	0	3	2	5	2	1	0	0	0	13	0	0	0	0	1	4	11	23	7	0	0	0	0	0	46
6:00	0	0	0	0	0	0	5	7	5	3	1	0	0	0	21	0	0	0	1	0	5	29	25	5	1	0	0	0	0	66
6:15	0	0	0	0	0	0	8	4	14	9	1	0	0	0	36	0	0	0	0	2	13	31	32	10	3	1	0	0	0	92
6:30	0	0	0	0	1	2	10	30	22	11	2	0	0	0	78	0	0	0	0	1	16	41	60	12	3	0	0	0	0	133
6:45	0	0	0	0	0	1	14	50	26	25	1	0	0	0	117	1	0	0	0	5	16	84	58	27	2	0	0	0	0	193
7:00	0	0	0	0	0	10	49	71	34	15	3	2	0	0	184	0	0	0	0	1	42	101	91	24	3	0	0	0	0	262
7:15	0	0	0	1	3	33	104	88	43	19	2	0	0	0	293	0	0	0	1	1	58	140	122	25	3	0	0	0	0	350
7:30	0	0	0	0	9	82	143	97	23	8	1	0	0	0	363	5	3	3	19	57	89	156	74	8	2	0	0	0	0	416
7:45	0	0	0	0	27	100	111	57	17	3	0	0	0	0	315	42	65	48	70	68	90	95	24	2	0	0	0	0	0	504
8:00	0	0	0	0	46	128	102	45	6	0	1	0	0	0	328	73	89	51	74	31	61	81	36	3	2	0	0	0	0	501
8:15	0	0	0	0	20	79	104	62	24	9	2	0	0	0	300	48	29	5	1	18	81	111	50	11	3	0	0	0	0	357
8:30	0	0	0	0	3	29	76	86	37	8	1	0	0	0	240	1	0	0	3	13	74	126	56	9	4	0	0	0	0	286
8:45	0	0	0	0	0	16	62	80	36	14	1	1	0	0	210	0	0	0	2	3	42	130	74	21	2	1	0	0	0	275
9:00	0	0	0	0	1	6	37	84	36	13	0	0	0	0	177	0	0	0	1	8	42	95	43	15	3	0	0	0	0	207
9:15	0	0	0	0	2	16	29	66	36	11	3	0	0	0	163	1	0	0	0	5	31	67	63	14	2	0	0	0	0	183
9:30	0	0	0	0	5	12	39	54	29	10	2	0	0	0	151	0	0	0	0	1	33	64	51	6	2	1	0	0	0	158
9:45	0	1	0	0	0	9	46	59	28	4	2	0	0	0	149	0	0	0	0	3	24	53	46	10	1	1	0	0	0	138
10:00	0	0	0	0	0	18	46	38	17	6	1	0	1	0	127	1	0	0	2	3	18	56	45	9	1	0	0	0	0	135
10:15	0	0	0	0	2	23	43	29	27	8	2	0	0	0	134	0	1	0	2	4	19	76	37	6	7	0	0	0	0	152
10:30	0	0	0	0	1	12	41	50	18	5	1	0	0	0	128	0	0	0	0	2	24	48	52	14	1	1	0	0	0	142
10:45	0	0	0	0	1	14	39	45	17	6	2	0	1	0	125	1	0	0	0	1	23	66	38	8	1	0	0	0	0	138
11:00	0	0	0	0	0	8	43	36	21	3	1	0	0	0	112	0	0	0	0	2	9	41	35	13	4	1	0	0	0	105
11:15	0	0	0	0	0	7	41	40	22	10	2	0	0	0	122	0	0	0	0	2	25	35	42	12	3	1	0	0	0	120
11:30	0	0	0	0	4	5	32	49	19	9	2	0	0	0	120	0	0	0	1	3	17	48	20	5	4	1	0	0	0	99
11:45	0	0	0	0	1	12	43	49	25	7	0	0	0	0	137	0	0	0	1	0	15	48	43	17	0	0	0	0	0	124
12:00	1	0	0	0	4	10	44	50	22	11	0	0	0	0	142	0	0	0	0	7	4	74	51	12	2	0	0	0	0	150
12:15	0	0	0	1	1	16	37	47	25	6	3	0	0	0	136	0	0	1	2	4	28	65	36	9	3	0	0	0	0	148

Corrido Ralston Avenue

5-day, 24-hour Mechanical Tube Traffic Counts

Locatio between Davis Drive and Cipriani Drive

Date: 3/3/2014 - 3/7/2014

Time	Monday																												
	EB															WB													
12:30	0	0	0	0	0	11	49	34	22	10	2	0	0	0	128	1	0	0	1	0	23	68	47	9	1	0	0	0	0	150
12:45	0	0	0	0	1	12	41	56	22	12	1	0	0	0	145	1	0	0	1	5	26	68	38	6	1	0	0	0	0	146
13:00	0	1	0	0	2	17	36	38	26	7	2	0	0	0	129	0	0	0	0	2	19	60	43	9	1	0	0	0	0	134
13:15	0	1	0	0	7	6	38	30	24	7	3	0	0	0	116	0	0	0	0	9	25	47	30	9	5	0	0	0	0	125
13:30	0	0	0	0	0	10	27	50	30	12	2	0	0	0	131	1	0	0	0	2	25	57	42	19	1	0	0	0	0	147
13:45	0	0	0	0	1	15	39	63	21	13	0	0	0	0	152	0	0	0	2	2	24	48	47	10	0	0	0	0	0	133
14:00	0	0	0	0	0	22	46	53	15	8	0	0	0	0	144	0	0	2	1	7	27	64	48	14	2	0	0	0	0	165
14:15	0	0	0	0	1	25	51	43	29	9	4	0	0	0	162	0	0	0	0	8	31	84	51	15	1	0	0	0	0	190
14:30	1	0	0	0	1	21	82	57	22	9	0	0	0	0	193	2	0	0	1	4	35	71	52	16	3	0	0	0	0	184
14:45	0	0	0	17	50	58	74	36	17	1	1	0	0	0	254	0	0	0	2	23	81	106	38	3	2	0	0	0	0	255
15:00	1	0	4	34	65	73	76	41	4	1	0	0	0	0	299	0	2	5	15	48	96	91	46	11	1	0	0	0	0	315
15:15	0	4	6	16	38	56	75	71	17	10	3	0	0	0	296	0	1	3	5	19	89	101	76	11	3	0	0	0	0	308
15:30	0	0	0	1	18	26	62	68	36	9	2	0	0	0	222	1	0	3	3	21	71	96	46	7	4	0	0	0	0	252
15:45	0	0	0	0	3	31	89	91	38	16	1	1	0	0	270	2	0	0	2	0	35	106	59	16	1	0	0	0	0	221
16:00	0	0	0	0	2	21	76	75	39	10	0	0	0	0	223	0	0	0	2	8	41	104	47	7	5	1	0	0	0	215
16:15	0	0	0	0	5	31	100	93	37	12	2	0	0	0	280	0	0	0	3	12	48	112	71	11	2	0	0	0	0	259
16:30	0	0	0	0	1	43	93	80	41	10	1	0	0	0	269	0	0	0	0	18	73	123	68	9	0	0	0	0	0	291
16:45	0	0	0	0	7	37	109	119	36	8	0	0	0	0	316	1	0	0	1	18	78	101	34	7	2	0	0	0	0	242
17:00	1	0	0	0	10	52	122	97	33	10	1	0	0	0	326	0	0	0	0	20	71	109	54	19	0	0	0	0	0	273
17:15	1	1	0	0	26	50	132	109	35	5	0	1	0	0	360	0	0	1	10	25	81	93	52	10	0	1	0	0	0	273
17:30	0	0	0	0	3	56	117	125	61	12	1	0	0	0	375	0	3	2	15	25	63	111	42	9	1	1	0	0	0	272
17:45	1	1	0	2	7	51	107	126	40	8	0	0	0	0	343	0	0	2	10	21	66	98	47	4	5	0	0	0	0	253
18:00	0	0	0	0	2	34	107	107	22	2	0	0	0	0	274	0	0	0	2	20	72	102	28	3	2	0	0	0	0	229
18:15	0	0	0	0	7	41	94	73	28	6	0	0	0	0	249	0	0	2	3	15	54	82	26	9	2	0	0	0	0	193
18:30	0	0	0	0	5	42	75	71	21	9	1	0	0	0	224	1	0	0	4	5	45	70	39	5	2	0	0	0	0	171
18:45	0	0	0	0	0	33	87	56	13	2	0	0	0	0	191	1	0	0	2	7	40	66	25	3	1	0	0	0	0	145

Corrido Ralston Avenue

Locatio between Davis Drive and Cipriani Drive

Date: 3/3/2014 - 3/7/2014

5-day, 24-hour Mechanical Tube Traffic Counts

Time	Monday																												
	EB															WB													
19:00	0	0	0	0	4	28	58	54	23	2	1	0	0	0	170	0	0	0	3	5	26	47	27	8	2	0	0	0	0	118
19:15	0	0	0	0	0	15	57	45	28	8	0	0	0	0	153	0	0	0	2	3	31	40	33	9	1	1	0	0	0	120
19:30	0	0	0	0	1	12	39	40	18	5	1	0	0	0	116	0	0	0	1	4	15	37	28	6	4	0	0	0	0	95
19:45	0	0	0	0	1	8	27	33	15	2	0	0	0	0	86	0	0	0	0	1	13	40	24	5	1	0	0	0	0	84
20:00	0	0	0	0	2	3	26	29	14	1	1	0	0	0	76	0	0	0	0	3	12	35	12	9	4	0	0	0	0	75
20:15	0	0	0	0	1	11	30	35	8	2	0	0	0	0	87	0	0	0	1	3	26	20	20	5	1	0	0	0	0	76
20:30	1	0	0	0	1	11	23	16	13	3	0	0	0	0	68	0	0	0	0	2	8	29	14	2	0	0	0	0	0	55
20:45	0	0	0	0	0	11	18	20	10	4	0	0	0	0	63	0	0	0	1	3	12	27	13	4	1	0	0	0	0	61
21:00	1	0	0	0	2	9	19	12	12	7	0	0	0	0	62	0	0	1	1	9	17	25	15	4	0	0	0	0	0	72
21:15	1	0	0	0	2	6	16	21	10	2	1	0	0	0	59	0	0	0	0	2	11	17	10	6	1	0	0	0	0	47
21:30	0	0	0	0	0	12	9	24	9	1	0	0	0	0	55	0	0	0	2	6	15	14	8	1	0	0	0	0	0	46
21:45	0	0	0	0	0	5	23	10	5	0	0	0	0	0	43	0	0	0	1	1	5	14	8	3	1	0	0	0	0	33
22:00	0	0	0	0	0	8	12	13	5	2	0	0	0	0	40	0	0	0	1	1	8	12	9	3	0	0	0	0	0	34
22:15	1	0	0	0	0	4	13	14	5	0	0	1	0	0	38	0	0	0	1	1	4	20	2	2	0	0	0	0	0	30
22:30	0	0	0	0	0	2	12	10	3	2	0	0	0	0	29	0	0	0	2	1	1	9	3	1	0	0	0	0	0	17
22:45	0	0	0	0	0	3	8	8	6	0	1	0	0	0	26	0	0	0	0	3	2	9	4	2	3	0	0	0	0	23
23:00	0	0	0	0	0	1	4	6	4	2	0	0	0	0	17	0	0	0	0	0	4	2	3	0	0	0	0	0	0	9
23:15	0	0	0	0	0	0	3	7	3	2	0	0	0	0	15	0	0	0	0	1	3	3	3	0	0	1	0	0	0	11
23:30	0	0	0	0	0	1	5	4	3	0	0	0	0	0	13	0	0	0	0	0	1	5	7	1	2	0	0	0	0	16
23:45	0	0	0	0	1	0	1	2	2	2	0	0	0	0	8	1	0	0	0	1	0	1	3	1	0	0	0	0	0	7
Total	10	9	10	72	412	1,679	3,778	3,677	1,573	514	75	7	2	0	11,818	185	193	129	283	645	2,477	4,669	2,821	653	138	13	1	0	0	12,207

Tuesday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
1	0	0	0	0	1	1	4	4	3	0	0	0	0	14	0	0	0	0	0	1	5	0	1	0	0	0	0	0	7
0	0	0	0	0	1	3	3	2	1	0	0	0	0	10	0	0	0	0	0	4	3	2	0	0	0	0	0	0	9
0	0	0	0	0	1	2	1	1	0	0	0	0	0	5	0	0	0	1	1	1	0	0	1	0	0	0	0	0	4
0	0	0	0	0	3	2	3	1	0	0	0	0	0	9	0	0	0	0	1	0	0	2	1	0	0	0	0	0	4
0	0	0	1	1	0	0	2	1	1	0	0	0	0	6	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	6	0	0	0	0	0	0	0	6	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
0	0	0	0	0	1	2	1	0	0	0	0	0	0	4	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1	1	0	0	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	3	0	0	2	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	3
0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	1	5	0	3	0	0	0	0	0	9
0	0	0	0	0	0	1	2	0	0	0	0	0	0	3	0	0	1	0	0	3	2	4	1	0	1	0	0	0	12
0	0	0	0	0	0	4	3	3	1	0	0	0	0	11	0	0	0	0	0	0	4	3	1	1	0	0	0	0	9
0	0	0	0	1	1	3	2	1	1	0	0	0	0	9	0	0	0	0	1	0	5	4	2	0	0	0	0	0	12
0	0	1	0	1	3	1	4	0	1	0	0	0	0	11	0	0	1	0	0	2	6	10	5	0	0	0	0	0	24
0	0	0	0	0	0	3	6	3	1	0	0	0	0	13	0	0	0	0	0	0	9	16	10	4	0	0	0	0	39
0	0	0	0	0	1	3	8	3	0	0	0	0	0	15	0	0	0	0	2	5	10	14	7	6	2	0	0	0	46
0	1	0	0	0	2	4	10	9	2	1	0	0	0	29	0	0	0	0	0	1	16	34	10	8	0	0	0	0	69
0	0	0	0	1	2	12	14	13	4	0	0	0	0	46	0	1	0	0	0	5	9	23	14	8	0	1	0	0	61
0	0	0	0	1	6	22	29	18	9	1	0	0	0	86	0	0	0	0	1	3	23	46	35	11	5	0	0	0	124
0	0	0	0	0	6	32	50	35	5	0	0	0	0	128	0	0	0	0	1	13	35	65	45	12	4	0	0	0	175
0	0	0	0	0	11	62	71	33	4	1	0	0	0	182	0	0	0	0	1	16	57	129	49	14	1	1	0	0	268
1	0	0	0	13	58	111	98	22	5	0	0	0	0	308	2	0	1	1	7	35	99	115	48	7	2	0	0	0	317
0	0	0	2	38	96	140	81	15	2	0	0	0	0	374	0	2	4	40	45	62	141	109	28	2	1	0	0	0	434
0	0	0	1	39	128	108	44	3	0	0	0	0	0	323	29	42	54	84	55	69	84	89	17	3	1	0	0	0	527
0	0	0	0	31	112	108	49	2	0	0	0	0	0	302	74	94	71	122	43	36	56	4	9	1	1	0	0	0	511
0	0	0	0	8	67	115	75	16	5	0	0	0	0	286	71	51	52	73	30	45	34	26	3	1	2	1	0	0	389
0	0	0	0	2	24	99	97	45	6	0	0	0	0	273	0	0	1	0	9	43	114	104	19	4	1	1	0	0	296
0	0	0	0	1	9	53	92	49	12	1	0	0	0	217	2	1	0	3	15	42	88	89	30	10	4	0	0	0	284
0	0	0	0	0	8	56	80	38	9	1	0	0	0	192	1	0	0	0	10	32	78	80	40	8	0	0	0	0	249
0	1	0	0	1	15	58	48	20	12	0	0	0	0	155	0	0	0	0	1	19	78	92	40	16	1	1	0	0	248
0	0	0	0	2	14	62	59	27	4	0	0	0	0	168	0	0	0	0	4	9	54	67	27	10	1	0	0	0	172
0	0	0	0	3	12	53	61	27	5	0	0	0	0	161	0	1	0	2	6	11	31	55	28	6	5	0	0	0	145
0	0	0	0	1	18	57	45	22	4	3	0	0	0	150	0	0	0	3	1	9	39	60	34	4	2	0	0	0	152
0	0	0	1	0	11	50	41	19	2	2	0	0	0	126	1	0	0	0	1	7	30	55	25	7	2	1	0	0	129
0	0	0	0	0	22	45	42	19	1	0	0	0	0	129	0	0	0	2	2	7	39	50	25	7	4	1	0	0	137
0	0	0	1	1	12	53	44	8	0	2	0	0	0	121	0	0	0	0	1	8	37	48	23	7	2	1	0	0	127
0	0	0	2	3	15	42	46	15	4	2	0	0	0	129	0	0	0	1	0	14	30	44	26	9	3	0	0	0	127
0	0	0	0	0	13	60	46	17	5	2	0	0	0	143	0	0	0	1	3	11	36	54	23	6	1	0	0	0	135
0	0	0	0	8	23	54	52	20	2	1	0	0	0	160	0	0	0	1	0	5	37	46	22	10	5	0	0	0	126
1	0	0	0	3	20	69	45	20	4	0	0	0	0	162	0	0	0	1	2	17	30	65	18	9	0	0	0	0	142
0	0	0	0	1	19	67	40	11	3	0	0	0	0	141	0	0	0	2	1	7	40	60	17	8	0	0	0	0	135

Tuesday																													
EB															WB														
0	0	0	0	8	35	82	29	7	3	0	0	0	0	164	0	0	0	2	0	11	39	47	30	12	2	1	0	0	144
0	0	0	0	5	20	53	59	14	5	0	0	0	0	156	0	0	0	0	0	9	42	47	23	11	0	1	0	0	133
0	0	0	0	2	13	78	42	22	3	0	0	0	0	160	0	0	0	0	4	13	39	46	35	11	0	0	0	0	148
0	0	0	0	2	19	44	56	20	1	0	0	0	0	142	0	0	0	1	1	21	44	57	23	6	0	0	0	0	153
0	0	0	0	7	19	54	40	19	2	0	0	0	0	141	0	0	3	1	4	17	32	48	13	6	1	1	0	0	126
1	0	0	1	3	10	51	48	19	4	1	0	0	0	138	0	0	0	1	5	20	46	48	31	3	3	0	0	0	157
0	1	0	0	2	24	42	53	15	8	0	0	0	0	145	0	0	0	1	3	20	54	47	36	7	1	0	0	0	169
1	0	0	0	2	31	73	47	20	6	1	0	0	0	181	0	0	1	0	1	21	59	56	18	7	0	0	0	0	163
0	0	0	0	3	22	83	62	29	9	1	0	0	0	209	1	0	0	0	2	14	64	73	31	10	0	1	0	0	196
1	0	0	0	3	28	105	71	19	3	3	0	0	0	233	0	0	0	2	9	29	66	60	24	7	0	0	0	0	197
0	0	1	17	31	69	88	57	12	4	0	0	0	0	279	0	0	0	3	8	46	81	71	26	6	0	0	0	0	241
11	25	28	21	50	52	48	38	25	3	0	0	0	0	301	0	1	0	9	27	75	111	66	10	6	1	0	0	0	306
34	21	6	13	10	61	96	50	31	9	1	0	0	0	332	1	0	1	7	15	66	101	71	30	5	1	0	0	0	298
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0	0	0	1	10	41	89	91	35	3	0	0	0	0	270	0	0	1	3	10	41	74	61	29	5	1	0	0	0	225
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0	0	0	0	5	42	89	109	22	5	0	0	0	0	272	0	0	0	2	3	25	81	96	30	12	0	1	0	0	250
0	0	0	0	8	52	116	95	27	4	0	0	0	0	302	0	0	0	0	2	46	96	73	23	6	4	0	0	0	250
0	0	0	0	11	48	136	91	23	2	1	0	0	0	312	1	0	0	2	8	42	66	94	23	5	0	1	0	0	242
0	0	0	0	14	51	141	113	17	2	1	0	0	0	339	1	0	0	2	4	37	99	87	28	9	3	0	0	0	270
0	0	0	1	6	73	124	140	27	10	0	0	0	0	381	1	0	0	0	5	41	89	80	41	14	2	1	0	0	274
0	0	0	0	3	56	129	136	37	7	0	0	0	0	368	0	0	0	1	13	56	100	91	25	16	1	0	0	0	303
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0	0	0	0	0	29	105	91	29	2	2	0	0	0	258	0	0	0	0	0	17	66	55	27	9	0	1	0	0	175
0	0	0	0	0	8	80	92	29	4	0	0	0	0	213	0	0	0	0	6	17	48	57	22	10	5	0	0	0	165
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1	0	0	0	0	4	23	57	23	1	0	0	0	0	109	0	0	0	0	3	7	23	55	30	8	0	0	0	0	126
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0	0	0	0	1	3	21	47	13	3	0	0	0	0	88	0	0	0	0	0	8	22	36	19	6	3	1	0	0	95
0	0	0	0	0	4	15	45	20	2	0	0	0	0	86	0	0	0	1	1	6	20	25	11	5	0	0	0	0	69
0	0	0	1	0	6	22	31	13	3	1	0	0	0	77	1	0	0	0	2	6	28	30	6	5	3	0	0	0	81
0	0	0	0	0	5	22	35	11	2	1	0	0	0	76	0	0	0	0	0	7	26	32	12	4	0	0	0	0	81
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0	0	0	0	0	9	13	19	7	5	0	0	0	0	53	0	0	0	0	1	2	10	13	7	1	0	1	0	0	35
0	0	0	0	2	4	3	19	8	1	0	0	0	0	37	0	0	0	0	0	6	6	11	10	2	1	1	0	0	37
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0	0	0	0	0	1	7	8	4	3	2	0	0	0	25	0	0	0	0	1	2	5	17	3	2	0	0	0	0	30
0	0	0	0	0	2	10	6	7	6	0	0	0	0	31	0	0	0	1	0	1	3	4	1	1	0	0	0	0	11
0	0	0	0	0	0	2	6	6	2	0	0	0	0	16	0	0	0	0	0	0	3	8	2	1	0	1	0	0	15
0	0	0	0	1	2	2	6	3	2	0	0	0	0	16	0	0	1	0	0	0	5	3	2	1	0	0	0	0	12
53	49	36	63	377	1,791	4,404	4,124	1,459	319	37	1	1	0	12,714	186	193	197	394	428	1,545	3,592	3,976	1,627	487	97	22	1	0	12,745

Wednesday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0	0	0	0	0	0	5	6	5	0	0	0	0	0	16	0	0	1	0	0	0	2	0	1	0	0	0	0	0	4
0	0	0	0	0	0	0	6	2	0	0	0	0	0	8	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
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0	0	0	0	0	0	3	4	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	1	4	2	1	0	0	0	0	8
0	0	0	0	0	1	0	0	0	2	0	0	0	0	3	0	0	0	0	0	1	0	4	0	0	0	0	0	0	5
0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	1	0	2	1	0	0	0	0	0	0	4
0	0	0	0	0	1	2	1	1	0	0	0	0	0	5	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
0	0	0	0	0	0	0	2	0	1	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
0	0	0	0	0	0	1	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	2	0	0	1	0	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
0	0	0	0	0	0	1	1	2	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2	1	1	0	0	0	0	5
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0	0	0	0	0	0	0	3	1	0	1	0	0	0	5	0	0	0	0	0	1	3	0	2	0	0	0	0	0	6
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0	0	0	0	0	1	4	0	0	0	0	0	0	0	5	0	0	0	0	0	2	3	4	1	3	0	0	0	0	13
0	0	0	0	0	1	3	2	4	0	0	0	0	0	10	0	0	0	0	0	0	5	8	5	1	0	1	0	0	20
0	0	0	0	0	0	3	3	3	0	1	0	0	0	10	0	0	0	0	0	1	4	11	8	3	2	0	0	0	29
0	0	0	0	0	1	4	7	5	0	1	0	0	0	18	0	0	0	0	1	4	6	13	20	5	2	0	0	0	51
0	0	0	0	0	0	2	8	7	7	0	0	0	0	24	0	0	0	1	1	3	8	25	13	3	0	2	0	0	56
0	0	0	0	0	1	2	6	7	8	1	0	0	0	25	0	0	0	1	0	1	21	33	12	4	0	1	0	0	73
0	0	0	0	1	0	11	16	10	9	1	0	0	0	48	0	0	0	0	2	7	16	35	27	12	1	0	0	0	100
0	0	0	0	1	3	15	20	31	10	0	0	0	0	80	0	0	0	1	1	6	22	54	40	4	2	3	0	0	133
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0	0	0	0	1	8	61	41	31	26	0	0	0	0	168	1	0	0	0	1	14	66	109	63	19	1	0	0	0	274
0	0	0	0	0	26	106	101	54	8	0	0	0	0	295	2	1	1	2	4	33	109	125	59	11	1	0	0	0	348
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0	1	0	2	24	107	147	54	4	0	0	0	0	0	339	12	23	43	82	92	93	97	49	9	2	0	0	0	0	502
0	0	0	6	37	118	105	52	10	3	0	0	0	0	331	22	70	54	28	66	62	101	66	8	0	0	0	0	0	477
1	0	0	4	26	56	93	88	23	1	0	0	0	0	292	29	18	4	10	10	35	97	94	34	5	0	0	0	0	336
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1	0	0	2	4	20	46	69	44	15	2	0	0	0	203	0	0	0	2	4	22	89	87	51	15	7	1	0	0	278
0	0	0	0	0	11	36	77	43	5	1	0	0	0	173	1	1	0	0	0	21	38	88	38	12	4	0	0	0	203
0	0	0	0	0	10	57	56	24	9	2	0	0	0	158	0	0	0	1	1	23	48	61	41	10	1	0	0	0	186
0	0	0	2	3	12	62	57	22	3	2	0	0	0	163	1	0	0	3	5	16	55	67	24	6	1	1	0	0	179
0	0	0	1	0	20	52	45	18	5	0	0	0	0	141	0	0	0	0	1	14	43	53	25	7	2	0	0	0	145
0	0	0	1	0	13	55	44	17	3	0	0	0	0	133	0	0	0	0	2	9	37	69	18	6	1	3	0	0	145
0	0	0	0	0	19	41	28	8	8	0	0	0	0	104	0	0	0	1	1	4	35	53	30	9	2	0	0	0	135
0	1	0	1	4	14	49	31	14	1	1	0	0	0	116	0	0	1	1	1	4	35	44	23	8	2	0	0	0	119
0	0	0	0	0	8	36	29	12	5	1	0	0	0	91	0	0	0	0	1	12	36	44	20	8	4	1	0	0	126
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0	0	1	0	1	21	54	49	11	6	0	0	0	0	143	0	0	0	1	1	9	27	53	20	14	1	0	0	0	126
0	0	0	0	4	16	49	53	16	11	2	0	0	0	151	0	0	1	2	3	10	37	52	26	3	0	0	0	0	134
0	0	0	0	2	38	72	44	8	1	0	0	0	0	165	1	1	1	1	8	28	53	48	18	3	4	0	0	0	166
0	0	0	0	13	60	86	20	1	0	1	0	0	0	181	0	0	2	3	11	34	79	50	20	6	2	0	0	0	207

Wednesday																													
EB															WB														
4	4	14	28	53	92	59	19	1	0	0	0	0	0	274	1	0	1	4	22	58	66	46	16	1	0	1	0	0	216
16	17	32	33	55	62	24	17	5	0	0	0	0	0	261	0	3	3	7	9	35	82	43	12	2	0	0	0	0	196
11	12	1	5	18	36	35	28	14	5	1	0	0	0	166	0	0	0	0	8	23	42	65	20	4	0	0	0	0	162
0	0	0	0	1	20	46	40	14	3	0	0	0	0	124	1	0	0	0	5	34	45	66	21	5	1	0	0	0	178
0	0	0	0	1	18	35	49	16	1	0	0	0	0	120	0	0	0	4	0	14	43	70	18	4	1	0	0	0	154
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0	0	0	0	5	47	81	60	25	7	0	0	0	0	225	0	0	0	2	1	15	73	74	30	9	1	0	0	0	205
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0	0	0	0	12	58	137	91	21	3	0	0	0	0	322	0	0	0	1	18	34	86	78	25	8	1	0	0	0	251
0	0	0	0	3	56	125	113	27	6	0	0	0	0	330	0	0	0	3	12	35	118	79	30	2	0	0	0	0	279
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0	0	0	0	0	3	23	30	14	4	1	1	0	0	76	0	0	0	0	0	4	24	29	12	6	1	0	0	0	76
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0	0	0	0	1	2	3	6	1	0	0	0	0	0	13	0	0	0	0	0	1	3	5	2	1	0	0	0	0	12
38	36	50	88	347	1,864	4,524	3,935	1,391	358	42	4	0	0	12,677	78	121	123	228	448	1,493	3,970	4,139	1,743	464	90	21	1	0	12,919

Crystal Spring Upland School

Thursday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0	0	0	0	0	1	11	5	3	0	0	0	0	0	20	0	0	0	0	0	0	1	4	0	2	0	0	0	0	7
0	0	0	0	0	1	4	4	2	0	0	0	0	0	11	0	0	0	1	0	0	1	1	0	0	0	0	0	0	3
0	0	0	0	0	1	4	2	3	1	0	0	0	0	11	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	3	0	1	0	0	0	0	5	0	0	0	0	0	0	1	2	1	1	0	0	0	0	5
0	0	0	0	1	1	1	2	2	0	0	0	1	0	8	0	0	0	1	0	1	2	1	1	1	0	0	0	0	7
0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
0	0	0	0	0	0	3	1	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
0	0	0	0	0	0	1	1	1	0	0	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
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0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
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0	0	0	0	0	0	1	1	1	0	1	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	1	1	2	3	0	0	0	0	0	7
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0	0	0	0	2	2	2	3	2	0	0	0	0	0	11	0	0	0	0	0	0	2	5	6	3	0	1	0	0	17
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1	1	0	0	4	21	45	50	21	10	0	0	0	0	153	0	0	0	0	1	15	33	61	34	5	2	0	0	0	151
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Crystal Spring Upland School

Thursday																													
EB															WB														
1	1	0	0	3	21	48	42	13	2	0	1	0	0	132	1	1	0	1	1	13	54	65	23	10	3	0	0	0	172
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0	0	0	0	7	48	78	54	14	0	0	0	0	0	201	0	0	0	5	3	28	70	52	23	4	0	1	0	0	186
0	0	0	0	14	71	89	29	3	1	0	0	0	0	207	0	0	0	3	9	31	99	56	18	3	1	0	0	0	220
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0	0	0	0	0	7	32	44	26	1	0	0	0	0	110	0	0	0	0	4	3	16	28	10	3	1	1	0	0	66
0	0	0	0	0	4	30	43	11	1	0	0	0	0	89	0	0	0	1	2	7	23	20	17	4	0	0	0	0	74
0	0	0	0	0	3	18	30	11	2	0	0	0	0	64	0	0	0	0	0	4	14	22	17	5	1	1	0	0	64
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0	0	0	0	0	1	4	6	3	0	0	0	0	0	14	0	0	0	0	0	1	4	3	1	2	0	0	0	0	11
35	69	41	79	406	1,888	4,084	4,110	1,537	346	47	4	1	0	12,647	74	116	222	294	478	1,378	3,782	4,081	1,671	472	87	14	1	1	12,671

Friday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
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0	0	0	0	0	1	2	0	2	1	0	0	0	0	6	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
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0	0	0	0	0	0	2	1	1	0	1	0	0	0	5	0	0	0	0	0	0	2	1	1	0	1	1	0	0	6
0	0	0	0	0	0	0	3	2	0	0	0	0	0	5	0	0	0	0	0	0	1	1	1	0	1	0	0	0	4
0	0	0	0	0	0	2	1	1	0	0	0	0	0	4	0	0	0	0	0	0	1	5	3	0	0	0	0	0	9
0	0	0	0	0	1	0	1	2	0	0	0	0	0	4	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
0	0	0	0	1	1	1	3	2	0	0	0	0	0	8	0	0	0	0	0	1	2	3	2	2	0	0	0	0	10
0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	2	2	2	4	1	0	0	0	0	12
0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	0	0	0	0	0	0	1	3	5	2	0	0	0	0	11
0	0	0	0	1	0	3	2	2	0	0	0	0	0	8	0	0	0	0	0	0	5	4	2	3	1	0	0	0	15
0	0	0	0	0	1	0	6	0	1	0	0	0	0	8	0	0	0	0	0	1	4	7	6	2	2	0	0	0	22
0	0	0	0	0	1	7	7	2	2	1	0	0	0	20	0	0	0	0	1	1	10	23	7	4	1	0	0	0	47
0	0	0	0	0	0	6	7	3	3	1	0	0	0	20	0	0	0	0	2	1	12	21	12	4	0	0	0	0	52
0	0	0	0	0	2	3	7	7	1	1	0	0	0	21	0	0	0	0	1	2	7	31	21	4	0	1	0	0	67
0	0	0	0	0	1	5	20	16	5	1	0	0	0	48	0	0	0	0	0	3	14	39	26	12	0	0	0	0	94
0	0	0	0	1	2	9	28	20	8	3	0	0	0	71	0	0	0	0	0	4	19	54	32	10	1	1	0	0	121
0	0	0	0	0	4	17	57	37	7	2	0	0	0	124	1	0	0	0	4	4	28	77	30	12	2	0	0	0	158
0	0	0	0	0	8	61	46	42	11	0	0	0	0	168	0	0	0	0	0	6	61	131	60	8	3	1	0	0	270
0	0	0	0	2	34	109	107	40	4	1	0	0	0	297	0	0	0	2	6	18	111	129	43	19	0	0	0	0	328
0	0	0	1	11	81	175	83	19	3	0	0	0	0	373	10	3	5	14	27	88	125	115	38	6	2	0	0	0	433
0	0	0	0	27	129	106	37	8	0	0	0	0	0	307	12	18	32	52	83	121	95	64	15	9	0	0	0	0	501
0	0	0	1	12	120	110	45	11	3	0	0	0	0	302	15	48	71	87	84	89	56	32	8	3	0	0	0	0	493
0	0	0	0	9	59	78	72	26	5	0	0	0	0	249	7	31	16	12	19	27	89	90	31	5	1	0	0	0	328
0	0	0	0	0	17	59	96	39	5	1	0	0	0	217	1	0	0	0	8	20	69	118	35	10	1	2	0	0	264
0	0	0	0	2	7	56	81	51	8	0	0	0	0	205	0	0	0	0	5	25	67	106	46	14	3	0	0	0	266
0	1	0	4	1	16	43	63	26	12	0	0	0	0	166	0	0	0	0	4	10	53	115	39	11	1	0	0	0	233
0	0	0	0	4	20	36	35	25	10	1	0	0	0	131	1	0	0	0	1	10	67	72	28	7	1	0	0	0	187
0	0	0	1	0	14	33	60	28	7	1	0	0	0	144	0	0	0	0	2	5	62	66	26	13	1	1	0	0	176
0	0	0	0	0	16	47	58	16	5	0	0	0	0	142	0	0	0	0	0	16	54	88	25	8	1	0	0	0	192
0	0	0	0	1	9	50	49	20	6	0	0	0	0	135	0	0	0	0	6	8	43	57	24	9	3	0	0	0	150
0	0	0	0	0	15	38	42	22	6	1	0	0	0	124	0	0	2	4	6	13	43	41	19	9	2	1	0	0	140
0	0	0	0	1	18	45	62	10	3	1	0	0	0	140	0	0	0	0	1	17	45	54	27	8	4	0	0	0	156
0	0	0	1	1	9	48	49	15	2	0	0	0	0	125	0	0	0	2	2	11	53	52	21	8	0	1	0	0	150
0	0	0	0	2	15	48	47	24	5	1	0	0	0	142	0	0	0	3	0	10	51	51	14	8	1	0	0	0	138
0	0	0	0	0	11	44	47	28	6	0	0	0	0	136	0	0	0	1	0	13	26	62	30	9	3	0	0	0	144
0	0	0	0	0	20	64	59	18	8	1	0	0	0	170	0	0	0	0	1	8	35	73	34	7	1	0	0	0	159
0	0	0	0	3	17	73	65	23	3	0	0	0	0	184	0	0	0	1	6	9	50	64	24	8	0	0	0	0	162
0	0	0	0	0	22	70	48	19	4	0	0	0	0	163	0	0	0	0	1	14	57	63	20	6	2	1	0	0	164

Friday																													
EB															WB														
0	0	0	0	2	26	63	54	21	4	2	0	0	0	172	0	0	0	4	4	10	55	53	21	11	2	1	0	0	161
0	0	0	1	0	30	48	56	16	4	0	0	0	0	155	0	0	0	0	1	14	55	56	20	8	3	1	0	0	158
0	0	0	0	2	19	50	44	24	6	0	0	0	0	145	0	0	0	2	6	14	34	70	16	10	1	0	0	0	153
1	0	0	0	0	10	59	63	17	1	2	0	0	0	153	0	0	0	3	2	18	56	59	22	3	0	1	0	0	164
0	0	0	0	2	23	49	51	25	1	1	0	0	0	152	0	0	0	0	4	15	43	80	32	4	1	0	0	0	179
0	0	0	0	0	13	61	59	22	2	1	0	0	0	158	2	0	0	0	4	12	35	78	22	9	1	0	0	0	163
0	0	0	0	4	9	47	59	27	12	0	0	0	0	158	1	0	0	1	0	14	53	63	25	8	3	0	0	0	168
0	0	0	0	0	18	58	49	23	6	0	0	0	0	154	0	0	0	3	1	13	42	73	33	9	2	1	0	0	177
0	0	0	0	4	15	69	72	25	6	1	0	0	0	192	0	1	0	1	8	14	62	87	29	11	1	0	0	0	214
0	0	0	0	0	29	96	88	28	3	0	0	0	0	244	0	0	0	0	8	24	86	88	34	5	1	0	0	0	246
0	0	0	1	48	87	75	57	11	1	2	0	0	0	282	0	0	0	1	22	61	71	61	19	8	1	0	0	0	244
25	26	21	21	59	74	61	26	4	0	0	0	0	0	317	0	1	2	11	30	89	96	59	17	4	0	0	0	0	309
45	14	16	31	31	53	67	38	17	2	0	0	0	0	314	3	0	3	9	16	76	94	71	11	1	0	0	0	0	284
0	0	0	0	3	44	68	104	24	1	1	0	0	0	245	0	0	0	1	6	18	115	83	46	6	0	0	0	0	275
0	0	0	1	17	48	77	105	26	7	0	0	0	0	281	1	0	0	0	0	17	63	110	47	4	2	0	0	0	244
0	0	3	1	6	35	98	98	26	8	1	0	0	0	276	2	0	0	0	4	39	64	82	38	12	1	0	0	0	242
0	0	0	0	1	27	100	98	29	4	2	0	0	0	261	1	0	0	1	18	60	74	66	27	5	5	1	0	0	258
1	0	0	0	1	36	122	100	23	5	2	0	0	0	290	3	1	1	2	9	41	102	82	24	5	2	0	0	0	272
0	0	0	0	1	29	126	120	35	4	0	0	0	0	315	2	0	0	0	3	37	76	104	25	8	4	1	0	0	260
0	0	0	0	9	31	140	111	33	5	0	0	0	0	329	0	0	0	4	17	29	81	83	34	6	0	1	0	0	255
0	0	0	0	7	42	133	147	31	4	0	0	0	0	364	0	0	3	6	9	40	89	81	29	14	1	0	0	0	272
1	0	0	0	1	28	142	167	28	6	1	0	0	0	374	0	0	0	1	9	46	84	85	36	8	2	1	0	0	272
0	0	0	1	7	53	112	131	37	6	1	0	0	0	348	0	0	2	1	4	35	80	97	30	6	1	0	0	0	256
0	0	0	0	3	39	127	139	27	3	1	0	0	0	339	0	0	0	3	10	49	97	76	32	12	0	0	0	0	279
0	0	0	0	10	52	126	85	18	4	0	0	0	0	295	2	0	0	5	18	42	100	64	17	8	3	0	0	0	259
0	0	0	0	0	34	132	91	22	3	0	0	0	0	282	0	0	0	1	4	32	93	70	10	5	0	0	0	0	215
0	0	0	0	1	26	79	97	22	7	0	0	0	0	232	0	1	0	1	3	19	89	51	26	1	1	0	0	0	192
0	0	0	0	0	11	59	79	28	3	1	0	0	0	181	0	0	0	1	3	32	56	68	35	7	2	0	0	0	204
0	0	0	0	2	7	34	69	19	4	0	1	0	0	136	0	4	1	0	5	7	46	87	40	7	2	0	0	0	199
1	0	0	0	3	6	54	56	12	3	1	0	0	0	136	0	0	0	0	1	18	53	66	25	5	6	0	1	0	175
0	0	0	0	0	1	32	47	25	5	1	0	0	0	111	0	0	0	2	3	14	49	41	21	7	1	0	0	0	138
0	0	0	0	2	5	28	46	17	2	1	1	0	0	102	0	0	0	1	1	16	38	43	11	8	2	0	0	0	120
0	0	0	0	1	5	27	41	15	5	1	0	0	0	95	0	0	0	2	4	5	23	32	13	3	1	0	0	0	83
0	0	0	0	0	7	25	33	20	0	0	0	0	0	85	0	0	0	1	1	5	21	32	16	7	4	1	0	0	88
0	0	0	0	0	4	31	21	8	1	0	0	0	0	65	0	0	0	0	0	4	18	35	20	5	1	1	0	0	84
0	0	0	0	0	4	12	31	15	5	0	0	0	0	67	0	0	0	3	1	6	23	24	13	4	2	1	0	1	78
1	0	0	0	0	4	14	34	4	2	0	0	0	0	59	0	0	0	0	0	5	26	25	10	3	1	1	0	0	71
0	0	0	0	0	5	26	34	5	5	0	0	0	0	75	0	0	0	0	0	9	30	23	10	2	1	1	0	0	76
0	0	0	0	1	6	14	29	17	4	0	0	0	0	71	0	0	0	0	2	4	26	30	12	6	1	0	0	1	82
0	0	0	0	1	4	20	26	17	6	0	1	0	0	75	0	0	0	1	0	4	15	18	16	3	1	0	0	0	58
0	0	0	0	0	3	13	26	9	2	1	0	0	0	54	0	0	0	0	2	6	18	13	9	3	2	0	0	0	53
0	0	0	0	0	1	20	17	9	4	0	0	0	0	51	0	0	0	2	2	2	8	10	7	2	0	0	0	0	33
0	0	0	0	0	0	11	16	6	3	1	0	0	0	37	0	0	0	0	3	1	10	9	7	2	0	0	0	0	32
0	0	1	0	0	5	10	21	5	1	0	0	0	0	43	0	0	0	0	0	5	7	14	5	4	0	0	0	0	35
0	0	0	0	2	2	10	13	3	3	0	0	0	0	33	0	0	0	0	0	0	2	11	2	3	0	0	0	0	18
0	0	0	0	0	1	6	10	6	3	0	0	0	0	26	0	0	0	0	1	1	6	9	0	3	0	0	0	0	20
0	0	0	0	0	0	10	5	6	0	0	0	0	0	21	0	0	0	0	0	4	1	8	7	1	0	0	0	0	21
75	41	41	65	311	1,686	4,310	4,393	1,507	327	44	3	0	0	12,803	64	108	139	252	520	1,588	3,897	4,556	1,770	520	105	24	1	2	13,546

Crystal Spring Upland School

Corrido Ralston Avenue 5-day, 24-hour Mechanical Tube Traffic Counts
Locatio between Davis Drive and Cipriani Drive
Date: 3/3/2014 - 3/7/2014

Monday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	11	0	0	0	11	6	0	0	0	6
0:15	6	0	0	0	6	6	0	0	0	6
0:30	3	0	0	0	3	2	0	0	0	2
0:45	5	0	0	0	5	4	0	0	0	4
1:00	4	0	0	0	4	0	0	0	0	0
1:15	6	0	0	0	6	1	0	0	0	1
1:30	4	0	0	0	4	4	0	0	0	4
1:45	1	0	0	0	1	2	0	0	0	2
2:00	3	0	0	0	3	2	0	0	0	2
2:15	3	0	0	0	3	3	0	0	0	3
2:30	2	0	0	0	2	1	0	0	0	1
2:45	5	0	0	0	5	1	0	0	0	1
3:00	2	0	0	0	2	2	0	0	0	2
3:15	1	0	0	0	1	0	0	0	0	0
3:30	1	0	0	0	1	3	0	0	0	3
3:45	3	0	0	0	3	4	0	1	0	5
4:00	1	0	0	0	1	9	0	0	0	9
4:15	1	0	0	0	1	7	0	0	1	8
4:30	1	0	0	0	1	6	0	0	0	6
4:45	3	0	0	0	3	9	0	0	0	9
5:00	6	0	0	0	6	15	0	0	0	15
5:15	11	0	0	0	11	23	0	0	0	23
5:30	19	0	0	0	19	45	0	0	0	45
5:45	13	0	0	0	13	45	0	1	0	46
6:00	21	0	0	0	21	66	0	0	0	66
6:15	35	0	1	0	36	91	0	1	0	92
6:30	75	0	3	0	78	132	0	1	0	133
6:45	117	0	0	0	117	192	0	1	0	193
7:00	182	0	1	1	184	262	0	0	0	262
7:15	291	0	1	1	293	349	1	0	0	350
7:30	362	1	0	0	363	413	0	2	1	416
7:45	312	0	2	1	315	502	0	0	2	504
8:00	325	3	2	0	330	497	1	0	3	501
8:15	294	0	5	1	300	356	0	0	1	357
8:30	240	0	0	0	240	283	1	2	0	286
8:45	207	0	3	0	210	274	0	1	0	275
9:00	176	0	1	0	177	205	0	1	1	207
9:15	159	1	3	0	163	181	0	2	0	183
9:30	150	0	1	0	151	156	0	2	0	158
9:45	148	0	1	0	149	137	1	0	0	138
10:00	125	0	2	0	127	134	0	1	0	135
10:15	133	1	0	0	134	149	1	2	0	152
10:30	127	0	1	0	128	142	0	0	0	142
10:45	124	0	1	0	125	137	1	0	0	138
11:00	111	0	1	0	112	105	0	0	0	105
11:15	120	1	1	0	122	118	0	2	0	120
11:30	118	0	1	1	120	94	0	3	2	99
11:45	135	0	2	0	137	122	1	1	0	124
12:00	141	0	1	0	142	150	0	0	0	150
12:15	134	1	1	0	136	147	0	1	0	148
12:30	128	0	0	0	128	150	0	0	0	150
12:45	143	0	2	0	145	144	1	1	0	146
13:00	128	0	0	1	129	133	0	1	0	134
13:15	115	1	0	0	116	125	0	0	0	125
13:30	131	0	0	0	131	147	0	0	0	147
13:45	150	0	1	1	152	130	1	2	0	133
14:00	144	0	0	0	144	165	0	0	0	165
14:15	159	1	2	0	162	188	0	2	0	190
14:30	192	0	1	0	193	184	0	0	0	184
14:45	250	3	0	1	254	254	0	1	0	255
15:00	296	1	2	0	299	314	1	0	0	315
15:15	289	1	5	1	296	306	1	1	0	308
15:30	221	0	0	1	222	252	0	0	0	252
15:45	268	0	2	0	270	220	0	1	0	221
16:00	222	0	1	0	223	215	0	0	0	215
16:15	278	1	1	0	280	258	1	0	0	259
16:30	269	0	0	0	269	290	0	1	0	291
16:45	316	0	0	0	316	241	0	1	0	242
17:00	324	0	1	1	326	272	0	1	0	273
17:15	359	1	0	0	360	273	0	0	0	273
17:30	375	0	0	0	375	272	0	0	0	272
17:45	342	0	0	1	343	251	0	1	1	253
18:00	274	0	0	0	274	229	0	0	0	229
18:15	248	0	1	0	249	192	1	0	0	193
18:30	224	0	0	0	224	170	0	1	0	171

Tuesday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	5	0	0	0	5	7	0	0	0	7
0:15	10	0	0	0	10	9	0	0	0	9
0:30	5	0	0	0	5	4	0	0	0	4
0:45	9	0	0	0	9	4	0	0	0	4
1:00	6	0	0	0	6	0	0	1	0	1
1:15	6	0	0	0	6	3	0	0	0	3
1:30	2	0	0	0	2	3	0	0	0	3
1:45	4	0	0	0	4	2	0	0	0	2
2:00	1	0	0	0	1	0	0	0	0	0
2:15	3	0	0	0	3	1	0	0	0	1
2:30	5	0	0	0	5	1	0	0	0	1
2:45	3	0	0	0	3	0	0	0	0	0
3:00	1	0	0	0	1	2	0	0	0	2
3:15	2	0	0	0	2	1	0	1	0	2
3:30	2	0	0	0	2	4	0	0	0	4
3:45	0	0	0	0	0	3	0	0	0	3
4:00	3	0	0	0	3	2	0	0	0	2
4:15	2	0	0	0	2	9	0	0	0	9
4:30	3	0	0	0	3	11	0	1	0	12
4:45	11	0	0	0	11	8	0	1	0	9
5:00	9	0	0	0	9	12	0	0	0	12
5:15	11	0	0	0	11	22	0	2	0	24
5:30	13	0	0	0	13	38	0	1	0	39
5:45	15	0	0	0	15	46	0	0	0	46
6:00	29	0	0	0	29	68	0	1	0	69
6:15	46	0	0	0	46	60	1	0	0	61
6:30	84	0	2	0	86	124	0	0	0	124
6:45	126	0	2	0	128	174	1	0	0	175
7:00	182	0	0	0	182	263	1	3	1	268
7:15	305	0	3	0	308	315	1	1	0	317
7:30	372	0	2	0	374	432	1	1	0	434
7:45	323	0	0	0	323	523	0	2	2	527
8:00	298	1	2	1	302	507	0	1	3	511
8:15	282	2	2	0	286	378	1	5	5	389
8:30	271	0	1	1	273	295	1	0	0	296
8:45	213	0	4	0	217	283	0	1	0	284
9:00	191	0	0	1	192	247	0	1	1	249
9:15	150	1	4	0	155	243	2	2	1	248
9:30	168	0	0	0	168	171	0	1	0	172
9:45	158	0	2	1	161	139	1	4	1	145
10:00	148	0	2	0	150	150	0	1	1	152
10:15	124	0	1	1	126	127	0	2	0	129
10:30	128	0	1	0	129	130	0	7	0	137
10:45	119	0	2	0	121	123	1	3	0	127
11:00	126	0	3	0	129	124	0	2	1	127
11:15	141	0	2	0	143	133	0	2	0	135
11:30	157	0	2	1	160	125	0	1	0	126
11:45	159	0	3	0	162	140	0	2	0	142
12:00	141	0	0	0	141	134	0	1	0	135
12:15	163	0	1	0	164	141	0	3	0	144
12:30	155	0	1	0	156	130	0	3	0	133
12:45	159	0	0	1	160	145	0	3	0	148
13:00	141	0	1	0	142	151	1	1	0	153
13:15	138	0	3	0	141	125	0	1	0	126
13:30	138	0	0	0	138	155	1	1	0	157
13:45	145	0	0	0	145	167	1	1	0	169
14:00	181	0	0	0	181	162	0	1	0	163
14:15	208	0	1	0	209	193	1	1	1	196
14:30	229	0	3	1	233	196	0	1	0	197
14:45	278	1	0	0	279	240	0	1	0	241
15:00	295	1	1	4	301	304	0	2	0	306
15:15	321	0	5	6	332	295	1	2	0	298
15:30	221	1	0	0	222	232	0	3	0	235
15:45	268	0	2	0	270	223	1	1	0	225
16:00	261	0	0	0	261	239	0	1	0	240
16:15	270	0	2	0	272	247	1	1	1	250
16:30	301	0	1	0	302	250	0	0	0	250
16:45	310	0	2	0	312	239	1	2	0	242
17:00	338	0	1	0	339	268	0	1	1	270
17:15	378	0	2	1	381	272	1	1	0	274
17:30	368	0	0	0	368	302	0	1	0	303
17:45	336	1	0	0	337	270	1	1	0	272
18:00	291	0	0	0	291	264	0	2	0	266
18:15	304	0	1	0	305	197	1	0	0	198
18:30	258	0	0	0	258	175	0	0	0	175

Wednesday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	16	0	0	0	16	4	0	0	0	4
0:15	8	0	0	0	8	2	0	0	0	2
0:30	6	0	0	0	6	6	0	0	0	6
0:45	7	0	0	0	7	0	0	0	0	0
1:00	2	0	0	0	2	8	0	0	0	8
1:15	3	0	0	0	3	5	0	0	5	10
1:30	2	0	0	0	2	4	0	0	0	4
1:45	4	0	0	1	5	2	0	0	0	2
2:00	4	0	0	0	4	0	0	0	0	0
2:15	0	0	0	0	0	3	0	0	0	3
2:30	3	0	0	0	3	0	0	0	0	0
2:45	3	0	0	0	3	0	1	0	1	2
3:00	4	0	0	0	4	1	0	0	0	1
3:15	0	0	0	0	0	1	0	0	0	1
3:30	1	0	0	0	1	5	0	0	0	5
3:45	3	0	0	0	3	6	0	0	0	6
4:00	6	0	0	0	6	1	0	0	0	1
4:15	5	0	0	0	5	6	0	0	0	6
4:30	4	0	0	0	4	5	0	1	0	6
4:45	5	0	0	0	5	13	0	0	0	13
5:00	10	0	0	0	10	20	0	0	0	20
5:15	10	0	0	0	10	27	0	2	0	29
5:30	18	0	0	0	18	49	0	2	0	51
5:45	24	0	0	0	24	54	0	2	0	56
6:00	25	0	0	0	25	72	0	0	1	73
6:15	47	0	1	0	48	98	0	1	1	100
6:30	79	0	1	0	80	129	0	3	1	133
6:45	105	0	0	2	107	191	1	2	0	194
7:00	166	0	2	0	168	272	0	2	0	274
7:15	294	0	1	0	295	341	1	5	1	348
7:30	355	0	1	0	356	411	0	4	2	417
7:45	337	0	0	2	339	499	0	0	3	502
8:00	328	0	3	0	331	475	0	1	1	477
8:15	288	1	2	1	292	329	1	4	2	336
8:30	259	0	4	0	263	293	0	2	0	295
8:45	199	0	3	1	203	275	2	1	0	278
9:00	173	0	0	0	173	200	0	2	1	203
9:15	156	1	1	0	158	182	1	1	2	186
9:30	160	0	3	0	163	172	0	6	1	179
9:45	141	0	0	0	141	144	1	0	0	145
10:00	131	0	1	1	133	142	0	2	1	145
10:15	101	1	2	0	104	135	0	0	0	135
10:30	116	0	0	0	116	117	0	2	0	119
10:45	91	0	0	0	91	123	1	2	0	126
11:00	104	0	2	1	107	116	0	0	0	116
11:15	141	1	0	1	143	126	0	0	0	126
11:30	151	0	0	0	151	132	0	2	0	134
11:45	165	0	0	0	165	165	1	0	0	166
12:00	181	0	0	0	181	205	1	1	0	207
12:15	271	1	2	0	274	215	0	1	0	216
12:30	255	1	2	3	261	192	1	3	0	196
12:45	157	1	4	4	166	161	0	1	0	162
13:00	121	1	2	0	124	174	1	1	2	178
13:15	117	1	2	0	120	150	0	4	0	154
13:30	160	0	0	0	160	143	0	0	0	143
13:45	150	0	2	0	152	138	1	0	0	139
14:00	165	0	0	0	165	161	0	2	0	163
14:15	177	0	2	0	179	161	1	1	0	163
14:30	195	0	0	1	196	188	1	0	0	189
14:45	224	0	1	0	225	203	1	1	0	205
15:00	306	0	0	1	307	302	0	3	1	306
15:15	300	0	2	1	303	318	0	0	0	318
15:30	254	0	2	0	256	240	0	0	0	240
15:45	262	0	1	0	263	230	1	1	0	232
16:00	275	0	0	1	276	250	0	2	1	253
16:15	267	0	3	1	271	245	1	1	0	247
16:30	275	0	2	0	277	261	0	0	0	261
16:45	321	0	1	0	322	249	1	1	0	251
17:00	330	0	0	0	330	279	0	0	0	279
17:15	357	0	1	0	358	259	1	3	0	263
17:30	385	0	0	0	385	272	0	1	1	274
17:45	366	0	2	0	368	269	1	0	0	270
18:00	346	0	0	0	346	252	0	2	0	254
18:15	276	0	1	0	277	208	0	2	0	210
18:30	222	0	0	0	222	173	1	2	0	176

Thursday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	20	0	0	0	20	7	0	0	0	7
0:15	11	0	0	0	11	3	0	0	0	3
0:30	11	0	0	0	11	1	0	0	0	1
0:45	5	0	0	0	5	5	0	0	0	5
1:00	8	0	0	0	8	7	0	0	0	7
1:15	2	0	0	0	2	2	0	0	2	4
1:30	5	0	0	0	5	1	0	0	0	1
1:45	3	0	0	0	3	1	0	0	0	1
2:00	5	0	0	0	5	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0
2:30	1	0	0	0	1	2	0	0	0	2
2:45	3	0	0	0	3	1	0	0	0	1
3:00	4	0	0	0	4	1	0	0	0	1
3:15	2	0	0	0	2	6	0	1	0	7
3:30	5	0	0	0	5	5	0	0	0	5
3:45	5	0	0	0	5	2	0	0	0	2
4:00	5	0	0	0	5	3	0	0	0	3
4:15	5	0	0	0	5	6	0	0	0	6
4:30	4	0	0	0	4	11	0	1	1	13
4:45	6	0	0	0	6	7	0	0	0	7
5:00	11	0	0	0	11	16	0	0	1	17
5:15	10	0	0	0	10	26	0	0	0	26
5:30	23	0	0	0	23	40	0	2	0	42
5:45	24	0	1	0	25	53	0	1	0	54
6:00	21	0	1	0	22	70	0	1	0	71
6:15	46	0	2	0	48	99	0	0	0	99
6:30	81	0	1	0	82	143	0	1	0	144
6:45	122	0	0	1	123	201	1	0	1	203
7:00	188	0	1	1	190	276	0	2	0	278
7:15	306	0	2	0	308	352	1	1	0	354
7:30	391	0	0	0	391	424	0	1	1	426
7:45	329	0	1	0	330	514	2	2	3	521
8:00	295	1	3	0	299	501	2	2	0	505
8:15	261	2	3	0	266	332	0	3	2	337
8:30	245	0	1	0	246	260	2	1	0	263
8:45	203	2	4	0	209	265	1	1	0	267
9:00	175	0	2	1	178	217	0	3	0	220
9:15	175	0	2	0	177	194	1	2	1	198
9:30	157	0	2	0	159	174	0	3	2	179
9:45	151	0	2	0	153	144	1	6	0	151
10:00	121	0	2	1	124	127	0	4	0	131
10:15	124	2	1	0	127	124	0	2	0	126
10:30	108	0	3	1	112	128	0	2	0	130
10:45	137	0	0	0	137	114	1	0	0	115
11:00	134	0	3	1	138	138	0	2	0	140
11:15	126	0	3	0	129	136	0	3	1	140
11:30	149	0	1	0	150	137	0	0	0	137
11:45	153	0	1	0	154	141	1	2	0	144
12:00	161	0	0	0	161	150	0	2	1	153
12:15	130	0	2	0	132	172	0	0	0	172
12:30	167	1	4	0	172	147	0	2	0	149
12:45	148	0	0	0	148	141	1	3	0	145
13:00	126	0	2	0	128	146	0	1	0	147
13:15	119	0	1	0	120	155	1	1	0	157
13:30	134	0	1	0	135	131	0	1	0	132
13:45	147	0	1	0	148	145	1	0	0	146
14:00	160	0	0	0	160	154	0	1	0	155
14:15	199	0	2	0	201	184	2	0	0	186
14:30	207	0	0	0	207	218	1	1	0	220
14:45	283	1	1	1	286	246	0	1	0	247
15:00	314	0	3	1	318	305	0	3	0	308
15:15	311	0	5	5	321	289	1	2	0	292
15:30	233	0	1	1	235	245	0	4	0	249
15:45	256	0	3	0	259	216	2	0	0	218
16:00	276	0	1	0	277	234	0	0	0	234
16:15	255	0	1	0	256	249	1	0	0	250
16:30	304	0	1	0	305	262	0	1	0	263
16:45	283	0	1	0	284	247	1	3	0	251
17:00	317	0	0	0	317	260	0	1	0	261
17:15	362	0	2	0	364	265	1	0	0	266
17:30	378	0	1	0	379	282	1	0	0	283
17:45	338	1	0	0	339	250	1	1	0	252
18:00	302	0	0	0	302	235	0	0	0	235
18:15	307	0	1	0	308	208	1	2	0	211
18:30	257	0	0	0	257	204	0	1	0	205

Friday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	13	0	0	0	13	5	0	0	0	5
0:15	6	0	0	0	6	8	0	0	0	8
0:30	14	0	0	0	14	5	0	0	0	5
0:45	6	0	0	0	6	2	0	0	0	2
1:00	7	0	0	0	7	3	0	0	0	3
1:15	4	0	0	0	4	3	0	0	3	6
1:30	5	0	0	0	5	2	0	0	0	2
1:45	3	0	0	0	3	3	0	0	0	3
2:00	6	0	0	0	6	1	0	0	0	1
2:15	2	0	0	0	2	1	0	0	0	1
2:30	1	0	0	0	1	2	1	0	0	3
2:45	7	0	0	0	7	2	0	0	0	2
3:00	6	0	0	0	6	2	0	1	0	3
3:15	5	0	0	0	5	6	0	0	0	6
3:30	5	0	0	0	5	3	0	1	0	4
3:45	3	0	1	0	4	9	0	0	0	9
4:00	4	0	0	0	4	4	0	0	0	4
4:15	8	0	0	0	8	10	0	0	0	10
4:30	1	0	0	0	1	10	1	1	0	12
4:45	6	0	0	0	6	11	0	0	0	11
5:00	8	0	0	0	8	15	0	0	0	15
5:15	8	0	0	0	8	22	0	0	0	22
5:30	20	0	0	0	20	46	0	1	0	47
5:45	20	0	0	0	20	51	0	1	0	52
6:00	20	0	1	0	21	65	0	2	0	67
6:15	48	0	0	0	48	94	0	0	0	94
6:30	70	0	1	0	71	120	0	0	1	121
6:45	124	0	0	0	124	155	1	2	0	158
7:00	166	0	1	1	168	269	0	1	0	270
7:15	295	0	1	1	297	323	1	4	0	328
7:30	371	1	1	0	373	428	0	3	2	433
7:45	305	0	0	2	307	492	2	4	3	501
8:00	298	2	1	1	302	486	0	5	2	493
8:15	244	0	5	0	249	325	0	2	1	328
8:30	214	0	3	0	217	262	1	1	0	264
8:45	204	0	1	0	205	265	0	1	0	266
9:00	165	0	1	0	166	229	1	3	0	233
9:15	125	1	4	1	131	184	0	2	1	187
9:30	143	0	0	1	144	175	1	0	0	176
9:45	141	0	1	0	142	188	1	3	0	192
10:00	134	0	1	0	135	146	0	4	0	150
10:15	122	0	1	1	124	139	0	1	0	140
10:30	138	0	2	0	140	152	0	4	0	156
10:45	124	0	1	0	125	146	1	3	0	150
11:00	142	0	0	0	142	135	0	2	1	138
11:15	135	0	1	0	136	143	0	1	0	144
11:30	169	0	1	0	170	156	0	3	0	159
11:45	184	0	0	0	184	159	1	2	0	162
12:00	162	0	0	1	163	162	0	2	0	164
12:15	171	0	1	0	172	157	0	2	2	161
12:30	154	0	1	0	155	153	0	3	2	158
12:45	144	0	1	0	145	148	1	3	1	153
13:00	153	0	0	0	153	161	1	2	0	164
13:15	149	0	3	0	152	177	0	1	1	179
13:30	156	0	2	0	158	160	0	2	1	163
13:45	157	0	1	0	158	166	1	1	0	168
14:00	153	0	1	0	154	175	0	1	1	177
14:15	190	0	2	0	192	210	2	2	0	214
14:30	243	0	0	1	244	244	0	2	0	246
14:45	281	1	0	0	282	241	2	1	0	244
15:00	309	0	3	5	317	307	0	2	0	309
15:15	305	3	1	5	314	279	1	3	1	284
15:30	243	0	1	1	245	269	2	2	2	275
15:45	279	1	1	0	281	239	1	4	0	244
16:00	273	1	2	0	276	237	0	3	2	242
16:15	259	0	1	1	261	257	1	0	0	258
16:30	290	0	0	0	290	272	0	0	0	272
16:45	313	1	0	1	315	257	0	2	1	260
17:00	328	0	1	0	329	254	1	0	0	255
17:15	361	0	2	1	364	270	1	1	0	272
17:30	374	0	0	0	374	272	0	0	0	272
17:45	347	1	0	0	348	255	1	0	0	256
18:00	339	0	0	0	339	276	0	3	0	279
18:15	293	0	2	0	295	256	1	1	1	259
18:30	282	0	0	0	282	214	1	0	0	215

Crystal Spring Upland School

Corrido **Ralston Avenue** 5-day, 24-hour Mechanical Tube Traffic Counts
Locatio **between Davis Drive and Cipriani Drive**
Date: **3/3/2014 - 3/7/2014**

Time	Monday										Tuesday									
	EB					WB					EB					WB				
18:45	191	0	0	0	191	145	0	0	0	145	213	0	0	0	213	164	0	1	0	165

Time	Wednesday										Thursday									
	EB					WB					EB					WB				
18:45	223	0	0	0	223	142	0	2	0	144	226	0	0	0	226	173	0	3	0	176

Time	Friday									
	EB					WB				
18:45	232	0	0	0	232	190	0	2	0	192

Crystal Spring Upland School

Corrido **Ralston Avenue** 5-day, 24-hour Mechanical Tube Traffic Counts
Locatio **between Davis Drive and Cipriani Drive**
Date: **3/3/2014 - 3/7/2014**

Time	Monday										Tuesday									
	EB					WB					EB					WB				
19:00	170	0	0	0	170	117	0	1	0	118	152	0	0	0	152	160	1	2	1	164
19:15	153	0	0	0	153	120	0	0	0	120	160	0	0	0	160	146	0	0	0	146
19:30	116	0	0	0	116	95	0	0	0	95	109	0	0	0	109	125	0	1	0	126
19:45	86	0	0	0	86	84	0	0	0	84	100	0	0	0	100	98	0	0	0	98
20:00	76	0	0	0	76	75	0	0	0	75	94	0	0	0	94	91	0	0	0	91
20:15	87	0	0	0	87	76	0	0	0	76	88	0	0	0	88	95	0	0	0	95
20:30	67	0	1	0	68	55	0	0	0	55	86	0	0	0	86	69	0	0	0	69
20:45	63	0	0	0	63	61	0	0	0	61	76	0	1	0	77	81	0	0	0	81
21:00	62	0	0	0	62	71	0	1	0	72	76	0	0	0	76	81	0	0	0	81
21:15	58	0	1	0	59	47	0	0	0	47	73	0	0	0	73	71	0	1	0	72
21:30	55	0	0	0	55	45	0	0	1	46	72	0	0	0	72	43	0	0	1	44
21:45	43	0	0	0	43	33	0	0	0	33	53	0	0	0	53	35	0	0	0	35
22:00	40	0	0	0	40	34	0	0	0	34	37	0	0	0	37	37	0	0	0	37
22:15	37	0	1	0	38	30	0	0	0	30	29	0	0	0	29	26	0	0	0	26
22:30	28	0	1	0	29	16	0	1	0	17	41	0	0	0	41	19	0	0	0	19
22:45	25	0	1	0	26	23	0	0	0	23	36	0	0	0	36	18	0	1	0	19
23:00	17	0	0	0	17	9	0	0	0	9	25	0	0	0	25	29	0	1	0	30
23:15	15	0	0	0	15	11	0	0	0	11	31	0	0	0	31	11	0	0	0	11
23:30	13	0	0	0	13	16	0	0	0	16	16	0	0	0	16	15	0	0	0	15
23:45	8	0	0	0	8	7	0	0	0	7	16	0	0	0	16	12	0	0	0	12
Total	11,732	17	59	12	11,820	12,139	13	42	13	12,207	12,610	8	68	19	12,705	12,608	23	93	21	12,745

Time	Wednesday										Thursday									
	EB					WB					EB					WB				
19:00	167	0	0	0	167	141	1	0	0	142	168	0	0	0	168	164	1	0	0	165
19:15	151	0	0	0	151	135	0	0	0	135	143	0	0	0	143	134	0	1	0	135
19:30	126	0	0	0	126	132	0	0	0	132	118	0	0	0	118	116	0	0	0	116
19:45	91	0	0	0	91	150	0	1	0	151	112	0	0	0	112	95	0	0	0	95
20:00	99	0	0	0	99	171	0	0	1	172	100	0	0	0	100	97	0	0	0	97
20:15	98	0	0	0	98	118	0	0	0	118	94	0	0	0	94	87	0	0	0	87
20:30	87	0	0	0	87	83	0	0	0	83	90	0	1	0	91	79	0	0	0	79
20:45	76	0	0	0	76	76	0	0	0	76	110	0	0	0	110	65	0	1	0	66
21:00	59	0	0	0	59	67	0	0	0	67	89	0	0	0	89	73	1	0	0	74
21:15	72	0	0	0	72	57	0	0	0	57	64	0	0	0	64	64	0	0	0	64
21:30	69	0	0	0	69	48	0	0	0	48	63	0	0	0	63	44	0	0	1	45
21:45	53	0	0	0	53	40	0	0	0	40	61	0	0	0	61	38	0	0	0	38
22:00	46	0	0	0	46	36	0	0	0	36	57	0	0	0	57	31	0	0	0	31
22:15	42	0	0	0	42	29	0	0	0	29	47	0	0	0	47	27	0	0	0	27
22:30	46	0	0	0	46	24	0	0	0	24	34	0	0	0	34	25	0	0	0	25
22:45	37	0	0	0	37	24	0	0	0	24	37	0	1	0	38	22	0	0	0	22
23:00	15	0	0	0	15	14	0	0	0	14	26	0	0	0	26	16	0	0	0	16
23:15	22	0	0	0	22	15	0	0	0	15	25	0	0	0	25	17	0	0	0	17
23:30	20	0	0	0	20	13	0	0	0	13	16	0	1	0	17	6	0	0	0	6
23:45	13	0	0	0	13	12	0	0	0	12	14	0	0	0	14	11	0	0	0	11
Total	12,587	9	59	22	12,677	12,786	24	85	29	12,924	12,544	10	79	14	12,647	12,541	30	85	17	12,673

Time	Friday									
	EB					WB				
19:00	181	0	0	0	181	203	1	0	0	204
19:15	136	0	0	0	136	199	0	0	0	199
19:30	136	0	0	0	136	174	0	1	0	175
19:45	111	0	0	0	111	138	0	0	0	138
20:00	102	0	0	0	102	120	0	0	0	120
20:15	94	0	1	0	95	83	0	0	0	83
20:30	84	1	0	0	85	88	0	0	0	88
20:45	65	0	0	0	65	83	1	0	0	84
21:00	67	0	0	0	67	78	0	0	0	78
21:15	59	0	0	0	59	70	0	0	1	71
21:30	75	0	0	0	75	76	0	0	0	76
21:45	71	0	0	0	71	82	0	0	0	82
22:00	75	0	0	0	75	58	0	0	0	58
22:15	54	0	0	0	54	53	0	0	0	53
22:30	50	0	1	0	51	33	0	0	0	33
22:45	37	0	0	0	37	32	0	0	0	32
23:00	43	0	0	0	43	35	0	0	0	35
23:15	33	0	0	0	33	18	0	0	0	18
23:30	26	0	0	0	26	20	0	0	0	20
23:45	21	0	0	0	21	21	0	0	0	21
Total	12,709	13	57	24	12,803	13,384	31	104	30	13,549

Peak Hour Summary

AM Peak:	3080	veh/hour	7:15 AM	to	8:15 AM
Midday Peak:	1303	veh/hour	11:45 AM	to	12:45 PM
PM Peak:	2495	veh/hour	5:00 PM	to	6:00 PM

Corrido Ralston Avenue

Locatio between Tahoe Drive and Davis Drive

Date: 3/3/2014 - 3/7/2014

5-day, 24-hour Mechanical Tube Traffic Counts

Time	Monday																													
	EB															WB														
	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0:00	0	0	0	0	0	1	3	4	2	2	0	0	0	0	12	0	0	0	0	0	3	5	4	6	0	1	1	0	0	20
0:15	0	0	0	0	0	1	3	3	0	1	1	0	0	0	9	0	0	0	0	0	0	0	6	1	0	0	0	0	0	7
0:30	0	0	0	0	0	0	0	4	2	0	0	0	0	0	6	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
0:45	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	4	0	1	0	0	0	0	0	5	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
1:15	0	0	0	0	0	1	1	2	0	1	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	1	2	1	1	0	1	0	0	0	6	0	0	0	0	0	3	1	1	0	0	0	0	0	0	5
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
2:00	0	0	0	0	0	0	3	0	0	1	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:15	0	0	0	0	1	0	1	0	1	0	0	0	0	0	3	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
2:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2:45	0	0	0	0	0	3	1	1	1	0	0	0	0	0	6	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
3:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
3:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
3:45	0	0	0	0	1	1	0	2	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0	0	0	0	0	5
4:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	2	6	0	2	2	0	0	0	0	12
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	0	0	0	4
4:45	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	1	1	4	2	0	0	0	0	0	8
5:00	0	0	0	0	0	1	1	1	0	0	0	0	0	0	3	0	0	0	0	0	1	3	7	1	0	1	0	0	0	13
5:15	0	0	0	0	0	0	5	4	0	2	0	0	0	0	11	0	0	0	0	1	1	5	9	2	0	1	0	0	0	19
5:30	0	0	0	0	1	0	5	6	2	0	0	0	0	0	14	0	0	0	0	1	2	9	15	10	1	1	0	0	0	39
5:45	0	0	0	0	0	1	7	8	6	1	0	0	0	0	23	0	0	0	0	0	2	9	21	7	2	0	0	0	0	41
6:00	0	0	0	0	0	2	10	8	2	1	0	0	0	0	23	0	0	0	0	1	0	19	27	14	2	0	0	0	0	63
6:15	0	0	0	0	0	5	11	9	3	3	0	0	0	0	31	0	0	0	0	0	3	26	36	11	1	0	0	0	0	77
6:30	0	0	0	0	2	5	20	22	13	1	0	0	0	0	63	0	0	0	0	0	3	25	49	19	7	2	0	0	0	105
6:45	0	0	0	0	0	7	35	47	15	1	1	0	0	0	106	1	0	0	0	2	12	40	53	31	5	2	0	0	0	146
7:00	0	0	0	0	2	12	63	66	13	5	0	0	0	0	161	0	0	0	0	2	18	85	96	31	7	0	1	0	0	240
7:15	0	0	0	0	15	52	109	90	17	4	0	0	0	0	287	1	0	0	0	6	47	107	104	19	1	1	0	0	0	286
7:30	0	2	0	0	29	112	124	71	15	2	1	0	0	0	356	1	0	6	20	44	86	131	80	18	5	0	0	0	0	391
7:45	0	0	0	1	26	92	82	39	5	0	0	0	0	0	245	12	7	15	42	151	163	75	13	2	2	0	0	0	0	482
8:00	0	0	0	16	87	116	43	2	0	0	0	0	0	0	264	34	31	75	152	132	13	0	0	0	0	0	0	0	0	437
8:15	0	0	0	6	52	101	111	14	4	0	1	0	0	0	289	52	69	42	106	76	69	2	2	1	0	0	0	0	0	419
8:30	0	0	0	0	7	61	106	64	12	1	0	0	0	0	251	0	0	0	3	19	71	113	64	21	1	0	0	0	0	292
8:45	0	0	0	1	2	47	101	67	6	1	0	0	0	0	225	0	0	0	0	3	56	107	84	20	3	0	0	0	0	273
9:00	0	1	0	0	3	18	78	61	16	3	0	0	0	0	180	0	0	0	4	7	40	83	69	29	2	0	0	0	0	234
9:15	0	0	0	0	5	19	64	47	18	4	0	0	0	0	157	1	0	0	0	4	25	63	73	23	5	0	0	0	0	194
9:30	0	0	0	0	8	23	78	47	14	3	0	0	0	0	173	0	0	0	1	1	19	59	49	19	3	0	0	0	0	151
9:45	0	1	0	0	7	24	69	44	7	3	0	0	0	0	155	0	0	0	0	0	21	65	53	7	2	1	0	0	0	149
10:00	0	0	0	0	5	27	48	31	2	0	0	0	0	0	113	0	0	0	2	3	19	42	50	12	3	0	0	0	0	131
10:15	0	0	0	1	14	41	51	30	1	3	0	0	0	0	141	0	0	0	1	4	21	66	38	10	0	0	0	0	0	140
10:30	0	0	0	0	6	34	45	29	7	0	0	0	0	0	121	0	0	0	1	4	21	58	46	6	3	0	0	0	0	139
10:45	0	0	0	0	9	29	57	32	5	0	0	0	0	0	132	1	0	0	1	3	28	71	42	14	3	0	0	0	0	163
11:00	0	0	0	0	3	16	43	29	12	0	2	0	0	0	105	0	0	0	1	2	13	34	39	8	4	0	0	0	0	101
11:15	0	0	0	0	5	31	51	29	2	1	0	0	0	0	119	0	0	0	2	2	8	39	35	21	2	0	0	0	0	109
11:30	0	0	0	0	6	18	41	34	10	2	0	0	0	0	111	0	0	0	0	7	23	33	27	10	2	2	0	0	0	104

Corrido Ralston Avenue

Locatio between Tahoe Drive and Davis Drive

Date: 3/3/2014 - 3/7/2014

5-day, 24-hour Mechanical Tube Traffic Counts

Time	Monday																													
	EB															WB														
11:45	0	0	0	0	8	15	66	29	10	0	0	0	0	0	128	0	0	0	0	5	18	54	36	9	2	0	0	0	0	124
12:00	0	0	0	0	4	13	60	50	11	4	1	0	0	0	143	0	0	0	0	5	16	42	42	15	4	0	0	0	0	124
12:15	0	0	0	0	3	25	55	35	11	1	0	0	0	0	130	0	0	0	1	2	24	82	35	10	5	0	0	0	0	159
12:30	0	0	0	1	3	28	60	33	9	4	0	0	0	0	138	0	0	0	0	0	16	52	67	7	4	0	0	0	0	146
12:45	0	0	0	0	3	31	55	36	6	2	0	0	0	0	133	0	0	0	0	5	20	62	38	14	2	1	0	0	0	142
13:00	0	0	0	0	2	28	67	27	11	0	0	0	0	0	135	0	0	0	0	1	25	66	27	9	2	0	0	0	0	130
13:15	0	0	0	1	2	14	51	38	16	2	1	0	0	0	125	0	0	0	0	4	16	49	43	12	4	0	0	0	0	128
13:30	0	0	0	0	5	31	34	37	6	0	0	0	0	0	113	0	0	0	0	5	23	55	39	12	3	1	0	0	0	138
13:45	0	0	0	0	8	21	54	49	15	0	0	0	0	0	147	0	0	0	0	17	19	58	40	10	1	0	0	0	0	145
14:00	0	0	0	0	13	33	50	33	3	1	0	0	0	0	133	0	0	0	3	14	36	52	26	12	1	0	0	0	0	144
14:15	0	0	0	0	6	40	67	31	8	1	0	0	0	0	153	0	0	0	0	5	38	78	45	13	1	1	0	0	0	181
14:30	0	0	0	0	15	36	76	44	4	0	0	0	0	0	175	0	0	0	1	21	49	81	33	7	3	0	0	0	0	195
14:45	0	2	0	1	41	82	70	37	4	1	0	0	0	0	238	0	0	3	5	14	52	81	35	6	3	0	0	0	0	199
15:00	0	2	1	29	83	73	32	5	2	1	0	0	0	0	228	1	5	7	26	48	103	62	17	0	0	0	0	0	0	269
15:15	0	0	0	0	30	72	90	27	5	0	0	0	0	0	224	0	0	0	10	43	93	94	56	8	1	0	0	0	0	305
15:30	1	1	0	0	7	51	108	45	12	0	0	0	0	0	225	0	0	0	0	19	54	84	52	19	5	0	0	0	0	233
15:45	0	0	0	1	6	54	106	51	14	1	0	0	0	0	233	1	0	0	1	7	23	98	56	16	3	0	0	0	0	205
16:00	0	0	0	0	4	22	107	72	13	1	0	0	0	0	219	1	0	0	1	4	26	92	88	23	5	1	1	0	0	242
16:15	0	0	0	0	6	44	104	68	21	5	1	0	0	0	249	0	0	0	1	17	46	93	68	18	5	1	1	0	0	250
16:30	0	0	0	0	2	37	129	72	25	2	2	0	1	0	270	3	0	0	3	14	46	91	72	14	3	0	0	0	0	246
16:45	0	2	0	1	3	36	113	89	20	2	0	0	0	0	266	0	0	0	0	8	50	95	85	10	1	0	0	0	0	249
17:00	0	0	0	0	9	78	155	59	7	2	0	0	0	0	310	0	0	0	0	22	97	108	55	13	3	0	0	0	0	298
17:15	0	0	0	1	25	83	150	65	11	0	0	0	0	0	335	1	0	0	0	28	84	103	38	10	1	0	0	0	0	265
17:30	0	0	0	0	11	84	167	70	26	1	0	0	0	0	359	2	0	0	2	22	70	95	59	10	3	0	0	0	0	263
17:45	0	0	0	0	1	81	156	72	11	2	0	0	0	0	323	0	0	1	17	39	61	93	57	8	1	0	0	0	0	277
18:00	0	0	0	0	6	77	147	43	6	0	0	0	0	0	279	0	0	0	6	23	60	109	40	7	4	0	0	0	0	249
18:15	0	0	0	0	8	91	123	47	7	1	0	0	0	0	277	0	0	0	0	19	55	96	34	4	1	1	0	0	0	210
18:30	0	2	0	0	4	47	102	45	12	0	0	0	0	0	212	0	0	2	0	7	51	61	39	16	1	0	0	0	0	177
18:45	0	0	0	0	3	37	111	35	7	1	0	0	0	0	194	0	0	0	0	7	34	82	31	8	1	0	0	0	0	163

Corrido Ralston Avenue

Locatio between Tahoe Drive and Davis Drive

Date: 3/3/2014 - 3/7/2014

5-day, 24-hour Mechanical Tube Traffic Counts

Time	Monday														
	EB														
19:00	0	1	0	0	4	41	76	24	4	0	0	0	0	0	150
19:15	0	0	0	0	2	35	62	40	7	1	0	0	0	0	147
19:30	0	0	0	0	2	34	57	36	2	1	0	0	0	0	132
19:45	0	0	0	0	1	8	41	32	7	1	0	0	0	0	90
20:00	0	0	0	0	0	9	46	33	6	0	0	0	0	0	94
20:15	0	0	0	0	1	12	36	11	9	0	0	0	0	0	69
20:30	0	0	0	1	2	22	33	17	2	0	0	0	0	0	77
20:45	0	0	0	0	2	16	21	16	5	0	0	0	0	0	60
21:00	0	0	0	0	3	6	32	20	4	1	0	0	0	0	66
21:15	0	0	0	0	1	13	28	21	6	1	0	0	0	0	70
21:30	0	0	0	0	0	10	22	16	0	0	0	0	0	0	48
21:45	0	1	0	0	1	12	27	16	3	0	0	0	0	0	60
22:00	0	0	0	0	0	13	20	8	0	1	0	0	0	0	42
22:15	0	0	0	0	0	7	14	19	2	1	0	0	0	0	43
22:30	0	0	0	0	0	7	19	3	1	1	0	0	0	0	31
22:45	0	0	0	0	0	5	15	8	3	0	0	0	0	0	31
23:00	0	0	0	0	0	3	3	5	3	0	0	0	0	0	14
23:15	0	0	0	0	0	2	7	7	3	1	0	0	0	0	20
23:30	0	0	0	0	0	1	8	3	1	0	0	0	0	0	13
23:45	0	0	0	0	0	0	5	1	2	2	0	0	0	0	10
Total	1	15	1	62	636	2,523	4,720	2,630	599	92	12	0	1	0	11,292

Time	WB														
19:00	0	0	0	1	7	20	63	28	11	1	0	0	0	0	131
19:15	0	0	0	3	7	16	43	39	11	5	0	0	0	0	124
19:30	0	0	0	0	3	9	30	35	11	2	1	0	0	0	91
19:45	0	0	0	0	0	5	39	44	5	1	0	0	0	0	94
20:00	0	0	0	0	0	10	25	28	6	3	0	0	0	0	72
20:15	0	0	0	0	0	15	23	23	8	2	0	1	0	0	72
20:30	0	0	1	0	2	5	29	18	4	3	0	0	0	0	62
20:45	0	0	0	0	6	14	19	13	4	2	0	0	0	0	58
21:00	0	0	0	0	4	15	28	19	5	2	0	0	0	0	73
21:15	0	0	0	0	2	11	20	17	4	0	0	0	0	0	54
21:30	0	0	0	0	0	4	20	11	6	3	0	0	0	0	44
21:45	0	0	0	0	0	4	15	14	3	0	0	0	0	0	36
22:00	0	0	0	0	0	2	17	5	6	0	0	0	0	0	30
22:15	0	0	0	0	1	2	16	7	2	0	0	0	0	0	28
22:30	0	0	0	0	1	1	11	5	4	0	0	0	0	0	22
22:45	0	0	0	0	1	3	4	9	3	1	0	0	0	0	21
23:00	0	0	0	0	0	1	5	3	0	3	0	0	0	0	12
23:15	0	0	0	0	0	2	3	4	0	2	0	0	0	0	11
23:30	0	0	0	0	0	2	5	4	0	0	1	0	0	0	12
23:45	0	0	0	0	0	1	0	5	0	0	0	0	0	0	6
Total	112	112	152	417	934	2,242	4,078	2,889	795	174	20	5	0	0	11,930

Tuesday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0	0	0	0	1	1	4	0	3	1	0	0	0	0	10	0	0	0	0	0	0	4	2	0	0	0	0	0	0	6
0	0	0	0	0	1	8	7	1	0	0	0	0	0	17	0	0	0	0	0	1	5	2	0	1	0	0	0	0	9
0	0	0	0	1	2	3	1	0	0	0	0	0	0	7	0	0	0	0	0	2	4	0	0	0	0	0	0	0	6
0	0	0	0	0	0	5	3	0	1	0	0	0	0	9	0	0	0	0	1	0	0	0	1	1	0	0	0	0	3
0	0	0	0	1	2	2	1	2	0	0	0	0	0	8	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
0	0	0	0	0	1	4	0	0	0	1	0	0	0	6	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3
0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	1	2	0	0	0	0	0	0	0	3
0	0	0	0	0	0	5	0	0	1	0	0	0	0	6	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	3	1	0	0	0	0	0	0	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0	0	0	0	0	2	1	1	2	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
0	0	0	0	0	0	2	0	1	1	0	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	4	0	0	0	0	0	0	5
0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	0	0	1	0	1	1	0	0	0	0	0	0	3	0	0	0	0	0	0	3	2	1	1	0	0	0	0	7
0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4	5	1	0	0	0	0	0	10
0	0	0	0	1	2	1	4	1	0	0	0	0	0	9	0	0	0	0	0	0	1	8	1	2	0	0	0	0	12
0	0	0	0	1	1	4	3	1	0	0	0	0	0	10	0	0	0	0	0	1	3	3	1	1	0	0	0	0	9
0	0	0	0	1	3	3	1	1	0	0	0	0	0	9	0	0	0	0	0	1	8	10	5	2	1	0	0	0	27
0	0	1	0	0	1	1	4	0	0	0	0	1	0	8	0	1	0	0	0	3	12	10	4	0	0	0	0	0	30
0	0	2	0	0	3	5	5	1	0	0	0	0	0	16	0	0	0	0	0	4	8	16	7	2	1	0	0	0	38
0	0	0	0	1	3	9	11	3	1	0	0	0	0	28	0	1	0	0	0	0	12	27	13	3	0	0	0	0	56
0	0	0	0	1	5	13	9	6	1	0	0	0	0	35	0	0	0	0	1	0	19	37	13	4	0	1	0	0	75
0	0	0	0	2	8	15	25	5	0	0	0	0	0	55	0	0	0	0	1	5	17	38	8	4	0	0	0	0	73
0	0	0	0	1	6	34	32	10	3	0	0	0	0	86	0	0	0	0	2	14	21	55	13	6	1	0	0	0	112
0	1	1	0	5	31	60	42	2	0	0	0	0	0	142	1	0	0	0	12	18	78	89	21	4	2	0	0	0	225
1	0	1	0	13	69	115	54	15	2	0	0	0	0	270	1	0	0	1	12	27	89	120	31	6	0	0	0	0	287
0	0	2	0	30	115	131	69	9	1	0	0	0	0	357	0	0	0	1	56	84	111	106	22	4	1	0	0	0	385
0	0	5	1	44	101	79	18	6	2	0	0	0	0	256	3	0	3	32	134	133	94	57	9	0	0	0	0	0	465
0	0	3	2	55	107	73	10	1	1	0	0	0	0	252	30	14	19	53	120	103	78	5	3	0	0	0	0	0	425
0	0	0	4	57	101	48	9	3	0	0	0	0	0	222	23	1	16	146	165	53	3	2	0	0	0	0	0	0	409
0	1	1	3	11	99	102	29	3	0	0	0	0	0	249	61	57	50	77	41	24	2	0	0	0	0	0	0	0	312
0	0	1	0	15	66	75	32	3	0	0	0	0	0	192	0	0	0	12	46	103	116	37	10	0	0	0	0	0	324
1	0	1	1	9	52	78	48	7	2	0	0	0	0	199	0	0	0	3	37	83	103	45	10	1	0	0	0	0	282
0	0	0	0	7	38	71	29	5	1	0	0	0	0	151	1	0	1	5	7	64	103	57	10	1	0	0	0	0	249
0	1	1	0	9	40	88	38	5	0	0	0	0	0	182	0	0	0	1	11	49	90	34	15	1	0	0	0	0	201
0	0	1	0	10	40	68	26	9	0	0	0	0	0	154	1	0	0	0	5	37	64	40	12	4	0	0	0	0	163
0	0	2	0	9	40	63	30	7	0	0	0	0	0	151	0	0	0	0	7	45	43	40	8	2	0	0	0	0	145
0	0	1	0	4	28	61	28	5	0	0	0	0	0	127	0	0	0	1	3	24	54	50	12	2	0	0	0	0	146
0	0	0	0	6	35	54	25	4	1	0	0	0	0	125	0	0	0	0	2	12	57	43	14	3	0	0	0	0	131
1	0	0	0	3	34	51	21	3	0	0	0	0	0	113	1	0	0	0	3	17	48	50	13	4	0	0	0	0	136
0	0	1	0	5	34	60	20	3	0	0	0	0	0	123	0	0	0	0	4	26	37	45	18	2	0	0	0	0	132
0	0	0	0	4	33	51	25	4	3	0	0	0	0	120	0	0	0	2	6	16	45	37	9	2	0	0	0	0	117
0	0	0	1	5	42	60	20	4	0	0	1	0	0	133	0	0	0	0	5	34	58	33	10	0	0	0	0	0	140

Tuesday																													
EB															WB														
0	0	0	1	7	41	52	15	3	0	0	0	1	0	120	0	0	0	1	7	19	58	34	7	3	0	0	0	0	129
0	0	0	0	5	40	59	20	1	1	0	0	0	0	126	0	0	0	0	13	31	64	31	9	2	1	0	0	0	151
0	0	0	0	4	22	68	23	6	1	0	0	0	0	124	1	0	1	8	26	41	57	26	8	1	0	0	0	0	169
0	0	0	0	4	29	70	29	5	1	0	0	0	0	138	1	5	15	17	15	33	44	23	2	0	0	0	0	0	155
0	0	0	0	4	33	66	27	5	2	0	0	0	0	137	6	4	4	13	14	36	59	29	4	0	0	0	0	0	169
0	0	2	1	6	40	62	30	3	1	0	0	0	0	145	0	0	0	6	23	37	63	40	5	4	0	0	0	0	178
0	0	2	4	7	33	44	24	5	0	0	0	0	0	119	0	0	0	1	12	23	79	47	17	1	0	0	0	0	180
0	0	0	0	9	14	60	27	10	0	0	0	0	0	120	0	0	0	2	11	15	49	40	12	3	3	0	0	0	135
0	0	0	0	1	33	56	35	11	4	0	0	0	0	140	0	0	0	4	7	18	46	59	10	3	0	0	0	0	147
0	0	0	1	6	35	64	49	8	2	0	0	0	0	165	0	0	0	3	10	36	52	42	5	2	0	0	0	0	150
0	0	0	1	15	49	74	37	2	1	0	0	0	0	179	0	0	0	3	12	26	76	51	9	2	0	0	0	0	179
0	2	0	0	15	69	75	26	7	1	0	0	0	0	195	0	0	0	1	11	47	70	55	15	1	0	0	0	0	200
0	0	0	5	25	83	91	44	7	4	0	0	0	0	259	0	1	1	8	21	66	83	42	7	2	0	0	0	0	231
0	0	0	9	87	105	49	7	2	0	0	0	0	0	259	6	4	11	46	95	89	41	11	1	0	0	0	0	0	304
0	0	0	3	33	82	82	16	5	1	0	0	0	0	222	0	1	1	3	46	91	98	56	7	2	0	0	0	0	305
0	0	0	0	9	71	68	57	12	0	0	0	0	0	217	0	0	0	1	26	57	77	64	15	3	2	0	0	0	245
0	0	1	2	21	60	92	64	14	1	0	0	0	0	255	0	0	0	0	11	46	82	62	17	0	0	0	0	0	218
0	0	0	1	12	43	91	65	13	2	0	1	0	0	228	0	0	0	2	14	43	92	82	7	6	0	0	0	0	246
0	0	0	1	11	39	122	79	16	1	0	0	0	0	269	0	0	0	0	16	49	110	64	8	0	0	0	0	0	247
0	0	0	0	8	78	115	42	10	1	0	0	0	0	254	0	0	0	4	14	62	82	78	14	3	1	0	1	0	259
0	1	0	2	16	89	156	38	7	0	0	0	0	0	309	0	0	0	0	4	44	140	66	18	3	1	0	0	0	276
0	0	0	1	15	83	131	75	19	2	0	0	0	0	326	1	0	0	1	8	49	114	82	9	1	0	1	0	0	266
0	0	0	0	2	82	163	98	18	2	0	0	0	0	365	0	0	0	0	4	43	104	103	13	3	1	0	0	0	271
0	0	0	0	11	81	155	96	13	4	0	0	0	0	360	0	0	0	0	7	43	105	89	20	7	0	1	0	0	272
0	0	0	0	6	61	137	100	22	2	1	0	0	0	329	0	0	0	1	7	56	109	81	18	3	0	0	0	0	275
0	1	0	1	0	26	130	95	14	2	0	0	0	0	269	1	0	0	1	16	71	109	51	22	1	1	0	0	0	273
0	1	0	0	16	69	122	65	12	0	1	0	0	0	286	0	0	0	7	17	64	90	44	12	2	0	0	0	0	236
0	0	0	2	10	65	137	64	7	1	0	0	0	0	286	0	0	0	0	1	38	68	54	17	2	0	1	0	0	181
0	0	0	0	0	22	107	76	12	2	0	0	0	0	219	0	0	0	0	4	38	59	58	13	4	0	0	0	0	176
0	0	0	0	0	19	68	63	10	1	0	0	0	0	161	0	0	0	2	7	20	63	46	15	10	0	0	0	0	163
0	0	0	0	2	12	57	58	17	0	0	0	0	0	146	0	0	0	1	4	22	55	54	23	9	0	0	0	0	168
0	0	0	0	0	5	46	52	13	1	0	0	0	0	117	0	0	0	0	7	18	41	42	9	2	1	0	0	0	120
0	0	0	1	0	8	46	38	11	1	0	0	0	0	105	0	0	0	0	0	3	36	46	17	8	3	0	0	0	113
0	0	0	0	1	6	36	36	9	0	0	0	0	0	88	0	0	0	0	1	6	27	40	9	2	1	0	0	0	86
0	0	0	0	0	1	36	36	17	3	0	0	0	0	93	0	0	0	0	0	4	31	44	12	3	1	0	0	0	95
0	0	0	0	2	7	25	34	11	0	0	0	0	0	79	0	0	0	0	3	14	15	26	13	3	1	0	0	0	75
0	0	0	0	0	11	16	35	6	4	0	0	0	0	72	0	0	0	0	5	4	22	29	12	2	1	0	0	0	75
0	0	0	0	0	9	34	26	5	2	0	0	0	0	76	0	0	0	0	1	11	41	32	10	1	0	0	0	0	96
0	0	0	0	1	6	24	32	7	0	0	0	0	0	70	0	0	0	0	1	4	27	29	4	1	1	0	0	0	67
0	0	0	0	0	7	26	27	12	2	0	0	0	0	74	0	0	0	0	5	10	24	20	7	5	1	0	0	0	72
0	0	0	0	1	7	25	18	6	0	0	0	0	0	57	0	0	0	0	0	4	12	10	1	0	1	0	0	0	28
0	0	0	1	0	1	14	14	3	2	0	0	0	0	35	0	0	0	0	0	4	15	19	5	2	0	0	0	0	45
0	0	0	0	0	4	9	21	4	0	1	0	0	0	39	0	0	0	0	0	2	11	15	5	1	0	0	0	0	34
0	0	0	0	0	5	9	16	3	1	0	0	0	0	34	0	0	0	0	1	1	6	6	4	0	0	0	0	0	18
0	0	0	0	0	5	9	17	9	2	0	0	0	0	42	0	0	0	0	1	1	8	6	1	0	0	0	0	0	17
0	0	0	0	0	1	5	9	9	1	0	1	0	0	26	0	0	0	0	0	0	10	14	3	0	0	0	0	0	27
0	0	0	0	0	4	8	6	4	2	1	0	0	0	25	0	0	0	0	0	2	6	8	1	0	0	0	0	0	17
0	0	0	0	0	2	6	12	5	0	0	0	0	0	25	0	0	0	0	0	1	7	7	1	1	0	0	0	0	17

Tuesday																												
EB															WB													
0	0	0	0	0	2	4	2	4	1	0	0	0	0	13	0	0	0	0	0	0	4	2	1	0	0	0	0	0	7
3	8	29	49	685	2,847	4,720	2,659	569	84	5	3	2	0	11,663	138	89	122	470	1,191	2,429	4,142	3,174	770	177	27	4	1	0	12,734

Wednesday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0	0	0	0	1	0	3	8	2	0	0	0	0	0	14	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
0	0	0	0	0	1	3	5	3	0	0	0	0	0	12	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
0	0	0	0	0	0	1	1	2	0	1	0	0	0	5	0	0	0	0	0	0	2	2	1	0	0	0	0	0	5
0	0	0	0	0	5	2	3	1	0	0	0	0	0	11	0	0	0	0	0	1	1	1	0	0	0	0	0	0	3
0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	1	3	2	1	0	0	0	0	0	7
0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	0	0	0	0	0	3	2	2	0	0	0	0	0	0	7
0	0	0	0	0	1	2	0	0	1	0	0	0	0	4	0	0	0	0	1	0	1	3	0	0	0	0	0	0	5
0	0	0	0	0	0	2	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1	2	0	0	0	0	0	3	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
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0	0	0	0	0	1	2	1	0	0	0	0	0	0	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3	3	0	0	0	0	0	0	6
0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3
0	0	0	0	0	1	0	1	1	0	0	0	0	0	3	0	0	0	0	0	1	0	1	2	0	0	0	0	0	4
0	0	0	0	0	0	1	3	0	0	0	0	0	0	4	0	0	0	0	0	1	2	0	1	0	0	0	0	0	4
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0	0	0	0	0	3	1	2	0	0	0	0	0	0	6	0	0	0	0	0	0	4	10	2	2	0	0	0	0	18
0	0	0	0	0	1	5	4	0	0	0	0	0	0	10	0	0	0	0	0	0	7	13	1	1	1	1	0	0	24
0	0	0	0	1	2	4	2	2	1	0	0	0	0	12	0	0	0	0	0	2	4	23	10	4	0	0	0	0	43
0	0	0	0	0	1	6	10	3	2	0	0	0	0	22	0	0	0	0	1	0	12	20	16	4	0	0	0	0	53
0	0	0	0	0	0	9	10	7	1	0	0	0	0	27	0	0	0	0	1	1	22	26	11	4	1	0	0	0	66
0	0	0	0	1	4	16	15	8	0	2	1	0	0	47	0	0	0	0	1	3	18	41	21	8	0	0	0	0	92
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0	0	0	0	0	3	21	40	29	6	0	0	0	0	99	0	0	0	0	0	11	38	63	32	4	1	0	0	0	149
0	0	0	0	1	13	67	75	28	3	0	0	0	0	187	0	0	0	0	5	21	83	105	33	7	0	1	0	0	255
0	1	0	0	9	51	85	92	28	0	0	0	0	0	266	2	0	0	1	4	55	93	113	24	3	0	0	0	0	295
0	0	0	0	17	120	146	54	6	0	1	0	0	0	344	1	0	1	8	40	100	131	100	25	5	0	0	0	0	411
0	0	1	5	25	123	90	27	2	0	0	0	0	0	273	10	25	17	80	121	163	51	17	2	3	0	0	0	0	489
0	0	0	4	88	137	49	12	0	0	0	0	0	0	290	22	2	4	97	242	55	3	0	0	0	0	0	0	0	425
0	0	1	9	45	105	72	42	5	1	0	0	0	0	280	15	28	21	57	79	45	89	61	5	0	0	0	0	0	400
0	0	0	0	10	58	130	52	9	2	0	0	0	0	261	0	0	0	0	6	62	152	73	16	1	0	0	0	0	310
0	0	0	0	15	29	98	53	16	2	0	0	0	0	213	0	0	0	0	8	42	106	72	25	5	0	0	0	0	258
0	0	0	1	5	21	67	68	15	2	0	0	0	0	179	0	0	1	2	12	22	85	88	29	6	1	2	0	0	248
0	1	0	1	5	27	68	44	9	2	0	0	0	0	157	1	0	0	0	0	25	58	52	27	4	0	0	0	0	167
0	0	0	6	2	50	62	47	10	1	0	0	0	0	178	0	0	1	2	13	18	67	66	18	8	0	0	0	0	193
0	0	0	1	4	37	66	26	8	0	0	0	0	0	142	0	0	0	0	4	21	80	37	12	1	0	0	0	0	155
0	0	0	0	5	26	63	40	5	0	0	0	0	0	139	0	0	0	0	2	20	56	39	17	8	0	0	0	0	142
0	0	0	1	6	28	41	26	6	2	0	0	0	0	110	0	0	0	0	7	27	43	51	8	2	1	0	0	0	139
0	0	1	1	7	27	59	16	3	0	0	0	0	0	114	0	0	0	1	6	11	40	47	14	3	1	0	0	0	123
0	0	0	0	5	27	60	16	2	2	1	0	0	0	113	0	0	0	2	3	20	35	35	17	5	0	0	0	0	117
0	0	1	0	6	14	34	17	7	2	0	0	0	0	81	0	0	0	0	3	24	50	28	8	3	0	1	0	0	117
0	0	0	0	8	30	57	34	1	1	0	0	0	0	131	0	0	1	0	3	24	52	30	9	2	0	0	0	0	121
0	0	0	0	8	36	48	41	4	2	0	0	0	0	139	0	0	0	1	6	29	51	30	9	2	0	0	0	0	128

Wednesday																													
EB															WB														
0	0	0	0	0	18	84	41	9	1	1	0	0	0	154	0	0	0	1	9	20	36	46	14	1	2	0	0	0	129
0	0	0	1	6	35	74	34	6	2	0	0	0	0	158	1	1	1	10	28	52	66	27	5	0	0	0	0	0	191
0	2	0	7	23	64	62	24	2	0	0	0	0	0	184	1	5	4	10	29	63	61	26	3	0	0	0	0	0	202
5	1	8	16	63	73	33	48	0	0	0	0	0	0	247	3	5	13	30	50	57	41	6	0	0	0	0	0	0	205
0	1	0	2	19	37	65	26	1	0	0	0	0	0	151	0	0	0	3	25	51	45	37	6	0	0	0	0	0	167
0	0	0	1	7	26	46	36	3	0	0	1	0	0	120	0	0	0	1	8	37	67	45	20	3	0	0	0	0	181
1	0	0	0	9	25	57	31	4	0	0	0	0	0	127	0	0	0	2	6	20	86	37	10	0	0	0	0	0	161
0	0	0	1	3	31	51	40	3	1	0	0	0	0	130	0	0	0	0	4	15	71	52	15	3	0	0	0	0	160
0	0	0	1	7	28	66	35	13	3	0	1	0	0	154	0	0	0	2	3	18	47	33	18	3	0	0	0	0	124
0	0	0	0	3	21	56	54	6	2	0	0	0	0	142	0	0	0	0	1	23	53	47	10	5	1	0	0	0	140
0	0	0	0	0	22	81	54	14	2	0	0	0	0	173	0	0	0	0	3	39	50	43	12	6	0	0	0	0	153
0	0	0	1	5	32	79	52	7	2	0	0	0	0	178	0	0	0	0	12	30	63	57	11	1	0	0	0	0	174
0	0	0	2	4	45	107	66	16	0	0	0	0	0	240	0	0	0	0	5	48	81	57	15	1	0	0	0	0	207
0	1	0	0	4	51	76	49	11	2	0	0	0	0	194	0	0	0	0	12	44	112	79	24	2	0	0	0	0	273
0	0	0	2	5	48	74	49	20	2	0	0	0	0	200	0	0	0	0	18	76	126	72	8	2	0	0	0	0	302
0	1	0	0	9	51	99	45	11	0	0	0	0	0	216	0	0	0	3	2	47	101	62	19	2	0	0	0	0	236
0	0	0	7	13	57	85	60	16	1	0	0	0	0	239	0	0	0	2	28	49	94	54	13	2	1	0	0	0	243
0	0	0	0	4	38	93	81	19	3	0	0	0	0	238	0	0	0	1	15	43	99	63	19	1	0	0	0	0	241
0	0	0	0	16	54	128	56	13	4	1	0	0	0	272	0	0	0	5	26	75	84	61	11	0	0	0	0	0	262
0	1	0	1	7	78	93	62	4	3	0	0	0	0	249	0	0	0	0	11	65	108	77	23	0	0	0	0	0	284
0	0	0	1	5	77	136	58	14	2	0	0	0	0	293	0	0	0	4	19	78	84	56	14	4	2	0	0	0	261
0	0	0	0	4	107	148	66	2	2	0	0	0	0	329	0	0	0	1	24	101	112	47	10	2	0	0	0	0	297
0	1	0	1	4	66	160	97	19	2	0	0	0	0	350	0	0	0	1	13	54	103	87	10	3	0	0	0	0	271
0	2	0	0	5	94	144	94	21	1	0	0	0	0	361	1	0	0	0	6	45	122	85	17	4	0	0	0	0	280
0	0	0	1	3	72	138	77	12	4	0	0	0	0	307	0	0	0	0	18	65	110	64	13	3	0	0	0	0	273
0	2	0	0	29	109	161	45	5	3	0	0	0	0	354	0	0	0	0	7	64	125	72	22	2	1	0	0	0	293
0	1	0	0	7	87	137	33	2	3	0	0	0	0	270	0	0	0	1	11	82	95	36	10	1	1	0	0	0	237
0	1	0	0	1	35	95	67	14	2	0	0	0	0	215	0	0	0	0	6	13	78	73	19	4	1	0	0	0	194
0	0	0	1	3	30	110	54	15	2	0	0	0	0	215	0	0	0	1	4	13	67	58	13	1	0	0	0	0	157
0	1	0	0	7	24	91	46	10	2	0	0	0	0	181	0	0	0	0	5	20	45	63	17	4	0	1	0	0	155
0	1	0	0	4	19	78	47	9	0	0	0	0	0	158	0	0	0	1	1	20	57	42	6	1	0	0	0	0	128
0	0	0	0	1	26	51	45	9	1	0	0	0	0	133	0	0	0	2	3	8	48	43	9	1	0	0	0	0	114
0	0	0	0	0	5	41	35	7	1	0	0	0	0	89	0	0	0	0	2	14	61	49	23	4	0	0	0	0	153
0	1	0	0	2	13	38	41	7	1	0	0	0	0	103	0	0	0	1	5	21	61	57	19	4	0	0	0	0	168
0	0	0	0	1	9	37	30	13	3	0	0	0	0	93	0	0	0	0	0	26	57	60	14	7	1	0	0	0	165
0	0	0	0	0	12	30	28	8	1	0	0	0	0	79	0	0	0	0	0	10	29	25	8	4	1	0	0	0	77
0	0	0	0	0	14	33	30	5	4	0	0	0	0	86	0	0	0	0	1	9	22	24	10	2	0	0	0	0	68
0	0	0	1	3	2	17	29	4	0	0	0	0	0	56	0	0	0	0	1	9	19	38	12	3	1	0	0	0	83
0	0	0	0	4	10	24	24	3	0	0	0	0	0	65	0	0	0	0	1	10	24	15	4	1	0	0	1	0	56
0	0	0	0	1	12	27	17	5	0	0	1	0	0	63	0	0	0	2	4	9	18	15	7	3	0	0	0	0	58
0	0	0	0	1	7	31	21	2	0	0	0	0	0	62	0	0	0	0	4	13	21	16	7	1	0	0	0	0	62
0	0	0	0	0	8	27	19	1	1	0	0	0	0	56	0	0	0	0	1	2	13	16	2	0	0	0	0	0	34
0	0	0	0	2	5	13	11	2	1	0	0	0	0	34	0	0	0	0	0	10	12	6	4	0	0	0	0	0	32
0	0	0	0	0	3	18	12	2	1	0	0	0	0	36	0	0	0	0	1	6	3	9	3	0	0	0	0	0	22
0	0	0	0	2	7	13	10	2	1	0	0	0	0	35	0	0	0	1	2	2	7	4	4	1	0	0	0	0	21
0	0	0	0	1	5	15	12	3	0	0	0	0	0	36	0	0	0	0	0	2	8	8	2	0	0	0	0	0	20
0	0	0	1	0	3	7	9	2	1	0	0	0	0	23	0	0	0	0	0	1	6	5	1	1	0	0	0	0	14
0	0	0	0	0	4	8	3	1	0	0	0	0	0	16	0	0	0	0	0	4	4	6	2	0	0	0	0	0	16

Wednesday																													
EB															WB														
0	0	0	0	1	7	9	4	0	0	0	0	0	0	21	0	0	0	0	0	1	3	2	0	0	0	0	0	0	6
6	19	12	77	574	2,696	4,812	2,932	621	105	8	4	0	0	11,866	57	66	64	336	1,003	2,399	4,393	3,380	957	196	22	6	1	0	12,880

Crystal Spring Upland School

Thursday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0	0	0	0	0	2	13	7	0	0	0	0	0	0	22	0	0	0	0	0	2	4	4	3	0	0	0	0	0	13
0	0	0	0	0	0	4	2	0	0	1	0	0	0	7	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	4	1	1	1	0	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
0	0	0	0	0	1	2	4	1	1	0	0	0	0	9	0	0	0	0	0	0	2	3	0	1	0	0	0	0	6
0	0	0	0	0	0	2	1	2	0	0	0	0	0	5	0	0	0	0	1	1	3	2	0	0	0	0	0	0	7
0	0	0	0	0	3	0	2	0	0	0	0	0	0	5	0	0	0	0	0	1	1	1	0	0	0	1	0	0	4
0	0	0	0	0	3	2	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	1	2	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	3	2	1	0	0	0	0	0	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	2	1	2	0	0	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	0	1	1	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	2	0	0	0	0	0	5
0	0	0	0	2	0	3	0	1	0	0	0	0	0	6	0	0	0	0	0	0	1	3	2	0	0	0	0	0	6
0	0	0	0	0	3	1	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
0	0	0	0	1	1	0	2	0	0	0	0	0	0	4	0	0	0	0	0	0	1	2	0	0	0	0	0	0	3
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0	0	0	0	0	1	1	2	0	0	0	0	0	0	4	0	0	0	0	0	3	2	4	3	0	0	0	0	0	12
0	0	0	0	0	1	3	0	2	0	0	0	0	0	6	0	0	0	0	0	0	1	3	2	1	0	0	0	0	7
0	0	0	1	0	4	1	3	0	0	0	0	0	0	9	0	0	0	0	0	0	4	9	3	1	0	0	0	0	17
0	0	0	0	0	1	5	1	0	0	0	0	0	0	7	0	0	0	0	0	3	10	7	1	2	1	0	0	0	24
0	0	0	0	1	0	10	1	0	0	0	0	0	0	12	0	0	0	0	0	1	5	18	10	1	1	0	0	0	36
0	0	0	0	1	0	8	6	3	0	0	0	0	0	18	0	0	0	0	0	1	17	18	7	4	0	0	0	0	47
0	0	0	0	1	3	6	4	3	0	1	0	0	0	18	0	0	0	0	0	6	21	27	2	1	0	0	0	0	57
0	0	0	0	0	4	8	13	3	2	0	0	0	0	30	0	0	0	0	4	2	30	32	18	4	1	0	0	0	91
0	0	0	0	1	7	18	18	13	2	0	0	0	0	59	0	0	0	0	1	6	26	58	27	7	0	0	0	0	125
0	1	0	0	1	7	43	30	4	0	1	0	0	0	87	2	0	0	0	3	17	44	58	30	6	2	1	0	0	163
0	0	0	0	2	19	78	43	10	0	0	0	0	0	152	0	0	0	0	4	17	86	104	35	12	1	0	0	0	259
0	0	0	0	15	78	101	58	8	2	0	0	0	0	262	2	1	4	16	32	46	88	104	39	4	0	0	0	0	336
0	0	0	4	36	101	146	53	5	0	1	0	0	0	346	1	3	6	37	77	137	104	42	10	1	0	0	0	0	418
0	0	0	0	35	107	87	22	1	1	0	0	0	0	253	12	8	14	82	86	148	92	31	5	1	0	0	0	0	479
0	0	0	7	41	106	77	15	2	0	0	0	0	0	248	44	27	61	216	94	5	0	0	0	0	0	0	0	0	447
0	0	0	2	40	92	76	23	2	1	0	0	0	0	236	38	55	61	89	54	33	49	15	3	0	0	0	0	0	397
0	0	0	1	19	89	74	26	4	1	0	0	0	0	214	1	0	0	1	3	43	94	101	30	2	0	0	0	0	275
0	1	1	2	15	75	105	34	5	0	0	0	0	0	238	0	0	0	0	4	64	115	68	21	4	1	0	0	0	277
0	0	0	0	14	50	79	34	6	0	0	0	0	0	183	1	0	0	2	6	44	79	74	21	0	0	0	0	0	227
0	0	0	1	2	49	62	30	4	1	0	0	0	0	149	1	0	0	1	8	19	78	76	19	5	1	0	0	0	208
0	0	0	0	7	53	51	9	2	0	0	0	0	0	122	0	0	0	0	11	27	86	50	7	6	0	0	0	0	187
1	1	0	1	3	39	66	32	6	0	0	0	0	0	149	0	0	0	0	2	16	67	52	17	2	0	0	0	0	156
0	0	1	1	4	46	51	27	4	0	0	0	0	0	134	0	0	0	0	4	18	46	51	12	3	1	0	0	0	135
0	0	0	0	1	29	55	28	4	0	0	0	0	0	117	0	0	0	0	5	15	51	48	14	6	1	0	0	0	140
1	0	0	2	4	32	53	20	6	0	0	0	0	0	118	0	0	0	0	3	23	42	39	10	3	0	0	0	0	120
0	0	0	1	7	32	41	15	2	0	0	0	0	0	98	0	0	0	0	9	26	52	36	6	2	0	0	0	0	131
0	0	0	0	11	30	39	21	4	0	0	0	0	0	105	0	0	0	0	5	25	57	27	10	2	0	0	0	0	126
0	0	1	0	7	36	45	24	3	0	0	0	0	0	116	0	0	0	0	4	25	54	33	9	1	0	0	0	0	126
1	0	0	0	0	31	43	22	3	1	0	0	0	0	101	0	0	0	0	1	22	68	28	12	2	0	0	0	0	133

Crystal Spring Upland School

Thursday																													
EB															WB														
0	0	0	0	8	15	56	18	4	0	1	0	0	0	102	0	0	0	2	7	26	63	39	9	1	0	1	0	0	148
0	0	0	2	6	31	52	25	3	1	0	0	0	0	120	1	0	0	0	9	24	70	34	8	1	0	0	0	0	147
0	0	0	2	1	43	44	17	3	0	0	0	0	0	110	0	0	0	0	4	29	70	42	16	2	1	0	0	0	164
0	0	0	1	4	53	65	13	1	0	0	0	0	0	137	0	0	0	0	9	28	55	41	7	3	0	0	0	0	143
0	0	1	1	12	41	39	24	5	1	0	0	0	0	124	0	0	0	0	4	35	57	48	6	0	0	0	0	0	150
0	0	0	0	3	26	33	44	16	4	1	0	0	0	127	0	0	0	1	5	29	46	39	18	3	0	0	0	0	141
0	0	0	0	9	24	43	39	10	2	0	0	0	0	127	0	0	0	0	11	23	62	28	10	2	0	0	0	0	136
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0	1	0	0	9	36	53	31	9	1	1	0	0	0	141	0	0	0	1	12	29	65	32	16	2	0	0	0	0	157
0	0	0	1	12	50	58	37	10	5	0	0	0	0	173	0	0	0	0	22	51	60	31	7	0	0	0	0	0	171
0	0	0	0	11	44	88	45	23	5	0	1	0	0	217	0	0	0	8	46	81	49	18	5	1	0	0	0	0	208
0	0	0	1	10	52	71	71	19	7	0	1	0	0	232	0	0	0	12	24	83	76	17	4	1	0	0	0	0	217
0	0	2	4	65	95	57	22	2	0	0	0	0	0	247	0	0	8	40	101	70	51	15	4	1	0	0	0	0	290
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0	0	0	0	9	39	79	50	15	9	1	0	0	0	202	0	0	0	1	9	46	97	65	14	3	1	0	0	0	236
0	0	0	0	7	38	108	66	14	5	1	0	0	0	239	0	0	0	0	15	39	97	68	24	1	1	0	0	0	245
0	0	0	0	13	53	107	53	20	5	3	0	0	0	254	0	0	0	0	2	40	85	75	22	1	0	0	0	0	225
0	0	0	1	14	56	83	63	17	9	1	1	0	0	245	0	0	0	1	18	64	90	69	15	3	0	0	0	0	260
0	2	0	0	2	67	94	66	31	7	2	0	0	0	271	1	0	0	4	18	87	107	51	6	3	0	0	0	0	277
0	0	0	0	3	37	104	82	46	10	1	0	0	0	283	0	0	0	3	23	73	102	80	12	2	0	0	0	0	295
0	0	0	2	3	26	82	103	35	16	1	0	0	1	269	0	0	0	0	5	59	96	84	16	2	0	0	0	0	262
0	0	0	0	3	64	136	110	29	7	2	0	0	0	351	0	1	1	1	17	70	122	45	19	3	1	0	0	0	280
0	0	0	0	1	54	127	123	41	9	1	1	0	0	357	0	0	0	0	12	55	133	56	13	2	0	0	0	0	271
0	2	0	0	10	24	102	115	44	12	2	1	0	0	312	0	0	0	0	10	68	102	72	14	1	1	0	0	0	268
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0	0	0	0	3	54	117	74	30	11	1	0	0	0	290	0	0	0	0	6	40	83	75	23	2	0	1	0	0	230
0	0	0	0	3	51	100	77	25	3	1	1	0	0	261	0	0	0	0	3	27	104	70	15	4	0	0	0	0	223
0	0	0	0	0	30	79	80	35	10	2	0	0	0	236	1	0	0	1	1	17	83	56	22	4	0	0	0	0	185
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0	0	0	0	0	13	34	56	20	7	1	1	0	0	132	0	0	0	0	0	8	51	44	8	0	2	1	0	0	114
0	0	0	0	0	8	30	37	22	7	3	1	0	0	108	0	0	0	0	1	21	26	34	13	8	1	0	0	0	104
0	0	0	0	0	7	33	31	20	5	0	0	0	0	96	0	0	2	1	2	20	47	28	8	2	0	0	0	0	110
0	0	0	0	0	7	25	47	18	7	0	0	0	0	104	0	0	0	0	1	5	33	17	16	2	0	0	0	0	74
0	0	0	0	0	4	28	38	14	2	1	1	0	0	88	1	0	0	0	0	12	33	24	12	2	1	0	1	0	86
0	0	0	0	0	7	24	50	19	4	2	0	0	0	106	0	0	0	0	3	4	26	31	7	3	0	0	0	0	74
0	0	0	0	0	7	23	26	17	5	0	0	0	0	78	0	0	0	1	2	10	30	19	13	1	0	0	0	0	76
0	0	0	0	1	1	19	38	16	1	1	0	0	0	77	0	0	0	0	1	5	18	27	10	1	2	0	0	0	64
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0	0	0	0	0	0	20	31	14	4	2	2	1	0	74	0	0	0	0	0	1	11	17	8	0	0	0	0	0	37
0	0	0	0	1	2	13	23	7	4	2	0	0	0	52	0	0	0	0	0	3	9	13	7	1	0	0	0	0	33
0	1	0	0	0	0	11	17	9	2	1	0	0	0	41	0	0	0	0	0	3	8	15	2	1	0	0	0	0	29
0	0	0	0	0	1	8	17	12	4	1	1	0	0	44	0	0	0	0	0	1	10	6	3	1	0	0	0	0	21
0	0	0	0	0	2	12	16	5	3	0	0	0	0	38	0	0	0	0	0	1	4	12	2	3	0	0	0	0	22
0	0	0	0	0	4	6	6	9	4	0	0	0	1	30	0	0	0	0	0	1	5	9	3	0	0	0	0	0	18
0	0	0	0	0	2	4	10	3	5	0	0	0	0	24	0	0	0	0	0	3	6	4	2	0	0	0	0	0	15
0	0	0	0	0	1	9	8	2	2	0	0	0	0	22	0	0	0	0	0	1	6	2	1	0	0	0	0	0	10

Crystal Spring Upland School

Thursday																												
EB															WB													
0	0	0	0	0	0	5	4	2	1	0	0	0	0	12	0	0	0	0	0	0	8	1	1	0	1	0	0	0	11
3	9	7	43	545	2,498	4,141	2,951	958	257	52	13	1	2	11,480	109	95	157	528	878	2,314	4,301	3,118	934	173	23	5	1	0	12,636

Friday																													
EB															WB														
0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
0	0	0	0	0	0	2	6	1	3	0	0	0	0	12	0	0	0	0	1	1	1	0	1	0	1	0	0	0	5
0	0	0	0	0	0	3	3	0	2	0	0	0	0	8	0	0	0	0	0	1	4	1	1	1	0	0	0	0	8
0	0	0	0	0	1	3	3	2	2	0	0	0	0	11	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
0	0	0	0	0	0	0	1	4	1	0	1	0	0	7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	2	3	2	0	0	0	0	0	7	0	0	0	0	1	1	1	0	1	0	0	0	0	0	4
0	0	0	0	0	0	0	0	1	1	0	1	0	0	3	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
0	0	0	0	0	1	1	3	1	0	1	0	0	0	7	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
0	0	0	0	0	0	1	1	0	0	1	0	0	0	3	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
0	0	0	0	0	1	2	1	0	1	0	0	0	0	5	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2
0	0	0	0	0	0	1	2	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	1	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
0	0	0	0	0	1	2	0	2	1	0	0	0	0	6	0	0	0	0	1	1	0	2	0	0	0	0	0	0	4
0	0	0	0	0	1	0	0	2	0	1	1	0	0	5	0	0	0	0	0	0	1	2	1	1	0	0	0	0	5
0	0	0	0	0	0	1	3	1	0	0	0	0	0	5	0	0	0	0	0	0	1	2	1	0	0	0	0	0	4
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0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	1	3	2	0	0	0	0	0	6
0	0	0	0	1	0	2	3	0	0	0	0	0	0	6	0	0	0	0	0	0	3	1	1	2	0	0	0	0	7
0	0	0	0	0	0	1	3	2	0	0	0	0	0	6	0	0	0	0	0	1	3	7	7	1	0	0	0	0	19
0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	1	3	0	1	0	0	0	0	5
0	0	0	0	1	1	3	2	0	0	0	0	0	0	7	0	0	0	0	0	0	4	8	4	1	0	0	0	0	17
0	0	0	0	0	0	3	4	0	1	0	0	0	0	8	0	0	0	0	0	0	4	8	5	0	1	0	0	0	18
0	0	0	0	0	3	3	2	3	0	0	0	0	0	11	0	0	0	0	0	1	5	18	8	1	0	0	0	0	33
0	0	0	0	0	3	8	9	6	3	0	0	0	0	29	0	0	0	0	0	0	13	35	6	1	0	0	0	0	55
0	0	0	0	1	0	6	5	2	1	2	1	0	0	18	0	0	0	1	0	0	13	28	8	6	2	0	0	0	58
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0	0	0	1	1	3	13	22	10	4	3	1	0	0	58	1	0	0	0	0	9	14	52	18	8	3	0	0	0	105
0	0	0	0	0	2	20	33	36	10	6	3	0	0	110	0	0	0	2	8	15	23	55	28	1	0	0	0	0	132
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0	0	0	0	3	19	97	111	43	17	0	1	0	0	291	1	0	0	1	2	24	97	107	48	6	1	0	0	0	287
0	1	0	2	3	68	142	108	39	9	1	1	0	0	374	0	0	2	15	42	66	147	98	20	3	0	0	0	0	393
0	0	0	7	36	93	67	52	10	2	0	0	0	0	267	17	9	9	42	180	126	60	24	2	0	0	0	0	0	469
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0	0	0	4	29	69	80	57	15	2	0	0	0	0	256	32	25	68	87	65	24	70	20	6	3	0	0	0	1	401
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0	0	0	0	4	34	73	62	27	6	1	1	1	0	209	0	0	0	1	8	31	83	80	39	11	0	0	0	0	253
0	0	0	0	5	12	53	52	19	5	0	0	0	0	146	1	0	0	0	6	22	95	90	25	5	0	0	0	0	244
0	0	0	2	5	27	35	41	27	7	2	0	0	0	146	0	0	0	0	6	23	68	70	16	2	0	0	0	0	185
0	0	0	0	1	18	48	40	24	12	0	0	0	0	143	1	0	0	0	1	26	56	81	15	4	0	0	0	0	184
0	0	0	0	4	17	34	50	14	3	0	1	0	0	123	1	0	0	0	0	18	77	59	17	5	1	0	0	0	178
0	0	0	0	6	33	45	43	19	7	0	1	0	0	154	0	0	0	0	9	21	55	62	21	2	0	0	0	0	170
0	0	0	0	3	35	34	39	14	1	0	0	0	0	126	0	0	0	0	13	26	42	39	18	5	0	0	0	0	143
0	0	0	0	4	23	43	49	16	1	1	0	0	0	137	0	0	0	1	1	21	64	47	9	4	0	0	0	0	147
0	0	0	0	2	19	43	35	20	2	1	0	0	0	122	0	0	0	0	4	27	68	48	16	0	0	0	0	0	163
0	0	0	0	4	18	55	36	18	8	0	0	0	0	139	0	0	0	1	4	22	40	56	6	3	0	0	0	0	132
0	0	0	0	1	16	38	39	18	6	2	0	0	0	120	0	0	0	0	1	22	44	46	8	1	0	0	0	0	122
0	0	0	0	4	28	38	52	12	9	0	0	0	0	143	0	0	0	2	8	19	62	52	16	5	0	0	0	0	164

Friday																													
EB															WB														
0	0	0	0	5	28	43	44	19	3	1	0	0	0	143	0	0	0	0	2	29	64	45	15	4	0	0	0	0	159
0	1	0	0	3	27	60	51	18	9	2	0	0	0	171	0	0	0	1	3	29	64	38	15	1	0	0	0	0	151
0	0	0	0	3	32	53	46	21	6	2	0	0	0	163	0	0	0	4	8	25	56	63	12	2	0	0	0	0	170
0	0	0	0	2	27	44	54	19	8	1	0	0	0	155	0	0	0	0	8	35	56	38	13	5	1	0	0	0	156
0	0	0	0	4	26	69	36	13	8	2	0	0	0	158	0	0	0	0	10	14	57	40	8	4	1	1	1	2	138
0	0	0	0	2	34	46	41	23	10	2	0	0	0	158	0	0	1	2	7	43	61	36	15	1	0	0	0	0	166
0	0	0	0	6	36	38	39	10	9	0	1	0	0	139	0	0	0	0	1	34	66	46	13	1	0	0	0	0	161
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0	0	0	0	5	28	55	47	19	7	1	0	0	0	162	0	0	0	0	11	36	62	51	9	2	0	0	0	0	171
0	0	0	0	6	32	52	42	19	5	3	0	0	0	159	0	0	0	2	5	36	70	53	13	6	0	0	0	0	185
0	0	0	1	5	47	85	69	11	3	0	0	0	0	221	0	0	4	3	17	54	67	68	14	2	1	0	0	0	230
0	0	0	1	15	57	95	53	20	5	0	1	0	0	247	1	6	4	11	44	67	84	37	7	2	0	0	0	0	263
1	1	5	23	54	93	64	24	4	0	0	0	0	0	269	7	4	14	55	61	90	54	15	6	1	0	0	0	0	307
1	1	2	0	34	69	74	59	10	1	0	0	0	0	251	3	0	0	4	48	92	79	51	10	3	0	0	0	0	290
0	0	0	0	8	38	83	71	27	6	1	1	0	0	235	0	0	0	1	10	68	108	65	18	1	0	0	0	0	271
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0	1	0	0	7	28	98	83	27	8	1	0	0	0	253	0	0	0	1	7	32	112	74	21	1	0	0	0	0	248
0	0	0	0	1	39	103	81	44	13	2	2	0	0	285	1	0	0	4	9	41	92	78	18	2	1	0	0	0	246
0	0	0	0	0	32	103	98	24	8	2	0	1	0	268	1	0	0	6	22	68	97	72	19	2	1	0	0	0	288
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0	0	0	0	0	10	18	27	7	0	0	0	0	0	62	0	0	1	0	1	7	34	38	9	1	1	0	0	0	92
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0	0	0	0	0	2	20	20	5	5	3	0	0	0	55	0	0	0	0	1	5	13	15	5	4	0	0	0	0	43
0	0	0	0	0	0	8	17	9	6	1	1	0	0	42	0	0	0	0	0	4	6	14	3	1	0	0	0	0	28
0	0	0	0	3	7	7	8	9	0	1	0	0	0	35	0	0	0	0	0	2	11	10	7	1	0	0	0	0	31
0	0	0	0	1	1	7	12	12	3	1	0	0	0	37	0	0	0	0	0	1	6	10	8	1	0	0	0	0	26
0	0	0	0	0	2	7	14	6	0	0	0	0	0	29	1	0	0	0	0	2	10	5	3	1	0	0	0	0	22

Friday																															
EB																WB															
0	0	0	0	0	1	12	9	4	1	1	0	0	0	28		0	0	0	0	0	1	5	9	5	0	0	0	0	0	20	
2	6	9	48	404	1,990	4,002	3,741	1,472	432	78	24	4	1	12,213		117	50	136	406	1,072	2,250	4,502	3,688	1,064	225	29	2	1	3	13,545	

Crystal Spring Upland School

Corrido Ralston Avenue 5-day, 24-hour Mechanical Tube Traffic Counts
Locatio between Tahoe Drive and Davis Drive
Date: 3/3/2014 - 3/7/2014

Monday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	12	0	0	0	12	20	0	0	0	20
0:15	9	0	0	0	9	7	0	0	0	7
0:30	6	0	0	0	6	2	0	0	0	2
0:45	2	0	0	0	2	3	0	0	0	3
1:00	5	0	0	0	5	2	0	0	0	2
1:15	5	0	0	0	5	0	0	0	0	0
1:30	6	0	0	0	6	5	0	0	0	5
1:45	0	0	0	0	0	2	0	0	0	2
2:00	4	0	0	0	4	1	0	0	0	1
2:15	3	0	0	0	3	2	0	0	0	2
2:30	2	0	0	0	2	1	0	0	0	1
2:45	6	0	0	0	6	1	0	0	0	1
3:00	1	0	0	0	1	2	0	0	0	2
3:15	1	0	0	0	1	0	0	0	0	0
3:30	2	0	0	0	2	2	0	0	0	2
3:45	4	0	0	0	4	3	0	1	0	4
4:00	0	0	0	0	0	5	0	0	0	5
4:15	2	0	0	0	2	12	0	0	0	12
4:30	0	0	0	0	0	4	0	0	0	4
4:45	2	0	0	0	2	8	0	0	0	8
5:00	3	0	0	0	3	13	0	0	0	13
5:15	11	0	0	0	11	19	0	0	0	19
5:30	14	0	0	0	14	39	0	0	0	39
5:45	23	0	0	0	23	40	0	1	0	41
6:00	23	0	0	0	23	63	0	0	0	63
6:15	31	0	0	0	31	76	0	1	0	77
6:30	60	0	3	0	63	105	0	0	0	105
6:45	106	0	0	0	106	145	0	1	0	146
7:00	159	1	0	1	161	240	0	0	0	240
7:15	283	0	1	3	287	285	0	1	0	286
7:30	353	1	0	2	356	390	0	1	0	391
7:45	244	0	1	0	245	476	1	1	4	482
8:00	259	3	2	0	264	435	0	0	2	437
8:15	284	1	3	1	289	414	2	1	2	419
8:30	250	0	1	0	251	290	1	1	0	292
8:45	224	1	0	0	225	271	0	1	1	273
9:00	179	0	1	0	180	232	0	1	1	234
9:15	154	1	2	0	157	192	0	2	0	194
9:30	170	0	3	0	173	150	0	1	0	151
9:45	153	0	2	0	155	147	0	2	0	149
10:00	112	0	1	0	113	131	0	0	0	131
10:15	139	1	1	0	141	140	0	0	0	140
10:30	121	0	0	0	121	138	0	0	1	139
10:45	131	1	0	0	132	162	0	1	0	163
11:00	105	0	0	0	105	101	0	0	0	101
11:15	117	1	1	0	119	108	1	0	0	109
11:30	110	0	0	1	111	102	0	2	0	104
11:45	125	0	2	1	128	121	0	2	1	124
12:00	143	0	0	0	143	124	0	0	0	124
12:15	127	1	2	0	130	158	0	1	0	159
12:30	137	0	1	0	138	146	0	0	0	146
12:45	133	0	0	0	133	139	1	2	0	142
13:00	133	0	2	0	135	130	0	0	0	130
13:15	124	1	0	0	125	128	0	0	0	128
13:30	112	0	0	1	113	138	0	0	0	138
13:45	146	0	1	0	147	144	0	1	0	145
14:00	133	0	0	0	133	144	0	0	0	144
14:15	152	1	0	0	153	179	0	2	0	181
14:30	174	0	1	0	175	195	0	0	0	195
14:45	235	1	1	1	238	198	0	1	0	199
15:00	225	0	0	3	228	268	0	0	1	269
15:15	222	1	1	0	224	304	1	0	0	305
15:30	222	0	3	0	225	232	0	1	0	233
15:45	233	0	0	0	233	204	0	1	0	205
16:00	218	0	1	0	219	242	0	0	0	242
16:15	247	1	0	1	249	249	1	0	0	250
16:30	270	0	0	0	270	245	0	1	0	246
16:45	262	1	1	2	266	248	0	1	0	249
17:00	307	0	3	0	310	297	0	1	0	298
17:15	334	0	1	0	335	265	0	0	0	265
17:30	359	0	0	0	359	262	0	0	1	263
17:45	322	1	0	0	323	275	0	1	1	277
18:00	279	0	0	0	279	249	0	0	0	249
18:15	276	1	0	0	277	209	0	1	0	210
18:30	211	0	1	0	212	177	0	0	0	177

Tuesday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	5	0	0	0	5	6	0	0	0	6
0:15	17	0	0	0	17	9	0	0	0	9
0:30	7	0	0	0	7	6	0	0	0	6
0:45	9	0	0	0	9	3	0	0	0	3
1:00	8	0	0	0	8	1	0	1	0	2
1:15	6	0	0	0	6	3	0	0	0	3
1:30	2	0	0	0	2	3	0	0	0	3
1:45	6	0	0	0	6	2	0	0	0	2
2:00	0	0	0	0	0	0	0	0	0	0
2:15	4	0	0	0	4	1	0	0	0	1
2:30	2	0	0	0	2	1	0	0	0	1
2:45	6	0	0	0	6	0	0	0	0	0
3:00	1	0	0	0	1	2	0	0	0	2
3:15	1	0	0	0	1	1	0	1	0	2
3:30	4	0	0	0	4	2	0	0	0	2
3:45	2	0	0	0	2	5	0	0	0	5
4:00	1	0	0	0	1	1	0	0	0	1
4:15	3	0	0	0	3	7	0	0	0	7
4:30	3	0	0	0	3	9	0	1	0	10
4:45	9	0	0	0	9	11	0	1	0	12
5:00	10	0	0	0	10	9	0	0	0	9
5:15	9	0	0	0	9	26	0	1	0	27
5:30	8	0	0	0	8	30	0	0	0	30
5:45	16	0	0	0	16	37	0	1	0	38
6:00	28	0	0	0	28	55	0	1	0	56
6:15	35	0	0	0	35	74	0	1	0	75
6:30	52	0	3	0	55	71	0	2	0	73
6:45	85	0	1	0	86	108	0	4	0	112
7:00	141	1	0	0	142	222	0	2	1	225
7:15	268	0	1	1	270	286	0	1	0	287
7:30	353	1	3	0	357	384	0	1	0	385
7:45	254	0	2	0	256	463	0	1	1	465
8:00	250	1	1	0	252	417	0	4	4	425
8:15	218	1	2	1	222	405	0	2	2	409
8:30	248	0	0	1	249	305	2	1	4	312
8:45	190	0	2	0	192	323	0	1	0	324
9:00	196	1	2	0	199	279	0	3	0	282
9:15	146	1	2	2	151	247	0	2	0	249
9:30	181	0	1	0	182	200	0	0	1	201
9:45	151	0	1	2	154	161	0	0	2	163
10:00	147	1	2	1	151	140	0	5	0	145
10:15	127	0	0	0	127	144	0	1	1	146
10:30	125	0	0	0	125	130	0	0	1	131
10:45	110	1	2	0	113	136	0	0	0	136
11:00	120	0	3	0	123	130	0	2	0	132
11:15	119	0	1	0	120	117	0	0	0	117
11:30	131	1	1	0	133	140	0	0	0	140
11:45	118	0	2	0	120	129	0	0	0	129
12:00	124	1	0	1	126	149	0	2	0	151
12:15	123	0	1	0	124	168	0	1	0	169
12:30	137	0	1	0	138	155	0	0	0	155
12:45	137	0	0	0	137	165	1	3	0	169
13:00	144	0	1	0	145	177	1	0	0	178
13:15	117	0	1	1	119	178	1	1	0	180
13:30	119	0	1	0	120	135	0	0	0	135
13:45	139	0	1	0	140	146	0	1	0	147
14:00	165	0	0	0	165	149	0	1	0	150
14:15	177	1	1	0	179	178	0	1	0	179
14:30	194	0	1	0	195	200	0	0	0	200
14:45	257	1	1	0	259	228	1	2	0	231
15:00	258	0	1	0	259	302	0	0	2	304
15:15	220	0	1	1	222	302	0	3	0	305
15:30	215	1	1	0	217	244	0	1	0	245
15:45	254	0	1	0	255	217	0	1	0	218
16:00	227	0	1	0	228	246	0	0	0	246
16:15	266	1	2	0	269	245	0	2	0	247
16:30	254	0	0	0	254	259	0	0	0	259
16:45	307	0	2	0	309	274	0	2	0	276
17:00	325	0	1	0	326	264	0	1	1	266
17:15	363	1	1	0	365	270	0	0	1	271
17:30	360	0	0	0	360	271	0	1	0	272
17:45	328	1	0	0	329	273	0	2	0	275
18:00	268	0	0	1	269	273	0	0	0	273
18:15	285	1	0	0	286	235	0	1	0	236
18:30	286	0	0	0	286	181	0	0	0	181

Wednesday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	14	0	0	0	14	2	0	0	0	2
0:15	12	0	0	0	12	2	0	0	0	2
0:30	5	0	0	0	5	5	0	0	0	5
0:45	11	0	0	0	11	3	0	0	0	3
1:00	2	0	0	0	2	7	0	0	0	7
1:15	3	0	0	0	3	7	0	0	7	14
1:30	4	0	0	0	4	5	0	0	0	5
1:45	2	0	0	1	3	1	0	0	0	1
2:00	3	0	0	0	3	2	0	0	0	2
2:15	2	0	0	0	2	2	0	0	0	2
2:30	2	0	0	0	2	1	0	1	0	2
2:45	4	0	0	0	4	0	0	0	1	1
3:00	3	0	0	0	3	0	0	0	0	0
3:15	1	0	0	0	1	1	0	0	0	1
3:30	2	0	0	0	2	6	0	0	0	6
3:45	2	0	0	0	2	3	0	0	0	3
4:00	3	0	0	0	3	4	0	0	0	4
4:15	4	0	0	0	4	4	0	0	0	4
4:30	8	0	0	0	8	7	0	1	0	8
4:45	7	0	0	0	7	8	0	0	0	8
5:00	6	0	0	0	6	18	0	0	0	18
5:15	10	0	0	0	10	24	0	0	0	24
5:30	12	0	0	0	12	42	0	1	0	43
5:45	22	0	0	0	22	52	0	1	0	53
6:00	27	0	0	0	27	64	0	1	1	66
6:15	46	0	1	0	47	91	0	0	1	92
6:30	65	0	1	0	66	115	0	3	1	119
6:45	98	0	0	1	99	147	0	2	0	149
7:00	183	1	3	0	187	255	0	0	0	255
7:15	266	0	0	0	266	293	0	2	0	295
7:30	342	1	1	0	344	408	0	3	0	411
7:45	272	0	1	0	273	479	1	2	7	489
8:00	288	0	2	0	290	419	0	2	4	425
8:15	279	0	0	1	280	394	0	0	6	400
8:30	259	0	2	0	261	309	0	1	0	310
8:45	206	1	5	1	213	256	0	2	0	258
9:00	178	0	1	0	179	247	0	1	0	248
9:15	156	1	0	0	157	164	0	1	2	167
9:30	176	0	2	0	178	191	0	1	1	193
9:45	138	0	3	1	142	153	0	2	0	155
10:00	136	1	2	0	139	141	0	0	1	142
10:15	109	1	0	0	110	138	0	1	0	139
10:30	113	0	1	0	114	122	0	1	0	123
10:45	111	0	2	0	113	116	0	1	0	117
11:00	78	0	2	1	81	117	0	0	0	117
11:15	130	1	0	0	131	121	0	0	0	121
11:30	138	0	1	0	139	126	0	2	0	128
11:45	154	0	0	0	154	128	0	1	0	129
12:00	158	0	0	0	158	191	0	0	0	191
12:15	181	1	1	1	184	198	0	4	0	202
12:30	243	1	1	2	247	204	1	0	0	205
12:45	151	0	0	0	151	166	0	1	0	167
13:00	118	0	2	0	120	179	0	2	0	181
13:15	124	1	2	0	127	161	0	0	0	161
13:30	130	0	0	0	130	160	0	0	0	160
13:45	152	1	1	0	154	123	0	1	0	124
14:00	142	0	0	0	142	138	0	2	0	140
14:15	172	1	0	0	173	152	0	1	0	153
14:30	176	0	1	1	178	173	0	1	0	174
14:45	238	1	1	0	240	206	0	1	0	207
15:00	191	0	2	1	194	272	0	1	0	273
15:15	198	1	1	0	200	299	0	3	0	302
15:30	214	0	2	0	216	235	0	0	1	236
15:45	236	1	2	0	239	242	0	1	0	243
16:00	236	0	1	1	238	241	0	0	0	241
16:15	270	1	1	0	272	260	1	1	0	262
16:30	246	0	2	1	249	284	0	0	0	284
16:45	292	0	1	0	293	260	0	1	0	261
17:00	329	0	0	0	329	297	0	0	0	297
17:15	349	1	0	0	350	268	0	2	1	271
17:30	358	0	1	2	361	279	0	1	0	280
17:45	306	0	1	0	307	272	0	1	0	273
18:00	353	0	1	0	354	292	0	1	0	293
18:15	269	1	0	0	270	237	0	0	0	237
18:30	215	0	0	0	215	193	1	0	0	194

Thursday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	22	0	0	0	22	13	0	0	0	13
0:15	7	0	0	0	7	1	0	0	0	1
0:30	7	0	0	0	7	2	0	0	0	2
0:45	9	0	0	0	9	6	0	0	0	6
1:00	5	0	0	0	5	7	0	0	0	7
1:15	5	0	0	0	5	4	0	0	4	8
1:30	6	0	0	0	6	0	0	0	0	0
1:45	3	0	0	0	3	0	0	0	0	0
2:00	7	0	0	0	7	1	0	0	0	1
2:15	0	0	0	0	0	0	0	0	0	0
2:30	5	0	0	0	5	1	0	0	0	1
2:45	1	0	0	0	1	1	0	0	0	1
3:00	3	0	0	0	3	2	0	0	0	2
3:15	1	0	0	0	1	4	0	1	0	5
3:30	6	0	0	0	6	6	0	0	0	6
3:45	5	0	0	0	5	2	0	0	0	2
4:00	4	0	0	0	4	3	0	0	0	3
4:15	3	0	0	0	3	5	0	0	0	5
4:30	4	0	0	0	4	11	0	1	0	12
4:45	6	0	0	0	6	7	0	0	0	7
5:00	9	0	0	0	9	15	0	0	2	17
5:15	7	0	0	0	7	24	0	0	0	24
5:30	12	0	0	0	12	35	0	1	0	36
5:45	17	0	1	0	18	47	0	0	0	47
6:00	18	0	0	0	18	54	0	2	1	57
6:15	29	0	1	0	30	91	0	0	0	91
6:30	58	0	1	0	59	125	0	0	0	125
6:45	85	0	1	1	87	161	0	1	1	163
7:00	150	0	1	1	152	258	0	1	0	259
7:15	261	1	0	0	262	335	0	1	0	336
7:30	346	0	0	0	346	417	0	0	1	418
7:45	250	2	0	1	253	475	1	1	2	479
8:00	247	0	0	1	248	439	1	4	3	447
8:15	233	0	3	0	236	389	1	2	5	397
8:30	211	1	2	0	214	272	0	2	1	275
8:45	233	0	4	1	238	276	0	1	0	277
9:00	177	0	3	3	183	225	0	2	0	227
9:15	146	1	1	1	149	206	0	2	0	208
9:30	120	0	2	0	122	181	0	3	3	187
9:45	145	1	2	1	149	153	0	3	0	156
10:00	126	1	5	2	134	134	0	1	0	135
10:15	116	0	0	1	117	139	0	1	0	140
10:30	114	0	3	1	118	119	0	1	0	120
10:45	97	1	0	0	98	130	0	1	0	131
11:00	101	0	2	2	105	125	0	1	0	126
11:15	115	0	1	0	116	123	0	2	1	126
11:30	99	1	0	1	101	133	0	0	0	133
11:45	99	1	2	0	102	147	0	1	0	148
12:00	119	0	0	1	120	144	0	3	0	147
12:15	108	0	0	2	110	164	0	0	0	164
12:30	129	1	4	3	137	141	0	1	1	143
12:45	121	1	1	1	124	149	0	1	0	150
13:00	126	0	1	0	127	137	0	3	1	141
13:15	125	1	1	0	127	135	0	1	0	136
13:30	124	0	1	0	125	136	0	0	0	136
13:45	150	0	0	0	150	134	0	1	0	135
14:00	140	0	1	0	141	157	0	0	0	157
14:15	171	1	1	0	173	169	0	2	0	171
14:30	216	1	0	0	217	207	0	1	0	208
14:45	230	1	1	0	232	214	1	1	1	217
15:00	246	0	1	0	247	289	0	1	0	290
15:15	249	2	1	0	252	303	0	2	1	306
15:30	198	0	3	1	202	234	0	2	0	236
15:45	238	0	1	0	239	244	0	1	0	245
16:00	249	0	5	0	254	224	0	0	1	225
16:15	242	1	2	0	245	259	0	1	0	260
16:30	270	0	0	1	271	275	0	1	1	277
16:45	280	0	3	0	283	294	0	1	0	295
17:00	268	0	1	0	269	262	0	0	0	262
17:15	348	1	2	0	351	279	0	1	0	280
17:30	356	0	1	0	357	270	0	1	0	271
17:45	310	1	0	1	312	267	0	1	0	268
18:00	316	0	3	0	319	242	0	0	0	242
18:15	287	1	2	0	290	229	0	1	0	230
18:30	260	0	1	0	261	222	0	1	0	223

Friday

Time	EB Bike & Car	EB Buses	EB Mid-size Truck	EB Large Truck	EB Total	WB Bike & Car	WB Buses	WB Mid-size Truck	WB Large Truck	WB Total
0:00	12	0	0	0	12	5	0	0	0	5
0:15	8	0	0	0	8	8	0	0	0	8
0:30	11	0	0	0	11	3	0	0	0	3
0:45	7	0	0	0	7	1	0	0	0	1
1:00	7	0	0	0	7	4	0	0	0	4
1:15	3	0	0	0	3	2	0	0	2	4
1:30	7	0	0	0	7	2	0	0	0	2
1:45	3	0	0	0	3	3	0	0	0	3
2:00	5	0	0	0	5	2	0	0	0	2
2:15	4	0	0	0	4	0	0	0	0	0
2:30	3	0	0	0	3	2	0	1	0	3
2:45	2	0	0	0	2	2	0	0	0	2
3:00	6	0	0	0	6	3	0	1	0	4
3:15	5	0	0	0	5	5	0	0	0	5
3:30	5	0	0	0	5	4	0	0	0	4
3:45	3	0	2	0	5	6	0	0	0	6
4:00	2	0	0	0	2	6	0	0	0	6
4:15	6	0	0	0	6	7	0	0	0	7
4:30	6	0	0	0	6	17	0	2	0	19
4:45	4	0	0	0	4	5	0	0	0	5
5:00	7	0	0	0	7	17	0	0	0	17
5:15	7	0	1	0	8	18	0	0	0	18
5:30	11	0	0	0	11	32	0	1	0	33
5:45	29	0	0	0	29	55	0	0	0	55
6:00	17	0	1	0	18	58	0	0	0	58
6:15	40	0	0	0	40	87	0	0	0	87
6:30	55	0	3	0	58	105	0	0	0	105
6:45	110	0	0	0	110	128	0	3	1	132
7:00	151	1	0	0	152	257	0	0	0	257
7:15	285	0	4	2	291	285	0	2	0	287
7:30	371	1	1	1	374	391	0	2	0	393
7:45	267	0	0	0	267	462	0	3	4	469
8:00	224	1	0	1	226	463	0	5	4	472
8:15	255	0	1	0	256	394	1	5	1	401
8:30	197	0	4	0	201	292	1	1	0	294
8:45	204	2	3	0	209	252	0	1	0	253
9:00	146	0	0	0	146	242	0	2	0	244
9:15	142	1	2	1	146	183	1	0	1	185
9:30	140	0	3	0	143	182	0	2	0	184
9:45	122	0	0	1	123	174	0	3	1	178
10:00	153	0	1	0	154	170	0	0	0	170
10:15	122	1	3	0	126	142	0	1	0	143
10:30	136	0	1	0	137	146	0	1	0	147
10:45	119	0	3	0	122	160	0	3	0	163
11:00	137	0	2	0	139	130	0	1	1	132
11:15	118	2	0	0	120	122	0	0	0	122
11:30	143	0	0	0	143	164	0	0	0	164
11:45	142	0	1	0	143	158	0	1	0	159
12:00	171	0	0	0	171	150	0	1	0	151
12:15	160	1	0	2	163	169	0	0	1	170
12:30	154	0	1	0	155	155	0	0	1	156
12:45	156	0	2	0	158	136	1	0	1	138
13:00	158	0	0	0	158	162	2	2	0	166
13:15	137	1	1	0	139	160	0	0	1	161
13:30	148	0	3	0	151	174	0	2	0	176
13:45	137	0	2	0	139	158	0	2	0	160
14:00	160	0	2	0	162	171	0	0	0	171
14:15	157	1	1	0	159	183	0	2	0	185
14:30	219	0	0	2	221	229	0	1	0	230
14:45	245	1	1	0	247	262	0	1	0	263
15:00	266	0	2	1	269	306	0	0	1	307
15:15	246	1	3	1	251	289	0	1	0	290
15:30	235	0	0	0	235	267	1	2	1	271
15:45	250	0	3	0	253	262	1	3	0	266
16:00	249	1	3	0	253	245	0	1	2	248
16:15	282	1	2	0	285	245	0	1	0	246
16:30	266	0	2	0	268	288	0	0	0	288
16:45	295	0	0	1	296	286	0	0	1	287
17:00	291	0	1	0	292	262	0	1	0	263
17:15	360	1	2	0	363	291	0	1	0	292
17:30	361	0	2	1	364	282	0	0	0	282
17:45	360	1	0	0	361	246	0	1	0	247
18:00	314	0	0	0	314	294	0	0	0	294
18:15	268	1	1	0	270	278	0	1	1	280
18:30	280	0	0	0	280	225	0	1	0	226

Crystal Spring Upland School

Corrido **Ralston Avenue** 5-day, 24-hour Mechanical Tube Traffic Counts
Locatio **between Tahoe Drive and Davis Drive**
Date: **3/3/2014 - 3/7/2014**

Time	Monday										Tuesday									
	EB					WB					EB					WB				
18:45	194	0	0	0	194	163	0	0	0	163	218	0	1	0	219	175	0	1	0	176

Time	Wednesday										Thursday									
	EB					WB					EB					WB				
18:45	215	0	0	0	215	155	0	2	0	157	235	0	1	0	236	183	1	1	0	185

Time	Friday									
	EB					WB				
18:45	258	0	0	0	258	217	0	0	0	217

Crystal Spring Upland School

Corrido **Ralston Avenue** 5-day, 24-hour Mechanical Tube Traffic Counts
Locatio **between Tahoe Drive and Davis Drive**
Date: **3/3/2014 - 3/7/2014**

Time	Monday										Tuesday									
	EB					WB					EB					WB				
19:00	149	0	0	1	150	130	0	1	0	131	161	0	0	0	161	162	0	1	0	163
19:15	147	0	0	0	147	124	0	0	0	124	146	0	0	0	146	167	0	1	0	168
19:30	132	0	0	0	132	91	0	0	0	91	117	0	0	0	117	120	0	0	0	120
19:45	90	0	0	0	90	94	0	0	0	94	105	0	0	0	105	113	0	0	0	113
20:00	94	0	0	0	94	72	0	0	0	72	88	0	0	0	88	86	0	0	0	86
20:15	69	0	0	0	69	72	0	0	0	72	93	0	0	0	93	95	0	0	0	95
20:30	77	0	0	0	77	62	0	0	0	62	79	0	0	0	79	75	0	0	0	75
20:45	59	0	1	0	60	58	0	0	0	58	72	0	0	0	72	75	0	0	0	75
21:00	66	0	0	0	66	72	0	1	0	73	75	0	1	0	76	96	0	0	0	96
21:15	69	0	1	0	70	54	0	0	0	54	70	0	0	0	70	66	0	1	0	67
21:30	48	0	0	0	48	43	0	0	1	44	74	0	0	0	74	71	0	0	1	72
21:45	60	0	0	0	60	36	0	0	0	36	57	0	0	0	57	28	0	0	0	28
22:00	42	0	0	0	42	30	0	0	0	30	35	0	0	0	35	45	0	0	0	45
22:15	43	0	0	0	43	28	0	0	0	28	39	0	0	0	39	34	0	0	0	34
22:30	30	0	1	0	31	21	0	1	0	22	34	0	0	0	34	18	0	0	0	18
22:45	31	0	0	0	31	21	0	0	0	21	42	0	0	0	42	16	0	1	0	17
23:00	14	0	0	0	14	12	0	0	0	12	26	0	0	0	26	27	0	0	0	27
23:15	20	0	0	0	20	11	0	0	0	11	25	0	0	0	25	17	0	0	0	17
23:30	13	0	0	0	13	12	0	0	0	12	25	0	0	0	25	17	0	0	0	17
23:45	10	0	0	0	10	6	0	0	0	6	13	0	0	0	13	7	0	0	0	7
Total	11,208	20	46	18	11,292	11,868	8	38	16	11,930	11,575	17	54	12	11,658	12,635	6	71	22	12,734

Time	Wednesday										Thursday									
	EB					WB					EB					WB				
19:00	180	0	0	1	181	154	0	1	0	155	192	0	0	0	192	177	0	1	1	179
19:15	157	0	0	1	158	128	0	0	0	128	140	0	1	0	141	141	0	0	0	141
19:30	133	0	0	0	133	114	0	0	0	114	132	0	0	0	132	114	0	0	0	114
19:45	89	0	0	0	89	153	0	0	0	153	108	0	0	0	108	104	0	0	0	104
20:00	103	0	0	0	103	167	0	0	1	168	96	0	0	0	96	110	0	0	0	110
20:15	93	0	0	0	93	165	0	0	0	165	103	0	1	0	104	74	0	0	0	74
20:30	79	0	0	0	79	77	0	0	0	77	88	0	0	0	88	86	0	0	0	86
20:45	86	0	0	0	86	68	0	0	0	68	105	0	1	0	106	74	0	0	0	74
21:00	56	0	0	0	56	83	0	0	0	83	78	0	0	0	78	75	0	1	0	76
21:15	65	0	0	0	65	56	0	0	0	56	77	0	0	0	77	64	0	0	0	64
21:30	63	0	0	0	63	58	0	0	0	58	58	0	0	0	58	54	0	0	1	55
21:45	62	0	0	0	62	62	0	0	0	62	74	0	0	0	74	37	0	0	0	37
22:00	56	0	0	0	56	34	0	0	0	34	52	0	0	0	52	33	0	0	0	33
22:15	34	0	0	0	34	32	0	0	0	32	41	0	0	0	41	29	0	0	0	29
22:30	36	0	0	0	36	22	0	0	0	22	44	0	0	0	44	21	0	0	0	21
22:45	35	0	0	0	35	21	0	0	0	21	38	0	0	0	38	22	0	0	0	22
23:00	36	0	0	0	36	20	0	0	0	20	29	0	1	0	30	18	0	0	0	18
23:15	23	0	0	0	23	14	0	0	0	14	24	0	0	0	24	15	0	0	0	15
23:30	16	0	0	0	16	16	0	0	0	16	22	0	0	0	22	10	0	0	0	10
23:45	21	0	0	0	21	6	0	0	0	6	12	0	0	0	12	11	0	0	0	11
Total	11,777	18	54	17	11,866	12,787	4	61	35	12,887	11,354	22	77	27	11,480	12,536	5	67	32	12,640

Time	Friday									
	EB					WB				
19:00	186	0	1	0	187	195	0	1	0	196
19:15	152	0	1	0	153	189	0	0	0	189
19:30	123	0	0	0	123	184	0	0	0	184
19:45	114	0	0	0	114	163	0	0	0	163
20:00	107	0	0	0	107	119	0	0	1	120
20:15	96	0	1	0	97	97	0	0	0	97
20:30	89	0	2	0	91	78	0	0	0	78
20:45	62	0	0	0	62	91	0	1	0	92
21:00	67	0	0	0	67	71	0	0	0	71
21:15	70	0	0	0	70	73	0	0	1	74
21:30	70	0	0	0	70	68	0	0	0	68
21:45	77	0	0	0	77	83	0	0	0	83
22:00	66	0	0	0	66	65	0	0	0	65
22:15	58	0	0	0	58	51	0	0	0	51
22:30	54	0	1	0	55	43	0	0	0	43
22:45	41	0	1	0	42	28	0	0	0	28
23:00	35	0	0	0	35	31	0	0	0	31
23:15	36	0	1	0	37	26	0	0	0	26
23:30	29	0	0	0	29	22	0	0	0	22
23:45	28	0	0	0	28	20	0	0	0	20
Total	12,102	19	78	14	12,213	13,445	8	67	27	13,547

TRAFFIC CONDITIONS ANALYSIS SHEETS (SYNCHRO)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	157	794	41	212	430	149	59	572	173	290	902	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00	0.98	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3503		1610	3382	1466	1770	3539	1548	1770	3539	1497
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3503		1610	3382	1466	1770	3539	1548	1770	3539	1497
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	167	845	44	230	467	162	63	615	186	326	1013	85
RTOR Reduction (vph)	0	3	0	0	0	131	0	0	120	0	0	48
Lane Group Flow (vph)	167	886	0	207	490	31	63	615	66	326	1013	37
Confl. Peds. (#/hr)	45		33	33		45	27		6	6		27
Confl. Bikes (#/hr)			1			1			4			2
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	32.7	32.7		23.1	23.1	23.1	8.2	30.2	30.2	19.0	41.0	41.0
Effective Green, g (s)	32.7	32.7		23.1	23.1	23.1	8.2	30.2	30.2	19.0	41.0	41.0
Actuated g/C Ratio	0.27	0.27		0.19	0.19	0.19	0.07	0.25	0.25	0.16	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	935	954		309	651	282	120	890	389	280	1209	511
v/s Ratio Prot	0.05	c0.25		0.13	c0.14		0.04	0.17		c0.18	c0.29	
v/s Ratio Perm						0.02			0.04			0.02
v/c Ratio	0.18	0.93		0.67	0.75	0.11	0.53	0.69	0.17	1.16	0.84	0.07
Uniform Delay, d1	33.4	42.5		44.9	45.8	40.0	54.0	40.7	35.1	50.5	36.4	26.7
Progression Factor	1.00	1.00		0.39	0.41	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	14.7		4.9	4.5	0.2	4.1	4.4	0.9	105.8	7.0	0.3
Delay (s)	33.5	57.2		22.4	23.1	12.7	58.1	45.1	36.1	156.3	43.5	26.9
Level of Service	C	E		C	C	B	E	D	D	F	D	C
Approach Delay (s)		53.5			21.0			44.1			68.3	
Approach LOS		D			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	49.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	897	444	14	531	7	333	60	66	16	48	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1520	1770	3528		1681	1710	1529	1770	1621	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1520	1770	3528		1681	1710	1529	1770	1621	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.78	0.78	0.78	0.79	0.79	0.79
Adj. Flow (vph)	40	934	462	16	617	8	427	77	85	20	61	222
RTOR Reduction (vph)	0	0	78	0	1	0	0	0	67	0	112	0
Lane Group Flow (vph)	40	934	384	16	624	0	252	252	18	20	171	0
Confl. Peds. (#/hr)	30		7	7		30	5		19	19		5
Confl. Bikes (#/hr)			4			5						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.3	37.7	37.7	1.5	34.9		19.6	19.6	19.6	15.4	15.4	
Effective Green, g (s)	4.3	37.7	37.7	1.5	34.9		19.6	19.6	19.6	15.4	15.4	
Actuated g/C Ratio	0.05	0.41	0.41	0.02	0.38		0.21	0.21	0.21	0.17	0.17	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	83	1462	628	29	1350		361	367	328	298	273	
v/s Ratio Prot	c0.02	c0.26		0.01	0.18		c0.15	0.15		0.01	c0.11	
v/s Ratio Perm			0.25						0.01			
v/c Ratio	0.48	0.64	0.61	0.55	0.46		0.70	0.69	0.06	0.07	0.63	
Uniform Delay, d1	42.4	21.3	21.0	44.5	21.1		33.1	33.0	28.4	31.9	35.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.4	1.3	2.5	20.8	0.5		6.2	5.7	0.1	0.1	5.0	
Delay (s)	46.7	22.6	23.5	65.3	21.6		39.3	38.7	28.5	32.0	40.2	
Level of Service	D	C	C	E	C		D	D	C	C	D	
Approach Delay (s)		23.6			22.7			37.5			39.7	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	91.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	9	1366	1049	26	84	52
Peak Hour Factor	0.98	0.98	0.82	0.82	0.68	0.68
Hourly flow rate (vph)	9	1394	1279	32	124	76

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	474	929	853	458	200
Volume Left (vph)	9	0	0	0	124
Volume Right (vph)	0	0	0	32	76
Hadj (s)	0.04	0.03	0.03	-0.01	-0.07
Departure Headway (s)	6.7	6.7	6.7	6.7	6.9
Degree Utilization, x	0.88	1.73	1.60	0.85	0.38
Capacity (veh/h)	530	542	539	532	517
Control Delay (s)	40.5	353.6	294.2	35.8	14.0
Approach Delay (s)	247.8		203.9		14.0
Approach LOS	F		F		B

Intersection Summary			
Delay	212.0		
Level of Service	F		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	39	1309	978	104	71	82
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.83	0.83	0.58	0.58
Hourly flow rate (vph)	41	1378	1178	125	122	141
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1313				2710	1250
vC1, stage 1 conf vol					1250	
vC2, stage 2 conf vol					1460	
vCu, unblocked vol	1313				2710	1250
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	92				20	32
cM capacity (veh/h)	523				153	209

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	41	1378	1304	264
Volume Left	41	0	0	122
Volume Right	0	0	125	141
cSH	523	1700	1700	254
Volume to Capacity	0.08	0.81	0.77	1.04
Queue Length 95th (ft)	6	0	0	264
Control Delay (s)	12.5	0.0	0.0	109.6
Lane LOS	B			F
Approach Delay (s)	0.4		0.0	109.6
Approach LOS				F

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1068	21	216	844	6	285
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.78	0.78	0.72	0.72
Hourly flow rate (vph)	1161	23	277	1082	8	396
Pedestrians	3			1	6	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1190		2817	1179
vC1, stage 1 conf vol					1178	
vC2, stage 2 conf vol					1639	
vCu, unblocked vol			1190		2817	1179
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			53		90	0
cM capacity (veh/h)			584		84	231

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1184	277	1082	8	396
Volume Left	0	277	0	8	0
Volume Right	23	0	0	0	396
cSH	1700	584	1700	84	231
Volume to Capacity	0.70	0.47	0.64	0.10	1.72
Queue Length 95th (ft)	0	63	0	8	657
Control Delay (s)	0.0	16.6	0.0	52.3	376.9
Lane LOS		C		F	F
Approach Delay (s)	0.0	3.4		370.2	
Approach LOS				F	

Intersection Summary			
Average Delay	52.3		
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	1113	692	60	44	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.82	0.82	0.73	0.73
Hourly flow rate (vph)	68	1237	844	73	60	108
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	924				2260	887
vC1, stage 1 conf vol					887	
vC2, stage 2 conf vol					1372	
vCu, unblocked vol	924				2260	887
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	91				68	68
cM capacity (veh/h)	735				186	341

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	68	1237	917	168
Volume Left	68	0	0	60
Volume Right	0	0	73	108
cSH	735	1700	1700	262
Volume to Capacity	0.09	0.73	0.54	0.64
Queue Length 95th (ft)	8	0	0	100
Control Delay (s)	10.4	0.0	0.0	40.4
Lane LOS	B			E
Approach Delay (s)	0.5		0.0	40.4
Approach LOS				E

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	780	224	165	523	64	473	175	116	165	179	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1529	1770	3465		3433	1742		1770	1773	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1529	1770	3465		3433	1742		1770	1773	
Peak-hour factor, PHF	0.89	0.89	0.89	0.77	0.77	0.77	0.95	0.95	0.95	0.75	0.75	0.75
Adj. Flow (vph)	67	876	252	214	679	83	498	184	122	220	239	77
RTOR Reduction (vph)	0	0	76	0	8	0	0	22	0	0	10	0
Lane Group Flow (vph)	67	876	176	214	754	0	498	284	0	220	306	0
Confl. Peds. (#/hr)	9		5	5		9	29		1	1		29
Confl. Bikes (#/hr)			1									
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	8.5	33.6	33.6	12.6	37.7		21.2	21.2		21.7	21.7	
Effective Green, g (s)	8.5	33.6	33.6	12.6	37.7		21.2	21.2		21.7	21.7	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.36		0.20	0.20		0.21	0.21	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	142	1126	486	211	1237		689	349		363	364	
v/s Ratio Prot	0.04	c0.25		c0.12	0.22		0.15	c0.16		0.12	c0.17	
v/s Ratio Perm			0.11									
v/c Ratio	0.47	0.78	0.36	1.01	0.61		0.72	0.81		0.61	0.84	
Uniform Delay, d1	46.4	32.6	27.7	46.5	27.9		39.5	40.3		38.1	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.3	4.4	1.3	65.7	1.5		4.0	14.1		3.3	16.1	
Delay (s)	49.8	37.0	29.0	112.2	29.4		43.5	54.4		41.4	56.4	
Level of Service	D	D	C	F	C		D	D		D	E	
Approach Delay (s)		36.0			47.6			47.6			50.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	105.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	871	243	9	942	96	421	59	22	120	71	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (prot)	1770	3400		1770	3539	1548	1681	1686		1770	1624	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (perm)	1770	3400		1770	3539	1548	1681	1686		1770	1624	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	262	1037	289	10	1024	104	526	74	28	133	79	462
RTOR Reduction (vph)	0	17	0	0	0	61	0	3	0	0	191	0
Lane Group Flow (vph)	262	1309	0	10	1024	43	316	309	0	133	350	0
Confl. Peds. (#/hr)			4	4					4	4		
Confl. Bikes (#/hr)						2						
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	50.8		1.1	34.4	34.4	23.0	23.0		16.1	16.1	
Effective Green, g (s)	17.5	50.8		1.1	34.4	34.4	23.0	23.0		16.1	16.1	
Actuated g/C Ratio	0.16	0.47		0.01	0.32	0.32	0.21	0.21		0.15	0.15	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	1599		18	1127	493	357	359		263	242	
v/s Ratio Prot	c0.15	0.38		0.01	c0.29		c0.19	0.18		0.08	c0.22	
v/s Ratio Perm						0.03						
v/c Ratio	0.92	0.82		0.56	0.91	0.09	0.89	0.86		0.51	1.45	
Uniform Delay, d1	44.5	24.6		53.2	35.3	25.8	41.2	41.0		42.3	46.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.4	4.0		19.4	11.6	0.2	21.5	18.0		0.6	223.3	
Delay (s)	76.0	28.6		72.6	46.9	26.0	62.7	58.9		42.8	269.2	
Level of Service	E	C		E	D	C	E	E		D	F	
Approach Delay (s)		36.5			45.2			60.8			224.5	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	74.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1291	158	49	1693	89	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3460		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3460		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.69	0.69
Adj. Flow (vph)	1403	172	56	1946	129	38
RTOR Reduction (vph)	6	0	0	0	0	32
Lane Group Flow (vph)	1569	0	56	1946	129	6
Confl. Peds. (#/hr)		15	15		20	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	56.5		7.9	68.4	15.7	15.7
Effective Green, g (s)	56.5		7.9	68.4	15.7	15.7
Actuated g/C Ratio	0.61		0.08	0.73	0.17	0.17
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2099		150	2600	298	266
v/s Ratio Prot	0.45		0.03	c0.55	c0.07	
v/s Ratio Perm						0.00
v/c Ratio	0.75		0.37	0.75	0.43	0.02
Uniform Delay, d1	13.2		40.3	7.3	34.7	32.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2		2.1	1.8	1.4	0.1
Delay (s)	15.4		42.4	9.1	36.1	32.4
Level of Service	B		D	A	D	C
Approach Delay (s)	15.4			10.0	35.2	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1169	0	0	1758	0	279
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.91	0.91	0.58	0.58
Hourly flow rate (vph)	1499	0	0	1932	0	481
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1055			785		
pX, platoon unblocked			0.85		0.69	0.85
vC, conflicting volume			1499		2465	749
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1229		1237	345
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	13
cM capacity (veh/h)			477		116	552

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	749	749	966	966	481
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	481
cSH	1700	1700	1700	1700	552
Volume to Capacity	0.44	0.44	0.57	0.57	0.87
Queue Length 95th (ft)	0	0	0	0	243
Control Delay (s)	0.0	0.0	0.0	0.0	40.9
Lane LOS					E
Approach Delay (s)	0.0		0.0		40.9
Approach LOS					E

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1161	131	197	1590	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.94	0.94	1.00	1.00
Hourly flow rate (vph)	1382	156	210	1691	0	0
Pedestrians					3	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)	611			1229		
pX, platoon unblocked			0.81		0.78	0.81
vC, conflicting volume			1541		2728	772
vC1, stage 1 conf vol					1463	
vC2, stage 2 conf vol					1265	
vCu, unblocked vol			1194		1534	242
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			55		100	100
cM capacity (veh/h)			469		164	613

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	921	617	210	846	846
Volume Left	0	0	210	0	0
Volume Right	0	156	0	0	0
cSH	1700	1700	469	1700	1700
Volume to Capacity	0.54	0.36	0.45	0.50	0.50
Queue Length 95th (ft)	0	0	57	0	0
Control Delay (s)	0.0	0.0	18.7	0.0	0.0
Lane LOS			C		
Approach Delay (s)	0.0		2.1		
Approach LOS					

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1200	27	110	1469	19	65
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.91	0.91	0.75	0.75
Hourly flow rate (vph)	1463	33	121	1614	25	87
Pedestrians					130	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					11	
Right turn flare (veh)						
Median type	Raised			TWLTL		
Median storage veh)	1			2		
Upstream signal (ft)	441					
pX, platoon unblocked			0.81		0.81	0.81
vC, conflicting volume			1626		2659	878
vC1, stage 1 conf vol					1610	
vC2, stage 2 conf vol					1049	
vCu, unblocked vol			1294		2576	364
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			68		79	81
cM capacity (veh/h)			382		123	454

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	976	521	121	807	807	112
Volume Left	0	0	121	0	0	25
Volume Right	0	33	0	0	0	87
cSH	1700	1700	382	1700	1700	282
Volume to Capacity	0.57	0.31	0.32	0.47	0.47	0.40
Queue Length 95th (ft)	0	0	33	0	0	46
Control Delay (s)	0.0	0.0	18.7	0.0	0.0	26.0
Lane LOS			C			D
Approach Delay (s)	0.0		1.3			26.0
Approach LOS						D

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Ralston Ave/Tahoe Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	1111	1458	25	113	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3529		1770	1509
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3529		1770	1509
Peak-hour factor, PHF	0.81	0.81	0.89	0.89	0.64	0.64
Adj. Flow (vph)	47	1372	1638	28	177	181
RTOR Reduction (vph)	0	0	1	0	0	146
Lane Group Flow (vph)	47	1372	1665	0	177	35
Confl. Peds. (#/hr)	1			1		30
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.4	61.3	51.9		16.9	16.9
Effective Green, g (s)	5.4	61.3	51.9		16.9	16.9
Actuated g/C Ratio	0.06	0.70	0.60		0.19	0.19
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	109	2487	2100		343	292
v/s Ratio Prot	0.03	c0.39	c0.47		c0.10	
v/s Ratio Perm						0.02
v/c Ratio	0.43	0.55	0.79		0.52	0.12
Uniform Delay, d1	39.4	6.3	13.5		31.5	29.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	0.6	2.6		1.7	0.3
Delay (s)	43.1	6.9	16.1		33.2	29.3
Level of Service	D	A	B		C	C
Approach Delay (s)		8.1	16.1		31.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	87.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	925	106	213	1406	251	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3437		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3437		1770	3539	1770	1583
Peak-hour factor, PHF	0.77	0.77	0.92	0.92	0.78	0.78
Adj. Flow (vph)	1201	138	232	1528	322	292
RTOR Reduction (vph)	7	0	0	0	0	195
Lane Group Flow (vph)	1332	0	232	1528	322	97
Confl. Peds. (#/hr)		53	53		59	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	50.1		16.4	70.5	24.8	24.8
Effective Green, g (s)	50.1		16.4	70.5	24.8	24.8
Actuated g/C Ratio	0.48		0.16	0.68	0.24	0.24
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1666		281	2415	424	380
v/s Ratio Prot	c0.39		c0.13	0.43	c0.18	
v/s Ratio Perm						0.06
v/c Ratio	0.80		0.83	0.63	0.76	0.26
Uniform Delay, d1	22.4		42.1	9.2	36.5	31.8
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7		18.4	1.1	8.1	0.5
Delay (s)	26.1		60.4	10.3	44.6	32.3
Level of Service	C		E	B	D	C
Approach Delay (s)	26.1			16.9	38.7	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

1: El Camino Real & Ralston Ave

AM Existing

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	167	889	207	490	162	63	615	186	326	1013	85
v/c Ratio	0.18	0.93	0.67	0.75	0.39	0.46	0.69	0.37	1.16	0.82	0.15
Control Delay	35.9	59.9	27.4	25.7	4.4	63.0	44.9	9.9	150.4	43.1	9.1
Queue Delay	0.0	1.3	1.4	1.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	61.2	28.9	26.9	5.1	63.0	44.9	9.9	150.4	43.1	9.1
Queue Length 50th (ft)	54	~405	146	209	12	47	223	15	~300	376	6
Queue Length 95th (ft)	84	#537	145	140	10	93	287	74	#475	#475	42
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	935	957	348	732	444	177	943	530	280	1228	567
Starvation Cap Reductn	0	0	44	92	100	0	0	0	0	0	0
Spillback Cap Reductn	0	16	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.94	0.68	0.77	0.47	0.36	0.65	0.35	1.16	0.82	0.15

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	40	934	462	16	625	252	252	85	20	283
v/c Ratio	0.26	0.63	0.65	0.15	0.47	0.68	0.67	0.21	0.07	0.73
Control Delay	51.5	24.4	21.3	54.9	24.7	46.1	45.4	8.8	37.7	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	24.4	21.3	54.9	24.7	46.1	45.4	8.8	37.7	32.2
Queue Length 50th (ft)	20	195	130	8	147	126	125	0	9	71
Queue Length 95th (ft)	67	373	329	35	232	242	242	25	31	161
Internal Link Dist (ft)		847			519		540			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	192	2096	950	107	1919	528	537	539	492	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.45	0.49	0.15	0.33	0.48	0.47	0.16	0.04	0.52

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	876	252	214	762	498	306	220	316
v/c Ratio	0.40	0.79	0.45	1.01	0.61	0.72	0.82	0.60	0.84
Control Delay	53.0	40.1	19.5	113.1	32.1	45.7	54.9	45.8	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	40.1	19.5	113.1	32.1	45.7	54.9	45.8	59.1
Queue Length 50th (ft)	45	302	77	~167	242	167	186	140	204
Queue Length 95th (ft)	88	376	152	#251	260	224	#312	177	243
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	212	1118	559	212	1254	789	421	407	417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.78	0.45	1.01	0.61	0.63	0.73	0.54	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	262	1326	10	1024	104	316	312	133	541
v/c Ratio	0.89	0.80	0.13	0.97	0.20	0.86	0.84	0.49	1.24
Control Delay	74.4	27.9	53.4	60.0	9.6	62.1	59.0	49.2	147.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	27.9	53.4	60.0	9.6	62.1	59.0	49.2	147.8
Queue Length 50th (ft)	179	377	7	~387	8	218	212	87	~334
Queue Length 95th (ft)	#287	#525	25	#538	49	282	274	152	#553
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	322	1664	271	1052	522	435	439	271	438
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.80	0.04	0.97	0.20	0.73	0.71	0.49	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1575	56	1946	129	38
v/c Ratio	0.74	0.30	0.75	0.43	0.13
Control Delay	17.8	47.7	10.7	40.8	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	47.7	10.7	40.8	12.6
Queue Length 50th (ft)	313	29	261	67	0
Queue Length 95th (ft)	565	76	481	102	17
Internal Link Dist (ft)	705		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2430	278	3055	614	574
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.65	0.20	0.64	0.21	0.07

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	47	1372	1666	177	181
v/c Ratio	0.26	0.56	0.78	0.51	0.41
Control Delay	42.9	8.1	19.1	37.3	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	8.1	19.1	37.3	8.1
Queue Length 50th (ft)	27	205	437	93	0
Queue Length 95th (ft)	55	214	573	109	10
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	341	2987	2210	618	639
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.46	0.75	0.29	0.28

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1339	232	1528	322	292
v/c Ratio	0.80	0.83	0.63	0.76	0.51
Control Delay	27.2	70.0	11.3	50.1	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.2	70.0	11.3	50.1	10.0
Queue Length 50th (ft)	380	158	274	205	19
Queue Length 95th (ft)	407	#345	415	271	55
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2010	280	2768	578	689
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.67	0.83	0.55	0.56	0.42

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	203	606	63	210	644	249	127	771	209	254	730	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3462		1610	3385	1444	1770	3539	1537	1770	3539	1447
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3462		1610	3385	1444	1770	3539	1537	1770	3539	1447
Peak-hour factor, PHF	0.98	0.98	0.98	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	207	618	64	216	664	257	135	820	222	279	802	169
RTOR Reduction (vph)	0	6	0	0	0	194	0	0	108	0	0	96
Lane Group Flow (vph)	207	676	0	194	686	63	135	820	114	279	802	73
Confl. Peds. (#/hr)	55		51	51		55	48		14	14		48
Confl. Bikes (#/hr)			3			2			1			1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	26.2	26.2		29.4	29.4	29.4	13.1	33.6	33.6	15.8	36.3	36.3
Effective Green, g (s)	26.2	26.2		29.4	29.4	29.4	13.1	33.6	33.6	15.8	36.3	36.3
Actuated g/C Ratio	0.22	0.22		0.24	0.24	0.24	0.11	0.28	0.28	0.13	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	749	755		394	829	353	193	990	430	233	1070	437
v/s Ratio Prot	0.06	c0.20		0.12	c0.20		0.08	c0.23		c0.16	c0.23	
v/s Ratio Perm						0.04			0.07			0.05
v/c Ratio	0.28	0.90		0.49	0.83	0.18	0.70	0.83	0.27	1.20	0.75	0.17
Uniform Delay, d1	39.0	45.6		38.9	42.9	35.8	51.6	40.5	33.6	52.1	37.7	30.8
Progression Factor	1.00	1.00		1.04	1.05	3.68	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	13.1		3.6	7.9	0.9	10.6	8.0	1.5	122.8	4.8	0.8
Delay (s)	39.2	58.7		44.1	53.0	132.7	62.1	48.4	35.1	174.9	42.6	31.6
Level of Service	D	E		D	D	F	E	D	D	F	D	C
Approach Delay (s)		54.1			69.5			47.5			70.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	60.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	735	244	36	782	33	304	65	115	32	52	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1500	1770	3501		1681	1714	1524	1770	1638	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1500	1770	3501		1681	1714	1524	1770	1638	
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.91	0.91	0.91	0.73	0.73	0.73
Adj. Flow (vph)	55	766	254	40	879	37	334	71	126	44	71	158
RTOR Reduction (vph)	0	0	47	0	2	0	0	0	69	0	68	0
Lane Group Flow (vph)	55	766	207	40	914	0	200	205	57	44	161	0
Confl. Peds. (#/hr)	41		13	13		41	14		22	22		14
Confl. Bikes (#/hr)			3			2						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	35.2	35.2	3.1	33.8		18.3	18.3	18.3	16.2	16.2	
Effective Green, g (s)	4.5	35.2	35.2	3.1	33.8		18.3	18.3	18.3	16.2	16.2	
Actuated g/C Ratio	0.05	0.39	0.39	0.03	0.38		0.20	0.20	0.20	0.18	0.18	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	88	1387	587	61	1317		342	349	310	319	295	
v/s Ratio Prot	c0.03	0.22		0.02	c0.26		0.12	c0.12		0.02	c0.10	
v/s Ratio Perm			0.14						0.04			
v/c Ratio	0.62	0.55	0.35	0.66	0.69		0.58	0.59	0.18	0.14	0.55	
Uniform Delay, d1	41.8	21.2	19.3	42.8	23.6		32.3	32.3	29.6	30.9	33.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.0	0.8	0.8	22.6	2.0		3.0	3.0	0.4	0.3	2.6	
Delay (s)	54.9	22.0	20.0	65.4	25.7		35.3	35.3	30.0	31.2	36.0	
Level of Service	D	C	C	E	C		D	D	C	C	D	
Approach Delay (s)		23.2			27.3			34.0			35.3	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	89.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	14	1102	1215	48	36	14
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	15	1185	1279	51	46	18

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	410	790	853	477	64
Volume Left (vph)	15	0	0	0	46
Volume Right (vph)	0	0	0	51	18
Hadj (s)	0.05	0.03	0.03	-0.04	0.01
Departure Headway (s)	6.2	6.2	6.1	6.0	6.9
Degree Utilization, x	0.70	1.35	1.44	0.79	0.12
Capacity (veh/h)	569	595	596	590	509
Control Delay (s)	21.4	188.2	223.5	27.0	10.9
Approach Delay (s)	131.2		153.0		10.9
Approach LOS	F		F		B

Intersection Summary			
Delay	139.4		
Level of Service	F		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	51	996	1091	103	123	98
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	55	1083	1199	113	189	151
Pedestrians					18	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1330				2467	1273
vC1, stage 1 conf vol					1273	
vC2, stage 2 conf vol					1193	
vCu, unblocked vol	1330				2467	1273
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	89				0	25
cM capacity (veh/h)	511				177	201

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	55	1083	1312	340
Volume Left	55	0	0	189
Volume Right	0	0	113	151
cSH	511	1700	1700	220
Volume to Capacity	0.11	0.64	0.77	1.55
Queue Length 95th (ft)	9	0	0	527
Control Delay (s)	12.9	0.0	0.0	307.0
Lane LOS	B			F
Approach Delay (s)	0.6		0.0	307.0
Approach LOS				F

Intersection Summary			
Average Delay	37.7		
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	873	21	173	1022	11	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.86	0.86
Hourly flow rate (vph)	949	23	188	1111	13	203
Pedestrians	3				15	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			987		2465	975
vC1, stage 1 conf vol					975	
vC2, stage 2 conf vol					1490	
vCu, unblocked vol			987		2465	975
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			73		91	32
cM capacity (veh/h)			691		135	301

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	972	188	1111	13	203
Volume Left	0	188	0	13	0
Volume Right	23	0	0	0	203
cSH	1700	691	1700	135	301
Volume to Capacity	0.57	0.27	0.65	0.09	0.68
Queue Length 95th (ft)	0	28	0	8	114
Control Delay (s)	0.0	12.1	0.0	34.5	38.6
Lane LOS		B		D	E
Approach Delay (s)	0.0	1.8		38.4	
Approach LOS				E	

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	831	960	70	41	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	71	966	1067	78	54	74
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1151				2221	1113
vC1, stage 1 conf vol					1113	
vC2, stage 2 conf vol					1108	
vCu, unblocked vol	1151				2221	1113
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				74	71
cM capacity (veh/h)	603				205	252

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	71	966	1144	128
Volume Left	71	0	0	54
Volume Right	0	0	78	74
cSH	603	1700	1700	230
Volume to Capacity	0.12	0.57	0.67	0.56
Queue Length 95th (ft)	10	0	0	76
Control Delay (s)	11.8	0.0	0.0	38.6
Lane LOS	B			E
Approach Delay (s)	0.8		0.0	38.6
Approach LOS				E

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	654	326	210	632	102	447	173	125	99	166	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1496	1770	3450		3433	1725		1770	1790	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1496	1770	3450		3433	1725		1770	1790	
Peak-hour factor, PHF	0.81	0.81	0.81	0.86	0.86	0.86	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	121	807	402	244	735	119	514	199	144	112	189	50
RTOR Reduction (vph)	0	0	133	0	11	0	0	23	0	0	9	0
Lane Group Flow (vph)	121	807	269	244	843	0	514	320	0	112	230	0
Confl. Peds. (#/hr)	4		14	14		4	20		13	13		20
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	11.4	32.6	32.6	12.6	33.8		22.4	22.4		19.0	19.0	
Effective Green, g (s)	11.4	32.6	32.6	12.6	33.8		22.4	22.4		19.0	19.0	
Actuated g/C Ratio	0.11	0.32	0.32	0.12	0.33		0.22	0.22		0.18	0.18	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	195	1119	473	216	1131		745	374		326	329	
v/s Ratio Prot	0.07	0.23		c0.14	c0.24		0.15	c0.19		0.06	c0.13	
v/s Ratio Perm			0.18									
v/c Ratio	0.62	0.72	0.57	1.13	0.74		0.69	0.85		0.34	0.70	
Uniform Delay, d1	43.8	31.2	29.4	45.2	30.8		37.2	38.8		36.6	39.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	3.3	3.2	100.5	3.6		2.9	17.6		0.9	6.9	
Delay (s)	50.6	34.5	32.6	145.7	34.5		40.1	56.4		37.5	46.2	
Level of Service	D	C	C	F	C		D	E		D	D	
Approach Delay (s)		35.4			59.2			46.6			43.4	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	103.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	809	131	28	865	148	95	24	9	112	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.96	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3406		1770	3539	1522	1681	1682		1770	1601	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3406		1770	3539	1522	1681	1682		1770	1601	
Peak-hour factor, PHF	0.81	0.81	0.81	0.88	0.88	0.88	0.82	0.82	0.82	0.78	0.78	0.78
Adj. Flow (vph)	253	999	162	32	983	168	116	29	11	144	33	214
RTOR Reduction (vph)	0	8	0	0	0	74	0	5	0	0	186	0
Lane Group Flow (vph)	253	1153	0	32	983	94	78	73	0	144	61	0
Confl. Peds. (#/hr)	7		40	40		7			24	24		
Confl. Bikes (#/hr)			1			1						1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Effective Green, g (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.19	0.52		0.04	0.37	0.37	0.13	0.13		0.13	0.13	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	331	1761		70	1307	562	219	219		231	209	
v/s Ratio Prot	c0.14	0.34		0.02	c0.28		c0.05	0.04		c0.08	0.04	
v/s Ratio Perm						0.06						
v/c Ratio	0.76	0.65		0.46	0.75	0.17	0.36	0.33		0.62	0.29	
Uniform Delay, d1	36.0	16.5		43.9	25.7	19.8	37.0	36.9		38.4	36.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	1.4		1.7	3.3	0.4	0.4	0.3		3.7	0.3	
Delay (s)	45.1	17.9		45.6	29.0	20.2	37.4	37.2		42.2	37.0	
Level of Service	D	B		D	C	C	D	D		D	D	
Approach Delay (s)		22.8			28.2			37.3			38.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1106	26	47	1079	41	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3504		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3504		1770	3539	1770	1583
Peak-hour factor, PHF	0.88	0.88	0.87	0.87	0.61	0.61
Adj. Flow (vph)	1257	30	54	1240	67	85
RTOR Reduction (vph)	1	0	0	0	0	72
Lane Group Flow (vph)	1286	0	54	1240	67	13
Confl. Peds. (#/hr)		139	139		19	
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	45.9		5.3	55.2	11.3	11.3
Effective Green, g (s)	45.9		5.3	55.2	11.3	11.3
Actuated g/C Ratio	0.61		0.07	0.73	0.15	0.15
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2130		124	2587	264	236
v/s Ratio Prot	c0.37		0.03	c0.35	c0.04	
v/s Ratio Perm						0.01
v/c Ratio	0.60		0.44	0.48	0.25	0.05
Uniform Delay, d1	9.2		33.7	4.2	28.4	27.5
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0		3.3	0.5	0.7	0.1
Delay (s)	10.2		37.0	4.7	29.1	27.6
Level of Service	B		D	A	C	C
Approach Delay (s)	10.2			6.0	28.3	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	990	0	0	1111	16	154
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.59	0.59
Hourly flow rate (vph)	1088	0	0	1292	27	261
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.97		0.87	0.97
vC, conflicting volume			1088		1734	544
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1031		1389	471
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		77	50
cM capacity (veh/h)			650		116	524

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	544	544	646	646	288
Volume Left	0	0	0	0	27
Volume Right	0	0	0	0	261
cSH	1700	1700	1700	1700	393
Volume to Capacity	0.32	0.32	0.38	0.38	0.73
Queue Length 95th (ft)	0	0	0	0	143
Control Delay (s)	0.0	0.0	0.0	0.0	35.5
Lane LOS					E
Approach Delay (s)	0.0		0.0		35.5
Approach LOS					E

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	969	23	75	1065	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.89	0.89	1.00	1.00
Hourly flow rate (vph)	1053	25	84	1197	0	0
Pedestrians					6	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.92		0.95	0.92
vC, conflicting volume			1084		1839	545
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			915		1401	328
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		100	100
cM capacity (veh/h)			681		110	613

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	702	376	84	598	598
Volume Left	0	0	84	0	0
Volume Right	0	25	0	0	0
cSH	1700	1700	681	1700	1700
Volume to Capacity	0.41	0.22	0.12	0.35	0.35
Queue Length 95th (ft)	0	0	11	0	0
Control Delay (s)	0.0	0.0	11.0	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.7		
Approach LOS					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	960	9	29	1023	15	54
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.85	0.85	0.52	0.52
Hourly flow rate (vph)	1079	10	34	1204	29	104
Pedestrians					92	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					8	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	441					
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			1181		1846	636
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			965		1709	357
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		56	80
cM capacity (veh/h)			585		65	528

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	719	370	34	602	602	133
Volume Left	0	0	34	0	0	29
Volume Right	0	10	0	0	0	104
cSH	1700	1700	585	1700	1700	207
Volume to Capacity	0.42	0.22	0.06	0.35	0.35	0.64
Queue Length 95th (ft)	0	0	5	0	0	95
Control Delay (s)	0.0	0.0	11.5	0.0	0.0	49.0
Lane LOS			B			E
Approach Delay (s)	0.0		0.3			49.0
Approach LOS						E

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/Tahoe Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	912	979	42	54	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3517		1770	1539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3517		1770	1539
Peak-hour factor, PHF	0.90	0.90	0.82	0.82	0.93	0.93
Adj. Flow (vph)	54	1013	1194	51	58	46
RTOR Reduction (vph)	0	0	2	0	0	39
Lane Group Flow (vph)	54	1013	1243	0	58	7
Confl. Peds. (#/hr)						16
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.3	54.1	44.8		10.4	10.4
Effective Green, g (s)	5.3	54.1	44.8		10.4	10.4
Actuated g/C Ratio	0.07	0.74	0.61		0.14	0.14
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	127	2604	2143		250	217
v/s Ratio Prot	0.03	c0.29	c0.35		c0.03	
v/s Ratio Perm						0.00
v/c Ratio	0.43	0.39	0.58		0.23	0.03
Uniform Delay, d1	32.6	3.6	8.7		28.0	27.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.1	0.3	0.8		0.7	0.1
Delay (s)	35.7	3.9	9.4		28.7	27.3
Level of Service	D	A	A		C	C
Approach Delay (s)		5.5	9.4		28.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	73.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	810	108	140	908	116	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3439		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3439		1770	3539	1770	1583
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.66	0.66
Adj. Flow (vph)	910	121	173	1121	176	236
RTOR Reduction (vph)	9	0	0	0	0	187
Lane Group Flow (vph)	1022	0	173	1121	176	49
Confl. Peds. (#/hr)		46	46		22	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	36.0		13.5	53.5	16.0	16.0
Effective Green, g (s)	36.0		13.5	53.5	16.0	16.0
Actuated g/C Ratio	0.46		0.17	0.69	0.21	0.21
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1597		308	2443	365	326
v/s Ratio Prot	c0.30		c0.10	0.32	c0.10	
v/s Ratio Perm						0.03
v/c Ratio	0.64		0.56	0.46	0.48	0.15
Uniform Delay, d1	15.8		29.3	5.4	27.1	25.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8		2.8	0.5	1.4	0.3
Delay (s)	17.6		32.1	6.0	28.5	25.5
Level of Service	B		C	A	C	C
Approach Delay (s)	17.6			9.5	26.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

1: El Camino Real & Ralston Ave

Existing Midday

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	207	682	194	686	257	135	820	222	279	802	169
v/c Ratio	0.28	0.90	0.49	0.83	0.47	0.70	0.83	0.41	1.20	0.75	0.32
Control Delay	39.9	60.5	45.9	54.0	20.3	70.5	48.3	13.9	167.6	43.0	9.9
Queue Delay	0.0	12.9	3.4	50.9	1.3	0.0	0.0	10.4	19.5	0.0	0.0
Total Delay	39.9	73.4	49.2	104.9	21.6	70.5	48.3	24.3	187.0	43.0	9.9
Queue Length 50th (ft)	68	266	170	308	90	101	305	41	~271	294	18
Queue Length 95th (ft)	103	#364	258	#409	173	169	381	108	#444	370	72
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	785	394	828	547	221	1061	566	233	1075	535
Starvation Cap Reductn	0	0	121	273	137	0	0	0	0	0	0
Spillback Cap Reductn	0	98	0	0	0	0	0	308	147	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.99	0.71	1.24	0.63	0.61	0.77	0.86	3.24	0.75	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	766	254	40	916	200	205	126	44	229
v/c Ratio	0.42	0.55	0.40	0.32	0.71	0.58	0.58	0.33	0.14	0.63
Control Delay	59.0	25.0	18.1	55.6	29.4	42.9	42.8	16.5	36.0	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	25.0	18.1	55.6	29.4	42.9	42.8	16.5	36.0	32.0
Queue Length 50th (ft)	30	178	70	22	226	107	110	18	21	75
Queue Length 95th (ft)	#104	314	175	67	386	223	228	77	48	130
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	130	1860	815	130	1839	616	628	608	649	650
Starvation Cap Reductn	0	0	0	0	12	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.41	0.31	0.31	0.50	0.32	0.33	0.21	0.07	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

7: Alameda De Las Pulgas & Ralston Ave

Existing Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	121	807	402	244	854	514	343	112	239
v/c Ratio	0.62	0.72	0.67	1.13	0.75	0.69	0.86	0.34	0.71
Control Delay	59.6	36.7	22.3	144.7	36.6	43.2	58.1	39.9	49.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	36.7	22.3	144.7	36.6	43.2	58.1	39.9	49.8
Queue Length 50th (ft)	79	254	120	~196	269	163	203	66	146
Queue Length 95th (ft)	129	299	194	#347	344	222	#352	116	223
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	215	1138	612	215	1138	803	426	414	427
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.71	0.66	1.13	0.75	0.64	0.81	0.27	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	253	1161	32	983	168	78	78	144	247
v/c Ratio	0.75	0.64	0.28	0.78	0.27	0.31	0.30	0.61	0.62
Control Delay	52.9	23.1	53.1	35.4	11.8	38.4	35.9	51.4	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	23.1	53.1	35.4	11.8	38.4	35.9	51.4	16.1
Queue Length 50th (ft)	127	231	17	247	18	43	40	76	16
Queue Length 95th (ft)	#268	441	53	#511	81	84	80	137	60
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	386	1807	244	1261	614	521	525	549	645
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.64	0.13	0.78	0.27	0.15	0.15	0.26	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1287	54	1240	67	85
v/c Ratio	0.57	0.24	0.47	0.21	0.24
Control Delay	14.0	37.9	6.6	29.1	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	37.9	6.6	29.1	8.7
Queue Length 50th (ft)	186	20	85	25	0
Queue Length 95th (ft)	388	65	225	45	11
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2460	367	3085	918	861
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.15	0.40	0.07	0.10

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1013	1245	58	46
v/c Ratio	0.23	0.38	0.54	0.18	0.15
Control Delay	37.4	5.3	12.9	29.9	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	5.3	12.9	29.9	10.7
Queue Length 50th (ft)	19	61	173	21	0
Queue Length 95th (ft)	69	164	312	64	29
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	442	3184	2661	801	716
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.32	0.47	0.07	0.06

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1031	173	1121	176	236
v/c Ratio	0.65	0.57	0.46	0.48	0.46
Control Delay	19.1	40.8	6.8	33.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	40.8	6.8	33.6	7.4
Queue Length 50th (ft)	182	71	96	73	0
Queue Length 95th (ft)	305	153	167	111	10
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2343	378	3146	734	794
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.46	0.36	0.24	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	265	532	65	277	622	390	109	944	201	215	842	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.98	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3459		1610	3383	1449	1770	3539	1555	1770	3539	1435
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3459		1610	3383	1449	1770	3539	1555	1770	3539	1435
Peak-hour factor, PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	301	605	74	298	669	419	116	1004	214	226	886	133
RTOR Reduction (vph)	0	8	0	0	0	217	0	0	83	0	0	66
Lane Group Flow (vph)	301	671	0	268	699	202	116	1004	131	226	886	67
Confl. Peds. (#/hr)	51		33	33		51	53		5	5		53
Confl. Bikes (#/hr)			2			4						1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	26.1	26.1		27.0	27.0	27.0	12.5	36.0	36.0	15.9	39.4	39.4
Effective Green, g (s)	26.1	26.1		27.0	27.0	27.0	12.5	36.0	36.0	15.9	39.4	39.4
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.22	0.10	0.30	0.30	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	746	752		362	761	326	184	1061	466	234	1161	471
v/s Ratio Prot	0.09	c0.19		0.17	c0.21		0.07	c0.28		c0.13	0.25	
v/s Ratio Perm						0.14			0.08			0.05
v/c Ratio	0.40	0.89		0.74	0.92	0.62	0.63	0.95	0.28	0.97	0.76	0.14
Uniform Delay, d1	40.3	45.6		43.2	45.4	41.9	51.5	41.1	32.1	51.8	36.1	28.4
Progression Factor	1.00	1.00		1.04	1.04	1.68	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	12.9		10.1	14.8	6.7	6.9	17.4	1.5	48.8	4.8	0.6
Delay (s)	40.6	58.5		55.0	62.1	76.9	58.4	58.4	33.6	100.6	40.9	29.0
Level of Service	D	E		E	E	E	E	E	C	F	D	C
Approach Delay (s)		53.0			65.2			54.5			50.5	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	688	252	34	768	14	524	145	158	26	28	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1485	1770	3524		1681	1720	1542	1770	1619	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1485	1770	3524		1681	1720	1542	1770	1619	
Peak-hour factor, PHF	0.85	0.85	0.85	0.95	0.95	0.95	0.92	0.92	0.92	0.77	0.77	0.77
Adj. Flow (vph)	52	809	296	36	808	15	570	158	172	34	36	118
RTOR Reduction (vph)	0	0	53	0	1	0	0	0	61	0	104	0
Lane Group Flow (vph)	52	809	243	36	822	0	359	369	111	34	50	0
Confl. Peds. (#/hr)	27		17	17		27	10		12	12		10
Confl. Bikes (#/hr)			2			4						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	33.8	33.8	3.2	32.5		27.0	27.0	27.0	10.9	10.9	
Effective Green, g (s)	4.5	33.8	33.8	3.2	32.5		27.0	27.0	27.0	10.9	10.9	
Actuated g/C Ratio	0.05	0.37	0.37	0.03	0.35		0.29	0.29	0.29	0.12	0.12	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	86	1301	546	61	1246		493	505	453	209	192	
v/s Ratio Prot	c0.03	0.23		0.02	c0.23		0.21	c0.21		0.02	c0.03	
v/s Ratio Perm			0.16						0.07			
v/c Ratio	0.60	0.62	0.44	0.59	0.66		0.73	0.73	0.24	0.16	0.26	
Uniform Delay, d1	42.8	23.8	22.0	43.7	25.0		29.2	29.2	24.7	36.4	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.4	1.3	1.2	14.4	1.7		5.7	5.7	0.4	0.5	1.0	
Delay (s)	54.3	25.1	23.2	58.1	26.8		34.8	34.9	25.1	36.9	37.8	
Level of Service	D	C	C	E	C		C	C	C	D	D	
Approach Delay (s)		25.9			28.1			33.0			37.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	21	955	1264	58	40	10
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	23	1027	1331	61	51	13

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	365	685	887	505	64
Volume Left (vph)	23	0	0	0	51
Volume Right (vph)	0	0	0	61	13
Hadj (s)	0.06	0.03	0.03	-0.05	0.07
Departure Headway (s)	6.3	6.2	6.0	5.9	7.0
Degree Utilization, x	0.63	1.18	1.48	0.83	0.12
Capacity (veh/h)	563	584	603	600	504
Control Delay (s)	18.2	120.0	241.4	30.2	11.0
Approach Delay (s)	84.6		164.8		11.0
Approach LOS	F		F		B

Intersection Summary			
Delay	127.3		
Level of Service	F		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	64	880	1144	121	92	73
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	70	957	1257	133	142	112
Pedestrians					12	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1402				2431	1336
vC1, stage 1 conf vol					1336	
vC2, stage 2 conf vol					1096	
vCu, unblocked vol	1402				2431	1336
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	86				20	40
cM capacity (veh/h)	482				177	186

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	70	957	1390	254
Volume Left	70	0	0	142
Volume Right	0	0	133	112
cSH	482	1700	1700	249
Volume to Capacity	0.14	0.56	0.82	1.02
Queue Length 95th (ft)	13	0	0	251
Control Delay (s)	13.7	0.0	0.0	105.3
Lane LOS	B			F
Approach Delay (s)	0.9		0.0	105.3
Approach LOS				F

Intersection Summary			
Average Delay	10.4		
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	831	13	152	1072	4	116
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.86	0.86
Hourly flow rate (vph)	903	14	163	1153	5	135
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			920		2393	913
vC1, stage 1 conf vol					913	
vC2, stage 2 conf vol					1480	
vCu, unblocked vol			920		2393	913
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			78		97	59
cM capacity (veh/h)			740		147	330

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	917	163	1153	5	135
Volume Left	0	163	0	5	0
Volume Right	14	0	0	0	135
cSH	1700	740	1700	147	330
Volume to Capacity	0.54	0.22	0.68	0.03	0.41
Queue Length 95th (ft)	0	21	0	2	48
Control Delay (s)	0.0	11.2	0.0	30.3	23.2
Lane LOS		B		D	C
Approach Delay (s)	0.0	1.4		23.4	
Approach LOS				C	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	59	817	1020	50	22	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	69	950	1133	56	29	64
Pedestrians			2		13	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1202				2263	1174
vC1, stage 1 conf vol					1174	
vC2, stage 2 conf vol					1089	
vCu, unblocked vol	1202				2263	1174
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				85	72
cM capacity (veh/h)	574				199	231

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	69	950	1189	93
Volume Left	69	0	0	29
Volume Right	0	0	56	64
cSH	574	1700	1700	220
Volume to Capacity	0.12	0.56	0.70	0.42
Queue Length 95th (ft)	10	0	0	49
Control Delay (s)	12.1	0.0	0.0	32.9
Lane LOS	B			D
Approach Delay (s)	0.8		0.0	32.9
Approach LOS				D

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	168	683	381	174	715	100	456	221	101	122	193	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1488	1770	3451		3433	1765		1770	1816	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1488	1770	3451		3433	1765		1770	1816	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	181	734	410	183	753	105	490	238	109	131	208	34
RTOR Reduction (vph)	0	0	151	0	10	0	0	15	0	0	6	0
Lane Group Flow (vph)	181	734	259	183	848	0	490	332	0	131	236	0
Confl. Peds. (#/hr)	13		16	16		13	15		4	4		15
Confl. Bikes (#/hr)						2			1			
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	12.6	32.1	32.1	12.6	32.1		22.6	22.6		19.1	19.1	
Effective Green, g (s)	12.6	32.1	32.1	12.6	32.1		22.6	22.6		19.1	19.1	
Actuated g/C Ratio	0.12	0.31	0.31	0.12	0.31		0.22	0.22		0.19	0.19	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	216	1104	464	216	1076		753	387		328	337	
v/s Ratio Prot	0.10	0.21		c0.10	c0.25		0.14	c0.19		0.07	c0.13	
v/s Ratio Perm			0.17									
v/c Ratio	0.84	0.66	0.56	0.85	0.79		0.65	0.86		0.40	0.70	
Uniform Delay, d1	44.2	30.7	29.5	44.2	32.3		36.6	38.6		36.9	39.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.6	2.4	3.1	26.0	4.8		2.2	17.5		1.1	6.9	
Delay (s)	68.7	33.1	32.6	70.2	37.1		38.8	56.1		37.9	46.1	
Level of Service	E	C	C	E	D		D	E		D	D	
Approach Delay (s)		37.8			43.0			46.0			43.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	102.9	Sum of lost time (s)	16.5
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	972	213	40	879	187	110	17	25	97	28	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.95		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3426		1770	3539	1546	1681	1634		1770	1636	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3426		1770	3539	1546	1681	1634		1770	1636	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.72	0.72	0.72	0.83	0.83	0.83
Adj. Flow (vph)	288	1130	248	43	955	203	153	24	35	117	34	145
RTOR Reduction (vph)	0	11	0	0	0	75	0	17	0	0	129	0
Lane Group Flow (vph)	288	1367	0	43	955	128	107	88	0	117	50	0
Confl. Peds. (#/hr)	1		3	3		1			6	6		
Confl. Bikes (#/hr)			1			1			1			
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Effective Green, g (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Actuated g/C Ratio	0.21	0.53		0.05	0.36	0.36	0.13	0.13		0.11	0.11	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	370	1798		80	1279	559	219	213		200	185	
v/s Ratio Prot	c0.16	c0.40		0.02	0.27		c0.06	0.05		c0.07	0.03	
v/s Ratio Perm						0.08						
v/c Ratio	0.78	0.76		0.54	0.75	0.23	0.49	0.42		0.58	0.27	
Uniform Delay, d1	34.3	17.2		42.8	25.6	20.4	37.1	36.7		38.7	37.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	2.5		3.4	3.3	0.6	0.6	0.5		2.8	0.3	
Delay (s)	43.4	19.8		46.3	28.9	21.0	37.7	37.2		41.5	37.5	
Level of Service	D	B		D	C	C	D	D		D	D	
Approach Delay (s)		23.8			28.2			37.4			39.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1405	13	14	1114	62	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3534		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3534		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.95	0.95	0.62	0.62
Adj. Flow (vph)	1544	14	15	1173	100	44
RTOR Reduction (vph)	0	0	0	0	0	39
Lane Group Flow (vph)	1558	0	15	1173	100	5
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	53.3		1.5	58.8	8.8	8.8
Effective Green, g (s)	53.3		1.5	58.8	8.8	8.8
Actuated g/C Ratio	0.70		0.02	0.77	0.11	0.11
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2459		34	2716	203	181
v/s Ratio Prot	c0.44		0.01	c0.33	c0.06	
v/s Ratio Perm						0.00
v/c Ratio	0.63		0.44	0.43	0.49	0.03
Uniform Delay, d1	6.3		37.1	3.1	31.8	30.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		12.0	0.4	2.6	0.1
Delay (s)	7.4		49.1	3.5	34.4	30.2
Level of Service	A		D	A	C	C
Approach Delay (s)	7.4			4.1	33.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1396	0	0	1164	9	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.98	0.98	0.66	0.66
Hourly flow rate (vph)	1534	0	0	1188	14	42
Pedestrians					1	
Lane Width (ft)					16.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.83		0.88	0.83
vC, conflicting volume			1535		2129	768
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1242		1532	321
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		86	92
cM capacity (veh/h)			463		94	561

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	767	767	594	594	56
Volume Left	0	0	0	0	14
Volume Right	0	0	0	0	42
cSH	1700	1700	1700	1700	255
Volume to Capacity	0.45	0.45	0.35	0.35	0.22
Queue Length 95th (ft)	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	23.1
Lane LOS					C
Approach Delay (s)	0.0		0.0		23.1
Approach LOS					C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1390	12	24	1121	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	1544	13	25	1156	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.81		0.83	0.81
vC, conflicting volume			1560		2180	781
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1230		1820	272
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	100
cM capacity (veh/h)			458		54	590

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	1030	528	25	578	578
Volume Left	0	0	25	0	0
Volume Right	0	13	0	0	0
cSH	1700	1700	458	1700	1700
Volume to Capacity	0.61	0.31	0.05	0.34	0.34
Queue Length 95th (ft)	0	0	4	0	0
Control Delay (s)	0.0	0.0	13.3	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.3		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1386	9	19	1094	6	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	1507	10	20	1176	10	14
Pedestrians					4	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	441					
pX, platoon unblocked			0.81		0.81	0.81
vC, conflicting volume			1520		2144	762
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1182		1949	251
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		79	98
cM capacity (veh/h)			476		45	608

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1004	512	20	588	588	24
Volume Left	0	0	20	0	0	10
Volume Right	0	10	0	0	0	14
cSH	1700	1700	476	1700	1700	101
Volume to Capacity	0.59	0.30	0.04	0.35	0.35	0.24
Queue Length 95th (ft)	0	0	3	0	0	21
Control Delay (s)	0.0	0.0	12.9	0.0	0.0	51.3
Lane LOS			B			F
Approach Delay (s)	0.0		0.2			51.3
Approach LOS						F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/Tahoe Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	51	1350	1065	54	47	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3510		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3510		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.96	0.96	0.74	0.74
Adj. Flow (vph)	54	1421	1109	56	64	41
RTOR Reduction (vph)	0	0	2	0	0	36
Lane Group Flow (vph)	54	1421	1163	0	64	5
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.3	49.5	40.2		7.4	7.4
Effective Green, g (s)	5.3	49.5	40.2		7.4	7.4
Actuated g/C Ratio	0.08	0.75	0.61		0.11	0.11
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	142	2658	2141		198	177
v/s Ratio Prot	0.03	c0.40	0.33		c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.38	0.53	0.54		0.32	0.03
Uniform Delay, d1	28.7	3.4	7.5		26.9	26.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	0.5	0.6		1.3	0.1
Delay (s)	31.1	3.9	8.1		28.2	26.1
Level of Service	C	A	A		C	C
Approach Delay (s)		4.9	8.1		27.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1312	177	116	986	89	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3467		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3467		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.97	0.97	0.84	0.84
Adj. Flow (vph)	1442	195	120	1016	106	145
RTOR Reduction (vph)	8	0	0	0	0	124
Lane Group Flow (vph)	1629	0	120	1016	106	21
Confl. Peds. (#/hr)		1	1		6	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	51.4		12.0	67.4	12.9	12.9
Effective Green, g (s)	51.4		12.0	67.4	12.9	12.9
Actuated g/C Ratio	0.58		0.14	0.76	0.15	0.15
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	2018		240	2701	258	231
v/s Ratio Prot	c0.47		c0.07	0.29	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.81		0.50	0.38	0.41	0.09
Uniform Delay, d1	14.5		35.4	3.5	34.2	32.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2		2.2	0.3	1.5	0.2
Delay (s)	17.7		37.6	3.8	35.7	32.9
Level of Service	B		D	A	D	C
Approach Delay (s)	17.7			7.4	34.1	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

1: El Camino Real & Ralston Ave

PM Existing

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	301	679	268	699	419	116	1004	214	226	886	133
v/c Ratio	0.40	0.89	0.74	0.92	0.77	0.63	0.95	0.39	0.97	0.76	0.25
Control Delay	41.8	60.0	55.9	62.4	32.3	66.7	58.8	17.0	103.7	42.1	11.5
Queue Delay	0.0	1.5	56.1	48.1	19.7	0.0	0.0	19.4	54.5	0.0	0.0
Total Delay	41.8	61.5	112.0	110.5	52.0	66.7	58.8	36.4	158.1	42.1	11.5
Queue Length 50th (ft)	102	264	238	314	214	87	400	55	~186	328	19
Queue Length 95th (ft)	141	#345	#351	#420	#307	148	#533	125	#346	419	69
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	786	362	761	543	221	1061	549	234	1161	537
Starvation Cap Reductn	0	0	117	268	122	0	0	0	0	0	0
Spillback Cap Reductn	0	30	0	0	0	0	0	320	136	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.90	1.09	1.42	1.00	0.52	0.95	0.93	2.31	0.76	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	809	296	36	823	359	369	172	34	154
v/c Ratio	0.43	0.61	0.50	0.30	0.67	0.72	0.72	0.33	0.16	0.52
Control Delay	58.9	27.3	20.7	54.7	29.5	40.9	40.8	17.4	41.2	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.9	27.3	20.7	54.7	29.5	40.9	40.8	17.4	41.2	19.7
Queue Length 50th (ft)	30	213	99	21	217	187	192	35	19	20
Queue Length 95th (ft)	#87	311	193	63	344	#446	#457	117	44	58
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	123	1767	771	123	1759	585	599	591	616	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.46	0.38	0.29	0.47	0.61	0.62	0.29	0.06	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	181	734	410	183	858	490	347	131	242
v/c Ratio	0.84	0.67	0.67	0.85	0.79	0.65	0.86	0.40	0.71
Control Delay	77.5	35.2	20.8	78.8	39.0	41.9	59.5	41.1	50.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	35.2	20.8	78.8	39.0	41.9	59.5	41.1	50.5
Queue Length 50th (ft)	122	225	110	124	273	155	214	79	150
Queue Length 95th (ft)	#260	308	236	#263	371	220	#388	136	235
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	216	1142	627	216	1123	806	428	415	431
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.64	0.65	0.85	0.76	0.61	0.81	0.32	0.56

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	288	1378	43	955	203	107	105	117	179
v/c Ratio	0.76	0.75	0.35	0.78	0.33	0.48	0.45	0.57	0.57
Control Delay	50.3	23.2	50.9	33.4	12.9	43.4	35.5	50.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	23.2	50.9	33.4	12.9	43.4	35.5	50.7	18.3
Queue Length 50th (ft)	148	306	23	238	32	58	47	62	17
Queue Length 95th (ft)	#342	#656	66	#484	112	90	76	124	71
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	377	1839	238	1231	613	509	508	536	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.75	0.18	0.78	0.33	0.21	0.21	0.22	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1558	15	1173	100	44
v/c Ratio	0.58	0.08	0.42	0.38	0.16
Control Delay	7.9	33.1	4.3	33.8	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	33.1	4.3	33.8	11.2
Queue Length 50th (ft)	136	6	86	41	0
Queue Length 95th (ft)	392	25	144	61	13
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2665	348	3171	870	800
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.04	0.37	0.11	0.06

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1421	1165	64	41
v/c Ratio	0.22	0.52	0.50	0.25	0.15
Control Delay	30.5	4.7	10.1	30.3	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	4.7	10.1	30.3	11.9
Queue Length 50th (ft)	18	104	155	22	0
Queue Length 95th (ft)	59	174	257	54	18
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	467	3445	2894	847	778
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.41	0.40	0.08	0.05

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1637	120	1016	106	145
v/c Ratio	0.81	0.50	0.38	0.41	0.41
Control Delay	20.4	44.2	4.5	39.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	44.2	4.5	39.2	9.5
Queue Length 50th (ft)	331	61	70	54	0
Queue Length 95th (ft)	#696	130	171	97	40
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2024	322	2866	625	653
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.81	0.37	0.35	0.17	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	159	818	48	212	456	149	67	572	173	290	902	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00	0.98	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3499		1610	3383	1466	1770	3539	1548	1770	3539	1497
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3499		1610	3383	1466	1770	3539	1548	1770	3539	1497
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	169	870	51	230	496	162	72	615	186	326	1013	88
RTOR Reduction (vph)	0	4	0	0	0	130	0	0	120	0	0	48
Lane Group Flow (vph)	169	917	0	207	519	32	72	615	66	326	1013	40
Confl. Peds. (#/hr)	45		33	33		45	27		6	6		27
Confl. Bikes (#/hr)			1			1			4			2
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	32.3	32.3		23.4	23.4	23.4	8.5	30.3	30.3	19.0	40.8	40.8
Effective Green, g (s)	32.3	32.3		23.4	23.4	23.4	8.5	30.3	30.3	19.0	40.8	40.8
Actuated g/C Ratio	0.27	0.27		0.19	0.19	0.19	0.07	0.25	0.25	0.16	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	924	941		313	659	285	125	893	390	280	1203	508
v/s Ratio Prot	0.05	c0.26		0.13	c0.15		0.04	0.17		c0.18	c0.29	
v/s Ratio Perm						0.02			0.04			0.03
v/c Ratio	0.18	0.97		0.66	0.79	0.11	0.58	0.69	0.17	1.16	0.84	0.08
Uniform Delay, d1	33.7	43.4		44.6	45.9	39.7	54.0	40.6	35.0	50.5	36.6	26.9
Progression Factor	1.00	1.00		0.38	0.40	0.29	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	23.2		4.7	5.6	0.2	6.3	4.3	0.9	105.8	7.2	0.3
Delay (s)	33.8	66.6		21.5	24.0	11.8	60.3	44.9	36.0	156.3	43.9	27.2
Level of Service	C	E		C	C	B	E	D	D	F	D	C
Approach Delay (s)		61.5			21.2			44.3			68.5	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	930	444	14	568	7	333	60	66	16	48	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1520	1770	3529		1681	1710	1529	1770	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1520	1770	3529		1681	1710	1529	1770	1620	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.78	0.78	0.78	0.79	0.79	0.79
Adj. Flow (vph)	40	969	462	16	660	8	427	77	85	20	61	222
RTOR Reduction (vph)	0	0	75	0	1	0	0	0	67	0	112	0
Lane Group Flow (vph)	40	969	387	16	667	0	252	252	18	20	171	0
Confl. Peds. (#/hr)	30		7	7		30	5		19	19		5
Confl. Bikes (#/hr)			4			5						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.4	38.5	38.5	1.5	35.6		19.7	19.7	19.7	15.5	15.5	
Effective Green, g (s)	4.4	38.5	38.5	1.5	35.6		19.7	19.7	19.7	15.5	15.5	
Actuated g/C Ratio	0.05	0.42	0.42	0.02	0.39		0.21	0.21	0.21	0.17	0.17	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	84	1477	634	28	1362		359	365	326	297	272	
v/s Ratio Prot	c0.02	c0.27		0.01	0.19		c0.15	0.15		0.01	c0.11	
v/s Ratio Perm			0.25						0.01			
v/c Ratio	0.48	0.66	0.61	0.57	0.49		0.70	0.69	0.06	0.07	0.63	
Uniform Delay, d1	42.8	21.5	21.0	45.0	21.4		33.5	33.4	28.8	32.3	35.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	1.4	2.5	25.2	0.6		6.5	6.0	0.1	0.1	5.1	
Delay (s)	47.0	23.0	23.5	70.2	22.0		40.1	39.4	28.9	32.4	40.7	
Level of Service	D	C	C	E	C		D	D	C	C	D	
Approach Delay (s)		23.8			23.1			38.2			40.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	92.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	9	1399	1086	26	84	52
Peak Hour Factor	0.98	0.98	0.82	0.82	0.68	0.68
Hourly flow rate (vph)	9	1428	1324	32	124	76

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	485	952	883	473	200
Volume Left (vph)	9	0	0	0	124
Volume Right (vph)	0	0	0	32	76
Hadj (s)	0.04	0.03	0.03	-0.01	-0.07
Departure Headway (s)	6.7	6.7	6.8	6.7	6.9
Degree Utilization, x	0.91	1.78	1.66	0.88	0.38
Capacity (veh/h)	529	541	538	532	516
Control Delay (s)	44.5	375.0	320.9	40.1	14.0
Approach Delay (s)	263.4		222.9		14.0
Approach LOS	F		F		B

Intersection Summary			
Delay	228.4		
Level of Service	F		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	39	1342	1015	104	71	82
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.83	0.83	0.58	0.58
Hourly flow rate (vph)	41	1413	1223	125	122	141
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1357				2789	1295
vC1, stage 1 conf vol					1295	
vC2, stage 2 conf vol					1495	
vCu, unblocked vol	1357				2789	1295
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	92				16	28
cM capacity (veh/h)	503				146	197

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	41	1413	1348	264
Volume Left	41	0	0	122
Volume Right	0	0	125	141
cSH	503	1700	1700	242
Volume to Capacity	0.08	0.83	0.79	1.09
Queue Length 95th (ft)	7	0	0	286
Control Delay (s)	12.8	0.0	0.0	128.6
Lane LOS	B			F
Approach Delay (s)	0.4		0.0	128.6
Approach LOS				F

Intersection Summary			
Average Delay	11.2		
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1101	21	216	881	6	285
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.78	0.78	0.72	0.72
Hourly flow rate (vph)	1197	23	277	1129	8	396
Pedestrians	3			1	6	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1226		2900	1215
vC1, stage 1 conf vol					1214	
vC2, stage 2 conf vol					1686	
vCu, unblocked vol			1226		2900	1215
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			51		89	0
cM capacity (veh/h)			566		78	220

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1220	277	1129	8	396
Volume Left	0	277	0	8	0
Volume Right	23	0	0	0	396
cSH	1700	566	1700	78	220
Volume to Capacity	0.72	0.49	0.66	0.11	1.80
Queue Length 95th (ft)	0	67	0	9	686
Control Delay (s)	0.0	17.3	0.0	56.7	415.9
Lane LOS		C		F	F
Approach Delay (s)	0.0	3.4		408.5	
Approach LOS				F	

Intersection Summary			
Average Delay	56.1		
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	1146	729	60	44	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.82	0.82	0.73	0.73
Hourly flow rate (vph)	68	1273	889	73	60	108
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	969				2341	933
vC1, stage 1 conf vol					933	
vC2, stage 2 conf vol					1409	
vCu, unblocked vol	969				2341	933
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	90				66	66
cM capacity (veh/h)	707				177	321

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	68	1273	962	168
Volume Left	68	0	0	60
Volume Right	0	0	73	108
cSH	707	1700	1700	248
Volume to Capacity	0.10	0.75	0.57	0.68
Queue Length 95th (ft)	8	0	0	110
Control Delay (s)	10.6	0.0	0.0	45.4
Lane LOS	B			E
Approach Delay (s)	0.5		0.0	45.4
Approach LOS				E

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	813	228	165	560	64	478	175	116	165	179	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1529	1770	3469		3433	1742		1770	1771	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1529	1770	3469		3433	1742		1770	1771	
Peak-hour factor, PHF	0.89	0.89	0.89	0.77	0.77	0.77	0.95	0.95	0.95	0.75	0.75	0.75
Adj. Flow (vph)	69	913	256	214	727	83	503	184	122	220	239	79
RTOR Reduction (vph)	0	0	74	0	7	0	0	22	0	0	11	0
Lane Group Flow (vph)	69	913	182	214	803	0	503	284	0	220	307	0
Confl. Peds. (#/hr)	9		5	5		9	29		1	1		29
Confl. Bikes (#/hr)			1									
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	8.6	33.9	33.9	12.6	37.9		21.3	21.3		21.8	21.8	
Effective Green, g (s)	8.6	33.9	33.9	12.6	37.9		21.3	21.3		21.8	21.8	
Actuated g/C Ratio	0.08	0.32	0.32	0.12	0.36		0.20	0.20		0.21	0.21	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	143	1130	488	210	1239		689	349		363	363	
v/s Ratio Prot	0.04	c0.26		c0.12	0.23		0.15	c0.16		0.12	c0.17	
v/s Ratio Perm			0.12									
v/c Ratio	0.48	0.81	0.37	1.02	0.65		0.73	0.81		0.61	0.85	
Uniform Delay, d1	46.6	33.1	27.9	46.8	28.5		39.7	40.5		38.3	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.5	5.2	1.4	67.1	1.9		4.2	14.1		3.3	16.9	
Delay (s)	50.1	38.3	29.2	113.9	30.4		44.0	54.6		41.5	57.5	
Level of Service	D	D	C	F	C		D	D		D	E	
Approach Delay (s)		37.1			47.9			48.0			50.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	106.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	909	243	9	984	96	421	59	22	120	71	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (prot)	1770	3404		1770	3539	1548	1681	1686		1770	1624	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (perm)	1770	3404		1770	3539	1548	1681	1686		1770	1624	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	262	1082	289	10	1070	104	526	74	28	133	79	462
RTOR Reduction (vph)	0	17	0	0	0	61	0	3	0	0	191	0
Lane Group Flow (vph)	262	1354	0	10	1070	43	316	309	0	133	350	0
Confl. Peds. (#/hr)			4	4					4	4		
Confl. Bikes (#/hr)						2						
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	50.8		1.1	34.4	34.4	23.0	23.0		16.1	16.1	
Effective Green, g (s)	17.5	50.8		1.1	34.4	34.4	23.0	23.0		16.1	16.1	
Actuated g/C Ratio	0.16	0.47		0.01	0.32	0.32	0.21	0.21		0.15	0.15	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	1601		18	1127	493	357	359		263	242	
v/s Ratio Prot	c0.15	0.40		0.01	c0.30		c0.19	0.18		0.08	c0.22	
v/s Ratio Perm						0.03						
v/c Ratio	0.92	0.85		0.56	0.95	0.09	0.89	0.86		0.51	1.45	
Uniform Delay, d1	44.5	25.2		53.2	36.0	25.8	41.2	41.0		42.3	46.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.4	5.0		19.4	16.7	0.2	21.5	18.0		0.6	223.3	
Delay (s)	76.0	30.1		72.6	52.6	26.0	62.7	58.9		42.8	269.2	
Level of Service	E	C		E	D	C	E	E		D	F	
Approach Delay (s)		37.5			50.5			60.8			224.5	
Approach LOS		D			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	75.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1291	243	91	1693	165	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3423		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3423		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.69	0.69
Adj. Flow (vph)	1403	264	105	1946	239	93
RTOR Reduction (vph)	12	0	0	0	0	75
Lane Group Flow (vph)	1655	0	105	1946	239	18
Confl. Peds. (#/hr)		15	15		20	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	58.1		11.8	73.9	20.5	20.5
Effective Green, g (s)	58.1		11.8	73.9	20.5	20.5
Actuated g/C Ratio	0.56		0.11	0.71	0.20	0.20
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	1923		201	2529	350	313
v/s Ratio Prot	c0.48		0.06	c0.55	c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.86		0.52	0.77	0.68	0.06
Uniform Delay, d1	19.2		43.1	9.4	38.4	33.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0		3.2	2.1	5.9	0.1
Delay (s)	24.2		46.3	11.4	44.3	33.7
Level of Service	C		D	B	D	C
Approach Delay (s)	24.2			13.2	41.3	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	103.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1254	0	0	1834	0	279
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.91	0.91	0.58	0.58
Hourly flow rate (vph)	1608	0	0	2015	0	481
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1055			785		
pX, platoon unblocked			0.82		0.70	0.82
vC, conflicting volume			1608		2615	804
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1292		1250	306
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	15
cM capacity (veh/h)			434		115	563

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	804	804	1008	1008	481
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	481
cSH	1700	1700	1700	1700	563
Volume to Capacity	0.47	0.47	0.59	0.59	0.85
Queue Length 95th (ft)	0	0	0	0	232
Control Delay (s)	0.0	0.0	0.0	0.0	38.1
Lane LOS					E
Approach Delay (s)	0.0		0.0		38.1
Approach LOS					E

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1246	131	197	1666	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.94	0.94	1.00	1.00
Hourly flow rate (vph)	1483	156	210	1772	0	0
Pedestrians					3	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	611			1229		
pX, platoon unblocked			0.78		0.77	0.78
vC, conflicting volume			1642		2870	823
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1261		1544	211
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			51		100	100
cM capacity (veh/h)			427		41	621

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	989	650	210	886	886
Volume Left	0	0	210	0	0
Volume Right	0	156	0	0	0
cSH	1700	1700	427	1700	1700
Volume to Capacity	0.58	0.38	0.49	0.52	0.52
Queue Length 95th (ft)	0	0	66	0	0
Control Delay (s)	0.0	0.0	21.3	0.0	0.0
Lane LOS			C		
Approach Delay (s)	0.0		2.2		
Approach LOS					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1285	27	110	1545	19	65
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.91	0.91	0.75	0.75
Hourly flow rate (vph)	1567	33	121	1698	25	87
Pedestrians					130	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					11	
Right turn flare (veh)						
Median type	Raised			None		
Median storage veh)	1					
Upstream signal (ft)	441					
pX, platoon unblocked			0.78		0.78	0.78
vC, conflicting volume			1730		2804	930
vC1, stage 1 conf vol					1714	
vC2, stage 2 conf vol					1091	
vCu, unblocked vol			1370		2749	343
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			65		68	81
cM capacity (veh/h)			345		78	454

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1045	555	121	849	849	112
Volume Left	0	0	121	0	0	25
Volume Right	0	33	0	0	0	87
cSH	1700	1700	345	1700	1700	217
Volume to Capacity	0.61	0.33	0.35	0.50	0.50	0.52
Queue Length 95th (ft)	0	0	38	0	0	66
Control Delay (s)	0.0	0.0	20.9	0.0	0.0	37.9
Lane LOS			C			E
Approach Delay (s)	0.0		1.4			37.9
Approach LOS						E

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
Description: Ralston Ave/Tahoe Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	1196	1534	25	113	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3530		1770	1508
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3530		1770	1508
Peak-hour factor, PHF	0.81	0.81	0.89	0.89	0.64	0.64
Adj. Flow (vph)	47	1477	1724	28	177	181
RTOR Reduction (vph)	0	0	1	0	0	146
Lane Group Flow (vph)	47	1477	1751	0	177	35
Confl. Peds. (#/hr)	1			1		30
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.5	62.7	53.2		17.0	17.0
Effective Green, g (s)	5.5	62.7	53.2		17.0	17.0
Actuated g/C Ratio	0.06	0.71	0.60		0.19	0.19
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	109	2501	2117		339	289
v/s Ratio Prot	0.03	c0.42	c0.50		c0.10	
v/s Ratio Perm						0.02
v/c Ratio	0.43	0.59	0.83		0.52	0.12
Uniform Delay, d1	40.1	6.5	14.1		32.2	29.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	0.7	3.3		1.9	0.3
Delay (s)	43.8	7.2	17.4		34.1	29.9
Level of Service	D	A	B		C	C
Approach Delay (s)		8.4	17.4		32.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1010	106	213	1482	251	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3443		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3443		1770	3539	1770	1583
Peak-hour factor, PHF	0.77	0.77	0.92	0.92	0.78	0.78
Adj. Flow (vph)	1312	138	232	1611	322	292
RTOR Reduction (vph)	7	0	0	0	0	191
Lane Group Flow (vph)	1443	0	232	1611	322	101
Confl. Peds. (#/hr)		53	53		59	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	53.5		16.3	73.8	25.3	25.3
Effective Green, g (s)	53.5		16.3	73.8	25.3	25.3
Actuated g/C Ratio	0.50		0.15	0.69	0.24	0.24
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1719		269	2438	418	373
v/s Ratio Prot	c0.42		c0.13	0.46	c0.18	
v/s Ratio Perm						0.06
v/c Ratio	0.84		0.86	0.66	0.77	0.27
Uniform Delay, d1	23.1		44.3	9.5	38.2	33.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7		24.2	1.3	9.0	0.5
Delay (s)	27.8		68.5	10.8	47.2	33.9
Level of Service	C		E	B	D	C
Approach Delay (s)	27.8			18.1	40.9	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	107.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	169	921	207	519	162	72	615	186	326	1013	88
v/c Ratio	0.18	0.97	0.66	0.79	0.39	0.50	0.69	0.36	1.16	0.83	0.16
Control Delay	36.1	67.9	26.2	26.6	4.2	64.3	44.9	9.9	150.4	43.7	9.5
Queue Delay	0.0	3.6	1.5	1.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	71.6	27.7	28.2	4.9	64.3	44.9	9.9	150.4	43.7	9.5
Queue Length 50th (ft)	54	~433	138	225	12	54	223	15	~300	379	8
Queue Length 95th (ft)	85	#565	134	150	10	102	287	74	#475	#475	45
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	924	945	348	732	444	177	943	530	280	1219	563
Starvation Cap Reductn	0	0	46	88	102	0	0	0	0	0	0
Spillback Cap Reductn	0	18	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.99	0.69	0.81	0.47	0.41	0.65	0.35	1.16	0.83	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	40	969	462	16	668	252	252	85	20	283
v/c Ratio	0.27	0.64	0.64	0.15	0.49	0.69	0.68	0.21	0.07	0.73
Control Delay	52.0	24.8	21.4	55.4	25.1	46.7	46.0	8.8	38.1	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	24.8	21.4	55.4	25.1	46.7	46.0	8.8	38.1	32.5
Queue Length 50th (ft)	20	207	134	8	162	128	128	0	9	73
Queue Length 95th (ft)	67	391	333	35	250	242	242	25	31	161
Internal Link Dist (ft)		847			519		540			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	190	2070	938	105	1895	522	530	533	486	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.47	0.49	0.15	0.35	0.48	0.48	0.16	0.04	0.52

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	69	913	256	214	810	503	306	220	318
v/c Ratio	0.41	0.82	0.46	1.01	0.64	0.72	0.82	0.60	0.84
Control Delay	53.2	41.6	20.2	114.4	33.1	46.1	55.0	45.9	59.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	41.6	20.2	114.4	33.1	46.1	55.0	45.9	59.5
Queue Length 50th (ft)	47	319	82	~167	263	169	186	140	205
Queue Length 95th (ft)	90	#397	158	#251	278	226	#312	177	245
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	211	1113	555	211	1256	785	419	405	416
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.82	0.46	1.01	0.64	0.64	0.73	0.54	0.76

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	262	1371	10	1070	104	316	312	133	541
v/c Ratio	0.89	0.82	0.13	1.02	0.20	0.86	0.84	0.49	1.24
Control Delay	74.4	29.1	53.4	70.1	9.6	62.1	59.0	49.2	147.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	29.1	53.4	70.1	9.6	62.1	59.0	49.2	147.8
Queue Length 50th (ft)	179	399	7	~434	8	218	212	87	~334
Queue Length 95th (ft)	#287	#577	25	#574	49	282	274	152	#553
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	322	1665	271	1052	522	435	439	271	438
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.82	0.04	1.02	0.20	0.73	0.71	0.49	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1667	105	1946	239	93
v/c Ratio	0.86	0.52	0.77	0.68	0.24
Control Delay	26.1	56.0	12.8	50.4	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	56.0	12.8	50.4	9.1
Queue Length 50th (ft)	468	70	373	157	0
Queue Length 95th (ft)	#729	129	561	177	19
Internal Link Dist (ft)	705		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2098	244	2780	540	547
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.43	0.70	0.44	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	47	1477	1752	177	181
v/c Ratio	0.26	0.60	0.81	0.51	0.41
Control Delay	43.1	8.6	20.4	37.7	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	8.6	20.4	37.7	8.2
Queue Length 50th (ft)	27	232	481	93	0
Queue Length 95th (ft)	55	240	#691	109	10
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	333	2981	2160	604	629
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.50	0.81	0.29	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1450	232	1611	322	292
v/c Ratio	0.84	0.87	0.66	0.77	0.52
Control Delay	29.1	77.0	11.9	52.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	77.0	11.9	52.3	10.7
Queue Length 50th (ft)	438	169	306	222	24
Queue Length 95th (ft)	458	#345	456	271	59
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	1930	268	2650	553	667
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.87	0.61	0.58	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	1399	1086	26	84	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frpb, ped/bikes		1.00	1.00		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.95	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		3538	3524		1714	
Flt Permitted		0.94	1.00		0.97	
Satd. Flow (perm)		3343	3524		1714	
Peak-hour factor, PHF	0.98	0.98	0.82	0.82	0.68	0.68
Adj. Flow (vph)	9	1428	1324	32	124	76
RTOR Reduction (vph)	0	0	1	0	17	0
Lane Group Flow (vph)	0	1437	1355	0	183	0
Confl. Peds. (#/hr)	23			23	2	
Confl. Bikes (#/hr)				5		
Turn Type	pm+pt	NA	NA		NA	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		65.3	65.3		15.9	
Effective Green, g (s)		65.3	65.3		15.9	
Actuated g/C Ratio		0.72	0.72		0.18	
Clearance Time (s)		5.0	5.0		4.0	
Vehicle Extension (s)		7.0	7.0		4.0	
Lane Grp Cap (vph)		2420	2551		302	
v/s Ratio Prot			0.38		c0.11	
v/s Ratio Perm		c0.43				
v/c Ratio		0.59	0.53		0.60	
Uniform Delay, d1		6.0	5.6		34.3	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.9	0.6		3.9	
Delay (s)		6.9	6.2		38.2	
Level of Service		A	A		D	
Approach Delay (s)		6.9	6.2		38.2	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1667	105	1946	332
v/c Ratio	0.84	0.50	0.75	0.54
Control Delay	23.1	53.0	10.7	36.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.1	53.0	10.7	36.1
Queue Length 50th (ft)	400	65	285	90
Queue Length 95th (ft)	645	125	481	97
Internal Link Dist (ft)	705		1437	355
Turn Bay Length (ft)		150		50
Base Capacity (vph)	2202	256	2880	1103
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.76	0.41	0.68	0.30

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1285	27	110	1548	19	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	1
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.75	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.90	
Flt Protected	1.00	1.00	0.95	1.00	0.99	
Satd. Flow (prot)	3539	754	1738	3539	1656	
Flt Permitted	1.00	1.00	0.12	1.00	0.99	
Satd. Flow (perm)	3539	754	218	3539	1656	
Peak-hour factor, PHF	0.82	0.82	0.91	0.91	0.75	0.75
Adj. Flow (vph)	1567	33	121	1701	25	87
RTOR Reduction (vph)	0	4	0	0	39	0
Lane Group Flow (vph)	1567	29	121	1701	73	0
Confl. Peds. (#/hr)		130	130			
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases		4	8			
Actuated Green, G (s)	40.0	40.0	40.0	40.0	9.2	
Effective Green, g (s)	40.0	40.0	40.0	40.0	9.2	
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.16	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	2474	527	152	2474	266	
v/s Ratio Prot	0.44			0.48	c0.04	
v/s Ratio Perm		0.04	c0.55			
v/c Ratio	0.63	0.06	0.80	0.69	0.27	
Uniform Delay, d1	4.6	2.7	5.8	5.0	21.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.0	24.3	0.8	0.6	
Delay (s)	5.2	2.7	30.2	5.8	21.6	
Level of Service	A	A	C	A	C	
Approach Delay (s)	5.1			7.4	21.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	57.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	620	67	210	664	249	133	771	209	254	730	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3459		1610	3385	1444	1770	3539	1537	1770	3539	1447
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3459		1610	3385	1444	1770	3539	1537	1770	3539	1447
Peak-hour factor, PHF	0.98	0.98	0.98	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	208	633	68	216	685	257	141	820	222	279	802	171
RTOR Reduction (vph)	0	7	0	0	0	194	0	0	108	0	0	97
Lane Group Flow (vph)	208	694	0	194	707	63	141	820	114	279	802	74
Confl. Peds. (#/hr)	55		51	51		55	48		14	14		48
Confl. Bikes (#/hr)			3			2			1			1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	26.4	26.4		29.4	29.4	29.4	13.3	33.6	33.6	15.6	35.9	35.9
Effective Green, g (s)	26.4	26.4		29.4	29.4	29.4	13.3	33.6	33.6	15.6	35.9	35.9
Actuated g/C Ratio	0.22	0.22		0.24	0.24	0.24	0.11	0.28	0.28	0.13	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	755	760		394	829	353	196	990	430	230	1058	432
v/s Ratio Prot	0.06	c0.20		0.12	c0.21		0.08	c0.23		c0.16	0.23	
v/s Ratio Perm						0.04			0.07			0.05
v/c Ratio	0.28	0.91		0.49	0.85	0.18	0.72	0.83	0.27	1.21	0.76	0.17
Uniform Delay, d1	38.9	45.7		38.9	43.2	35.8	51.5	40.5	33.6	52.2	38.1	31.1
Progression Factor	1.00	1.00		1.04	1.05	3.62	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	15.3		3.7	9.3	0.9	11.9	8.0	1.5	129.0	5.1	0.9
Delay (s)	39.1	61.0		44.1	54.8	130.3	63.5	48.4	35.1	181.2	43.2	31.9
Level of Service	D	E		D	D	F	E	D	D	F	D	C
Approach Delay (s)		56.0			69.7			47.7			72.4	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	61.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	754	244	36	809	33	304	65	115	32	52	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1499	1770	3502		1681	1714	1524	1770	1637	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1499	1770	3502		1681	1714	1524	1770	1637	
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.91	0.91	0.91	0.73	0.73	0.73
Adj. Flow (vph)	55	785	254	40	909	37	334	71	126	44	71	158
RTOR Reduction (vph)	0	0	47	0	2	0	0	0	69	0	68	0
Lane Group Flow (vph)	55	785	207	40	944	0	200	205	57	44	161	0
Confl. Peds. (#/hr)	41		13	13		41	14		22	22		14
Confl. Bikes (#/hr)			3			2						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	35.9	35.9	3.1	34.5		18.4	18.4	18.4	16.3	16.3	
Effective Green, g (s)	4.5	35.9	35.9	3.1	34.5		18.4	18.4	18.4	16.3	16.3	
Actuated g/C Ratio	0.05	0.40	0.40	0.03	0.38		0.20	0.20	0.20	0.18	0.18	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	87	1400	593	60	1332		341	347	309	318	294	
v/s Ratio Prot	c0.03	0.22		0.02	c0.27		0.12	c0.12		0.02	c0.10	
v/s Ratio Perm			0.14						0.04			
v/c Ratio	0.63	0.56	0.35	0.67	0.71		0.59	0.59	0.18	0.14	0.55	
Uniform Delay, d1	42.3	21.3	19.2	43.3	23.8		32.7	32.7	29.9	31.3	33.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.0	0.8	0.7	24.5	2.2		3.0	3.1	0.4	0.3	2.6	
Delay (s)	56.3	22.1	20.0	67.8	26.0		35.7	35.9	30.3	31.6	36.4	
Level of Service	E	C	B	E	C		D	D	C	C	D	
Approach Delay (s)		23.3			27.7			34.5			35.7	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	14	1121	1242	48	36	14
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	15	1205	1307	51	46	18

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	417	804	872	486	64
Volume Left (vph)	15	0	0	0	46
Volume Right (vph)	0	0	0	51	18
Hadj (s)	0.05	0.03	0.03	-0.04	0.01
Departure Headway (s)	6.2	6.2	6.1	6.0	6.9
Degree Utilization, x	0.72	1.38	1.48	0.81	0.12
Capacity (veh/h)	568	583	594	589	509
Control Delay (s)	22.4	201.1	240.1	29.0	10.9
Approach Delay (s)	140.0		164.5		10.9
Approach LOS	F		F		B

Intersection Summary			
Delay	149.5		
Level of Service	F		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	51	1015	1118	103	123	98
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	55	1103	1229	113	189	151
Pedestrians					18	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1360				2517	1303
vC1, stage 1 conf vol					1303	
vC2, stage 2 conf vol					1214	
vCu, unblocked vol	1360				2517	1303
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	89				0	22
cM capacity (veh/h)	498				172	193

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	55	1103	1342	340
Volume Left	55	0	0	189
Volume Right	0	0	113	151
cSH	498	1700	1700	209
Volume to Capacity	0.11	0.65	0.79	1.63
Queue Length 95th (ft)	9	0	0	554
Control Delay (s)	13.1	0.0	0.0	343.8
Lane LOS	B			F
Approach Delay (s)	0.6		0.0	343.8
Approach LOS				F

Intersection Summary			
Average Delay	41.4		
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	892	21	173	1049	11	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.86	0.86
Hourly flow rate (vph)	970	23	188	1140	13	203
Pedestrians	3				15	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1007		2515	996
vC1, stage 1 conf vol					996	
vC2, stage 2 conf vol					1519	
vCu, unblocked vol			1007		2515	996
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			72		90	31
cM capacity (veh/h)			679		130	293

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	992	188	1140	13	203
Volume Left	0	188	0	13	0
Volume Right	23	0	0	0	203
cSH	1700	679	1700	130	293
Volume to Capacity	0.58	0.28	0.67	0.10	0.69
Queue Length 95th (ft)	0	28	0	8	120
Control Delay (s)	0.0	12.3	0.0	35.8	41.1
Lane LOS		B		E	E
Approach Delay (s)	0.0	1.7		40.8	
Approach LOS				E	

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	850	987	70	41	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	71	988	1097	78	54	74
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1181				2273	1143
vC1, stage 1 conf vol					1143	
vC2, stage 2 conf vol					1130	
vCu, unblocked vol	1181				2273	1143
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				73	70
cM capacity (veh/h)	588				198	242

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	71	988	1174	128
Volume Left	71	0	0	54
Volume Right	0	0	78	74
cSH	588	1700	1700	222
Volume to Capacity	0.12	0.58	0.69	0.58
Queue Length 95th (ft)	10	0	0	80
Control Delay (s)	12.0	0.0	0.0	41.2
Lane LOS	B			E
Approach Delay (s)	0.8		0.0	41.2
Approach LOS				E

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	99	673	328	210	659	102	450	173	125	99	166	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1496	1770	3453		3433	1725		1770	1789	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1496	1770	3453		3433	1725		1770	1789	
Peak-hour factor, PHF	0.81	0.81	0.81	0.86	0.86	0.86	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	122	831	405	244	766	119	517	199	144	112	189	51
RTOR Reduction (vph)	0	0	130	0	11	0	0	24	0	0	9	0
Lane Group Flow (vph)	122	831	275	244	874	0	517	319	0	112	231	0
Confl. Peds. (#/hr)	4		14	14		4	20		13	13		20
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	11.4	32.9	32.9	12.6	34.1		22.4	22.4		19.0	19.0	
Effective Green, g (s)	11.4	32.9	32.9	12.6	34.1		22.4	22.4		19.0	19.0	
Actuated g/C Ratio	0.11	0.32	0.32	0.12	0.33		0.22	0.22		0.18	0.18	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	195	1126	476	215	1138		743	373		325	328	
v/s Ratio Prot	0.07	0.23		c0.14	c0.25		0.15	c0.19		0.06	c0.13	
v/s Ratio Perm			0.18									
v/c Ratio	0.63	0.74	0.58	1.13	0.77		0.70	0.86		0.34	0.70	
Uniform Delay, d1	44.0	31.4	29.4	45.4	31.1		37.4	39.0		36.8	39.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	3.5	3.4	102.4	4.1		3.1	17.8		0.9	7.2	
Delay (s)	50.9	34.9	32.8	147.8	35.2		40.4	56.8		37.6	46.8	
Level of Service	D	C	C	F	D		D	E		D	D	
Approach Delay (s)		35.7			59.5			47.0			43.9	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	103.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	830	131	28	896	148	95	24	9	112	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.96	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3409		1770	3539	1522	1681	1682		1770	1601	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3409		1770	3539	1522	1681	1682		1770	1601	
Peak-hour factor, PHF	0.81	0.81	0.81	0.88	0.88	0.88	0.82	0.82	0.82	0.78	0.78	0.78
Adj. Flow (vph)	253	1025	162	32	1018	168	116	29	11	144	33	214
RTOR Reduction (vph)	0	7	0	0	0	74	0	5	0	0	186	0
Lane Group Flow (vph)	253	1180	0	32	1018	94	78	73	0	144	61	0
Confl. Peds. (#/hr)	7		40	40		7			24	24		
Confl. Bikes (#/hr)			1			1						1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Effective Green, g (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.19	0.52		0.04	0.37	0.37	0.13	0.13		0.13	0.13	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	331	1762		70	1307	562	219	219		231	209	
v/s Ratio Prot	c0.14	0.35		0.02	c0.29		c0.05	0.04		c0.08	0.04	
v/s Ratio Perm						0.06						
v/c Ratio	0.76	0.67		0.46	0.78	0.17	0.36	0.33		0.62	0.29	
Uniform Delay, d1	36.0	16.7		43.9	26.1	19.8	37.0	36.9		38.4	36.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	1.5		1.7	3.8	0.4	0.4	0.3		3.7	0.3	
Delay (s)	45.1	18.2		45.6	29.9	20.2	37.4	37.2		42.2	37.0	
Level of Service	D	B		D	C	C	D	D		D	D	
Approach Delay (s)		22.9			29.0			37.3			38.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1106	85	73	1079	80	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3425		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3425		1770	3539	1770	1583
Peak-hour factor, PHF	0.88	0.88	0.87	0.87	0.61	0.61
Adj. Flow (vph)	1257	97	84	1240	131	120
RTOR Reduction (vph)	4	0	0	0	0	98
Lane Group Flow (vph)	1350	0	84	1240	131	22
Confl. Peds. (#/hr)		139	139		19	
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	45.8		8.6	58.4	15.2	15.2
Effective Green, g (s)	45.8		8.6	58.4	15.2	15.2
Actuated g/C Ratio	0.55		0.10	0.71	0.18	0.18
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	1899		184	2502	325	291
v/s Ratio Prot	c0.39		0.05	c0.35	c0.07	
v/s Ratio Perm						0.01
v/c Ratio	0.71		0.46	0.50	0.40	0.08
Uniform Delay, d1	13.5		34.8	5.5	29.7	27.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.1		2.4	0.6	1.1	0.2
Delay (s)	15.6		37.2	6.0	30.8	28.0
Level of Service	B		D	A	C	C
Approach Delay (s)	15.6			8.0	29.5	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1049	0	0	1150	16	154
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.59	0.59
Hourly flow rate (vph)	1153	0	0	1337	27	261
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.95		0.86	0.95
vC, conflicting volume			1153		1821	576
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1061		1387	456
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		77	50
cM capacity (veh/h)			621		116	525

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	576	576	669	669	288
Volume Left	0	0	0	0	27
Volume Right	0	0	0	0	261
cSH	1700	1700	1700	1700	394
Volume to Capacity	0.34	0.34	0.39	0.39	0.73
Queue Length 95th (ft)	0	0	0	0	143
Control Delay (s)	0.0	0.0	0.0	0.0	35.3
Lane LOS					E
Approach Delay (s)	0.0		0.0		35.3
Approach LOS					E

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1028	23	75	1104	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.89	0.89	1.00	1.00
Hourly flow rate (vph)	1117	25	84	1240	0	0
Pedestrians					6	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.91		0.94	0.91
vC, conflicting volume			1148		1925	577
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			957		1400	326
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		100	100
cM capacity (veh/h)			647		107	606

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	745	397	84	620	620
Volume Left	0	0	84	0	0
Volume Right	0	25	0	0	0
cSH	1700	1700	647	1700	1700
Volume to Capacity	0.44	0.23	0.13	0.36	0.36
Queue Length 95th (ft)	0	0	11	0	0
Control Delay (s)	0.0	0.0	11.4	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.7		
Approach LOS					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1019	9	29	1062	15	54
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.85	0.85	0.52	0.52
Hourly flow rate (vph)	1145	10	34	1249	29	104
Pedestrians					92	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					8	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	441					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			1247		1935	670
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1016		1795	363
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		49	80
cM capacity (veh/h)			553		56	517

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	763	392	34	625	625	133
Volume Left	0	0	34	0	0	29
Volume Right	0	10	0	0	0	104
cSH	1700	1700	553	1700	1700	186
Volume to Capacity	0.45	0.23	0.06	0.37	0.37	0.71
Queue Length 95th (ft)	0	0	5	0	0	112
Control Delay (s)	0.0	0.0	11.9	0.0	0.0	62.0
Lane LOS			B			F
Approach Delay (s)	0.0		0.3			62.0
Approach LOS						F

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/Tahoe Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	971	1018	42	54	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3518		1770	1539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3518		1770	1539
Peak-hour factor, PHF	0.90	0.90	0.82	0.82	0.93	0.93
Adj. Flow (vph)	54	1079	1241	51	58	46
RTOR Reduction (vph)	0	0	2	0	0	40
Lane Group Flow (vph)	54	1079	1290	0	58	6
Confl. Peds. (#/hr)						16
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.3	55.4	46.1		10.4	10.4
Effective Green, g (s)	5.3	55.4	46.1		10.4	10.4
Actuated g/C Ratio	0.07	0.74	0.62		0.14	0.14
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	125	2621	2168		246	213
v/s Ratio Prot	0.03	c0.30	c0.37		c0.03	
v/s Ratio Perm						0.00
v/c Ratio	0.43	0.41	0.60		0.24	0.03
Uniform Delay, d1	33.3	3.6	8.7		28.7	27.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.2	0.3	0.8		0.7	0.1
Delay (s)	36.6	3.9	9.5		29.3	27.9
Level of Service	D	A	A		C	C
Approach Delay (s)		5.5	9.5		28.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	74.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	869	108	140	947	116	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3444		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3444		1770	3539	1770	1583
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.66	0.66
Adj. Flow (vph)	976	121	173	1169	176	236
RTOR Reduction (vph)	8	0	0	0	0	188
Lane Group Flow (vph)	1089	0	173	1169	176	48
Confl. Peds. (#/hr)		46	46		22	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	38.0		13.6	55.6	16.2	16.2
Effective Green, g (s)	38.0		13.6	55.6	16.2	16.2
Actuated g/C Ratio	0.48		0.17	0.70	0.20	0.20
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1640		301	2465	359	321
v/s Ratio Prot	c0.32		c0.10	0.33	c0.10	
v/s Ratio Perm						0.03
v/c Ratio	0.66		0.57	0.47	0.49	0.15
Uniform Delay, d1	16.0		30.4	5.5	28.1	26.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0		3.2	0.6	1.4	0.3
Delay (s)	18.0		33.6	6.0	29.6	26.4
Level of Service	B		C	A	C	C
Approach Delay (s)	18.0			9.6	27.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

1: El Camino Real & Ralston Ave

Timing Plan: Default

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	208	701	194	707	257	141	820	222	279	802	171
v/c Ratio	0.28	0.91	0.49	0.85	0.47	0.72	0.83	0.41	1.21	0.76	0.32
Control Delay	39.8	62.6	45.9	55.7	20.0	71.6	48.3	13.9	172.5	43.6	10.0
Queue Delay	0.0	16.8	3.4	50.3	1.3	0.0	0.0	10.4	20.2	0.0	0.0
Total Delay	39.8	79.5	49.3	106.1	21.2	71.6	48.3	24.3	192.7	43.6	10.0
Queue Length 50th (ft)	69	275	170	318	88	106	305	41	~271	296	18
Queue Length 95th (ft)	104	#382	256	#429	172	#177	381	108	#444	370	73
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	785	394	828	547	221	1061	566	230	1066	533
Starvation Cap Reductn	0	0	121	272	135	0	0	0	0	0	0
Spillback Cap Reductn	0	93	0	0	0	0	0	308	147	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	1.01	0.71	1.27	0.62	0.64	0.77	0.86	3.36	0.75	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	785	254	40	946	200	205	126	44	229
v/c Ratio	0.43	0.55	0.40	0.32	0.72	0.58	0.59	0.33	0.14	0.63
Control Delay	59.7	25.1	18.0	56.2	29.8	43.3	43.3	16.6	36.3	32.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	25.1	18.0	56.2	29.8	43.3	43.3	16.6	36.3	32.4
Queue Length 50th (ft)	31	186	71	22	238	109	112	18	21	77
Queue Length 95th (ft)	#104	324	175	67	403	223	228	77	48	130
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	128	1841	807	128	1821	610	621	602	642	645
Starvation Cap Reductn	0	0	0	0	11	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.43	0.31	0.31	0.52	0.33	0.33	0.21	0.07	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	831	405	244	885	517	343	112	240
v/c Ratio	0.63	0.74	0.67	1.14	0.77	0.70	0.87	0.34	0.71
Control Delay	60.1	37.2	22.9	146.6	37.5	43.5	58.6	40.0	50.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	37.2	22.9	146.6	37.5	43.5	58.6	40.0	50.3
Queue Length 50th (ft)	79	264	125	~196	283	164	203	66	147
Queue Length 95th (ft)	130	310	199	#347	360	223	#352	116	225
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	214	1134	607	214	1147	800	424	412	425
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.73	0.67	1.14	0.77	0.65	0.81	0.27	0.56

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	253	1187	32	1018	168	78	78	144	247
v/c Ratio	0.75	0.66	0.28	0.81	0.27	0.31	0.30	0.61	0.62
Control Delay	52.9	23.4	53.1	36.6	11.8	38.4	35.9	51.4	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	23.4	53.1	36.6	11.8	38.4	35.9	51.4	16.1
Queue Length 50th (ft)	127	238	17	260	18	43	40	76	16
Queue Length 95th (ft)	#268	454	53	#539	81	84	80	137	60
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	386	1809	244	1261	614	521	525	549	645
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.66	0.13	0.81	0.27	0.15	0.15	0.26	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1354	84	1240	131	120
v/c Ratio	0.71	0.37	0.50	0.40	0.31
Control Delay	18.5	41.3	7.2	34.1	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	41.3	7.2	34.1	8.2
Queue Length 50th (ft)	241	39	107	61	0
Queue Length 95th (ft)	445	91	224	78	10
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2058	311	2905	779	764
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.27	0.43	0.17	0.16

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1079	1292	58	46
v/c Ratio	0.23	0.40	0.56	0.19	0.15
Control Delay	38.1	5.4	13.0	30.6	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	5.4	13.0	30.6	10.8
Queue Length 50th (ft)	20	67	184	22	0
Queue Length 95th (ft)	69	180	330	64	29
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	435	3168	2620	788	705
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.34	0.49	0.07	0.07

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1097	173	1169	176	236
v/c Ratio	0.67	0.58	0.48	0.49	0.47
Control Delay	19.3	42.6	6.8	35.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	42.6	6.8	35.2	7.7
Queue Length 50th (ft)	202	74	105	76	0
Queue Length 95th (ft)	331	159	176	115	9
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2289	369	3088	716	781
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.47	0.38	0.25	0.30

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	1121	1242	48	36	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frpb, ped/bikes		1.00	1.00		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.99		0.96	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		3537	3513		1730	
Flt Permitted		0.93	1.00		0.97	
Satd. Flow (perm)		3297	3513		1730	
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.78	0.78
Adj. Flow (vph)	15	1205	1307	51	46	18
RTOR Reduction (vph)	0	0	1	0	16	0
Lane Group Flow (vph)	0	1220	1357	0	48	0
Confl. Peds. (#/hr)	42			42	5	
Confl. Bikes (#/hr)				2		
Turn Type	pm+pt	NA	NA		NA	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		56.7	56.7		6.4	
Effective Green, g (s)		56.7	56.7		6.4	
Actuated g/C Ratio		0.79	0.79		0.09	
Clearance Time (s)		5.0	5.0		4.0	
Vehicle Extension (s)		7.0	7.0		4.0	
Lane Grp Cap (vph)		2592	2762		153	
v/s Ratio Prot			c0.39		c0.03	
v/s Ratio Perm		0.37				
v/c Ratio		0.47	0.49		0.31	
Uniform Delay, d1		2.6	2.7		30.8	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.5	0.5		1.6	
Delay (s)		3.1	3.2		32.4	
Level of Service		A	A		C	
Approach Delay (s)		3.1	3.2		32.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	72.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1329	72	1240	248
v/c Ratio	0.70	0.31	0.50	0.37
Control Delay	17.6	39.1	7.0	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.6	39.1	7.0	16.7
Queue Length 50th (ft)	206	29	88	26
Queue Length 95th (ft)	425	81	224	32
Internal Link Dist (ft)	713		1437	355
Turn Bay Length (ft)		150		50
Base Capacity (vph)	2277	341	3028	1639
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.21	0.41	0.15

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	997	9	29	1060	15	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3524		1770	3539	1655	
Flt Permitted	1.00		0.14	1.00	0.99	
Satd. Flow (perm)	3524		264	3539	1655	
Peak-hour factor, PHF	0.89	0.89	0.85	0.85	0.52	0.52
Adj. Flow (vph)	1120	10	34	1247	29	104
RTOR Reduction (vph)	1	0	0	0	52	0
Lane Group Flow (vph)	1129	0	34	1247	81	0
Confl. Peds. (#/hr)		92	92			
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	54.0		54.0	54.0	48.0	
Effective Green, g (s)	54.0		54.0	54.0	48.0	
Actuated g/C Ratio	0.49		0.49	0.49	0.44	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1729		129	1737	722	
v/s Ratio Prot	0.32			c0.35	c0.05	
v/s Ratio Perm			0.13			
v/c Ratio	0.65		0.26	0.72	0.11	
Uniform Delay, d1	21.0		16.4	22.0	18.4	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.9		1.1	1.4	0.3	
Delay (s)	21.9		17.5	23.5	18.7	
Level of Service	C		B	C	B	
Approach Delay (s)	21.9			23.3	18.7	
Approach LOS	C			C	B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	267	560	74	277	634	390	113	944	201	215	842	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.98	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3453		1610	3383	1449	1770	3539	1555	1770	3539	1435
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3453		1610	3383	1449	1770	3539	1555	1770	3539	1435
Peak-hour factor, PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	303	636	84	298	682	419	120	1004	214	226	886	134
RTOR Reduction (vph)	0	9	0	0	0	216	0	0	83	0	0	67
Lane Group Flow (vph)	303	711	0	268	712	203	120	1004	131	226	886	67
Confl. Peds. (#/hr)	51		33	33		51	53		5	5		53
Confl. Bikes (#/hr)			2			4						1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	26.6	26.6		27.0	27.0	27.0	12.6	36.0	36.0	15.4	38.8	38.8
Effective Green, g (s)	26.6	26.6		27.0	27.0	27.0	12.6	36.0	36.0	15.4	38.8	38.8
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.22	0.10	0.30	0.30	0.13	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	760	765		362	761	326	185	1061	466	227	1144	463
v/s Ratio Prot	0.09	c0.21		0.17	c0.21		0.07	c0.28		c0.13	c0.25	
v/s Ratio Perm						0.14			0.08			0.05
v/c Ratio	0.40	0.93		0.74	0.94	0.62	0.65	0.95	0.28	1.00	0.77	0.14
Uniform Delay, d1	39.9	45.8		43.2	45.6	41.9	51.6	41.1	32.1	52.3	36.7	28.8
Progression Factor	1.00	1.00		1.04	1.04	1.66	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	17.5		10.2	17.0	6.8	7.6	17.4	1.5	58.1	5.1	0.7
Delay (s)	40.2	63.3		55.1	64.5	76.4	59.2	58.4	33.6	110.4	41.8	29.5
Level of Service	D	E		E	E	E	E	E	C	F	D	C
Approach Delay (s)		56.5			66.3			54.5			52.9	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	727	252	34	785	14	524	145	158	26	28	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1484	1770	3524		1681	1720	1542	1770	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1484	1770	3524		1681	1720	1542	1770	1618	
Peak-hour factor, PHF	0.85	0.85	0.85	0.95	0.95	0.95	0.92	0.92	0.92	0.77	0.77	0.77
Adj. Flow (vph)	52	855	296	36	826	15	570	158	172	34	36	118
RTOR Reduction (vph)	0	0	50	0	1	0	0	0	62	0	104	0
Lane Group Flow (vph)	52	855	246	36	840	0	359	369	110	34	50	0
Confl. Peds. (#/hr)	27		17	17		27	10		12	12		10
Confl. Bikes (#/hr)			2			4						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	35.0	35.0	3.2	33.7		26.8	26.8	26.8	10.9	10.9	
Effective Green, g (s)	4.5	35.0	35.0	3.2	33.7		26.8	26.8	26.8	10.9	10.9	
Actuated g/C Ratio	0.05	0.38	0.38	0.03	0.36		0.29	0.29	0.29	0.12	0.12	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	85	1333	559	60	1278		484	496	444	207	189	
v/s Ratio Prot	c0.03	c0.24		0.02	0.24		0.21	c0.21		0.02	c0.03	
v/s Ratio Perm			0.17						0.07			
v/c Ratio	0.61	0.64	0.44	0.60	0.66		0.74	0.74	0.25	0.16	0.26	
Uniform Delay, d1	43.3	23.8	21.6	44.2	24.8		29.9	29.9	25.3	36.9	37.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.3	1.5	1.2	15.1	1.7		6.4	6.4	0.4	0.5	1.0	
Delay (s)	55.7	25.2	22.8	59.3	26.4		36.4	36.3	25.7	37.4	38.4	
Level of Service	E	C	C	E	C		D	D	C	D	D	
Approach Delay (s)		26.0			27.8			34.3			38.2	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	92.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	21	994	1281	58	40	10
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	23	1069	1348	61	51	13

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	379	713	899	511	64
Volume Left (vph)	23	0	0	0	51
Volume Right (vph)	0	0	0	61	13
Hadj (s)	0.06	0.03	0.03	-0.05	0.07
Departure Headway (s)	6.3	6.2	6.0	6.0	7.0
Degree Utilization, x	0.66	1.23	1.51	0.84	0.12
Capacity (veh/h)	563	585	601	598	504
Control Delay (s)	19.4	139.8	253.1	31.8	11.0
Approach Delay (s)	98.0		172.9		11.0
Approach LOS	F		F		B

Intersection Summary			
Delay	137.0		
Level of Service	F		
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	64	919	1161	121	92	73
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	70	999	1276	133	142	112
Pedestrians					12	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1421				2492	1354
vC1, stage 1 conf vol					1354	
vC2, stage 2 conf vol					1138	
vCu, unblocked vol	1421				2492	1354
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	85				17	38
cM capacity (veh/h)	474				171	181

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	70	999	1409	254
Volume Left	70	0	0	142
Volume Right	0	0	133	112
cSH	474	1700	1700	241
Volume to Capacity	0.15	0.59	0.83	1.06
Queue Length 95th (ft)	13	0	0	266
Control Delay (s)	13.9	0.0	0.0	117.7
Lane LOS	B			F
Approach Delay (s)	0.9		0.0	117.7
Approach LOS				F

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	870	13	152	1089	4	116
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.86	0.86
Hourly flow rate (vph)	946	14	163	1171	5	135
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			963		2454	956
vC1, stage 1 conf vol					956	
vC2, stage 2 conf vol					1498	
vCu, unblocked vol			963		2454	956
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			77		97	57
cM capacity (veh/h)			713		142	312

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	960	163	1171	5	135
Volume Left	0	163	0	5	0
Volume Right	14	0	0	0	135
cSH	1700	713	1700	142	312
Volume to Capacity	0.56	0.23	0.69	0.03	0.43
Queue Length 95th (ft)	0	22	0	3	52
Control Delay (s)	0.0	11.5	0.0	31.3	25.0
Lane LOS		B		D	D
Approach Delay (s)	0.0	1.4		25.2	
Approach LOS				D	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	59	856	1037	50	22	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	69	995	1152	56	29	64
Pedestrians			2		13	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1221				2328	1193
vC1, stage 1 conf vol					1193	
vC2, stage 2 conf vol					1135	
vCu, unblocked vol	1221				2328	1193
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				85	71
cM capacity (veh/h)	565				191	225

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	69	995	1208	93
Volume Left	69	0	0	29
Volume Right	0	0	56	64
cSH	565	1700	1700	214
Volume to Capacity	0.12	0.59	0.71	0.44
Queue Length 95th (ft)	10	0	0	51
Control Delay (s)	12.3	0.0	0.0	34.3
Lane LOS	B			D
Approach Delay (s)	0.8		0.0	34.3
Approach LOS				D

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	169	722	386	174	732	100	458	221	101	122	193	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1487	1770	3453		3433	1765		1770	1814	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1487	1770	3453		3433	1765		1770	1814	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	182	776	415	183	771	105	492	238	109	131	208	35
RTOR Reduction (vph)	0	0	144	0	10	0	0	15	0	0	6	0
Lane Group Flow (vph)	182	776	271	183	866	0	492	332	0	131	237	0
Confl. Peds. (#/hr)	13		16	16		13	15		4	4		15
Confl. Bikes (#/hr)						2			1			
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	12.6	32.4	32.4	12.6	32.4		22.7	22.7		19.2	19.2	
Effective Green, g (s)	12.6	32.4	32.4	12.6	32.4		22.7	22.7		19.2	19.2	
Actuated g/C Ratio	0.12	0.31	0.31	0.12	0.31		0.22	0.22		0.19	0.19	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	215	1108	465	215	1081		753	387		328	336	
v/s Ratio Prot	0.10	0.22		c0.10	c0.25		0.14	c0.19		0.07	c0.13	
v/s Ratio Perm			0.18									
v/c Ratio	0.85	0.70	0.58	0.85	0.80		0.65	0.86		0.40	0.71	
Uniform Delay, d1	44.5	31.2	29.8	44.5	32.6		36.8	38.8		37.0	39.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	26.0	3.0	3.6	27.0	5.2		2.3	17.5		1.1	7.1	
Delay (s)	70.5	34.2	33.4	71.4	37.8		39.0	56.3		38.1	46.5	
Level of Service	E	C	C	E	D		D	E		D	D	
Approach Delay (s)		38.8			43.6			46.2			43.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	103.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	1017	213	40	898	187	110	17	25	97	28	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.95		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3430		1770	3539	1546	1681	1634		1770	1636	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3430		1770	3539	1546	1681	1634		1770	1636	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.72	0.72	0.72	0.83	0.83	0.83
Adj. Flow (vph)	288	1183	248	43	976	203	153	24	35	117	34	145
RTOR Reduction (vph)	0	10	0	0	0	75	0	17	0	0	129	0
Lane Group Flow (vph)	288	1421	0	43	976	128	107	88	0	117	50	0
Confl. Peds. (#/hr)	1		3	3		1			6	6		
Confl. Bikes (#/hr)			1			1			1			
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Effective Green, g (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Actuated g/C Ratio	0.21	0.53		0.05	0.36	0.36	0.13	0.13		0.11	0.11	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	370	1800		80	1279	559	219	213		200	185	
v/s Ratio Prot	c0.16	c0.41		0.02	0.28		c0.06	0.05		c0.07	0.03	
v/s Ratio Perm						0.08						
v/c Ratio	0.78	0.79		0.54	0.76	0.23	0.49	0.42		0.58	0.27	
Uniform Delay, d1	34.3	17.7		42.8	25.8	20.4	37.1	36.7		38.7	37.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	3.0		3.4	3.6	0.6	0.6	0.5		2.8	0.3	
Delay (s)	43.4	20.7		46.3	29.4	21.0	37.7	37.2		41.5	37.5	
Level of Service	D	C		D	C	C	D	D		D	D	
Approach Delay (s)		24.5			28.6			37.4			39.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1405	50	33	1114	148	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3517		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3517		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.95	0.95	0.62	0.62
Adj. Flow (vph)	1544	55	35	1173	239	116
RTOR Reduction (vph)	2	0	0	0	0	92
Lane Group Flow (vph)	1597	0	35	1173	239	24
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	50.1		5.1	59.2	17.4	17.4
Effective Green, g (s)	50.1		5.1	59.2	17.4	17.4
Actuated g/C Ratio	0.59		0.06	0.69	0.20	0.20
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2058		105	2447	359	321
v/s Ratio Prot	c0.45		0.02	c0.33	c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.78		0.33	0.48	0.67	0.07
Uniform Delay, d1	13.5		38.6	6.1	31.4	27.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6		2.5	0.5	5.1	0.1
Delay (s)	16.1		41.2	6.6	36.5	27.7
Level of Service	B		D	A	D	C
Approach Delay (s)	16.1			7.6	33.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	85.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1206	0	0	1482	9	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.98	0.98	0.66	0.66
Hourly flow rate (vph)	1325	0	0	1512	14	42
Pedestrians					1	
Lane Width (ft)					16.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.90		0.89	0.90
vC, conflicting volume			1326		2082	664
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1145		1474	410
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		87	92
cM capacity (veh/h)			546		104	532

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	663	663	756	756	56
Volume Left	0	0	0	0	14
Volume Right	0	0	0	0	42
cSH	1700	1700	1700	1700	266
Volume to Capacity	0.39	0.39	0.44	0.44	0.21
Queue Length 95th (ft)	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	22.1
Lane LOS					C
Approach Delay (s)	0.0		0.0		22.1
Approach LOS					C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1427	12	24	1207	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	1586	13	25	1244	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.81		0.85	0.81
vC, conflicting volume			1601		2266	801
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1274		1730	287
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		100	100
cM capacity (veh/h)			439		63	575

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	1057	542	25	622	622
Volume Left	0	0	25	0	0
Volume Right	0	13	0	0	0
cSH	1700	1700	439	1700	1700
Volume to Capacity	0.62	0.32	0.06	0.37	0.37
Queue Length 95th (ft)	0	0	4	0	0
Control Delay (s)	0.0	0.0	13.7	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.3		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1423	9	19	1180	6	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.63	0.63
Hourly flow rate (vph)	1547	10	20	1269	10	14
Pedestrians					4	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	441					
pX, platoon unblocked			0.81		0.81	0.81
vC, conflicting volume			1561		2231	782
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1227		2053	268
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		75	98
cM capacity (veh/h)			456		38	590

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1031	525	20	634	634	24
Volume Left	0	0	20	0	0	10
Volume Right	0	10	0	0	0	14
cSH	1700	1700	456	1700	1700	87
Volume to Capacity	0.61	0.31	0.04	0.37	0.37	0.27
Queue Length 95th (ft)	0	0	4	0	0	25
Control Delay (s)	0.0	0.0	13.3	0.0	0.0	61.6
Lane LOS			B			F
Approach Delay (s)	0.0		0.2			61.6
Approach LOS						F

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/Tahoe Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	51	1387	1151	54	47	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3512		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3512		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.96	0.96	0.74	0.74
Adj. Flow (vph)	54	1460	1199	56	64	41
RTOR Reduction (vph)	0	0	2	0	0	37
Lane Group Flow (vph)	54	1460	1253	0	64	4
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.3	52.4	43.1		7.4	7.4
Effective Green, g (s)	5.3	52.4	43.1		7.4	7.4
Actuated g/C Ratio	0.08	0.76	0.63		0.11	0.11
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	136	2695	2200		190	170
v/s Ratio Prot	0.03	c0.41	0.36		c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.40	0.54	0.57		0.34	0.03
Uniform Delay, d1	30.2	3.3	7.5		28.4	27.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.6	0.5	0.7		1.4	0.1
Delay (s)	32.8	3.8	8.2		29.9	27.6
Level of Service	C	A	A		C	C
Approach Delay (s)		4.9	8.2		29.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1349	177	116	1072	89	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3468		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3468		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.97	0.97	0.84	0.84
Adj. Flow (vph)	1482	195	120	1105	106	145
RTOR Reduction (vph)	7	0	0	0	0	124
Lane Group Flow (vph)	1670	0	120	1105	106	21
Confl. Peds. (#/hr)		1	1		6	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	51.4		12.0	67.4	12.9	12.9
Effective Green, g (s)	51.4		12.0	67.4	12.9	12.9
Actuated g/C Ratio	0.58		0.14	0.76	0.15	0.15
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	2018		240	2701	258	231
v/s Ratio Prot	c0.48		c0.07	0.31	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.83		0.50	0.41	0.41	0.09
Uniform Delay, d1	14.9		35.4	3.6	34.2	32.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7		2.2	0.4	1.5	0.2
Delay (s)	18.6		37.6	4.0	35.7	32.9
Level of Service	B		D	A	D	C
Approach Delay (s)	18.6			7.3	34.1	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	303	720	268	712	419	120	1004	214	226	886	134
v/c Ratio	0.40	0.93	0.74	0.94	0.77	0.65	0.95	0.39	1.00	0.77	0.25
Control Delay	41.6	64.9	55.9	64.7	32.3	67.4	58.8	17.0	110.9	42.8	11.5
Queue Delay	0.0	4.0	56.1	46.8	19.6	0.0	0.0	20.1	50.9	0.0	0.0
Total Delay	41.6	68.8	112.1	111.5	52.0	67.4	58.8	37.1	161.9	42.8	11.5
Queue Length 50th (ft)	103	284	239	320	213	90	400	55	~186	330	19
Queue Length 95th (ft)	142	#382	#349	#432	#306	152	#533	125	#346	419	69
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	785	362	761	542	221	1061	549	227	1145	531
Starvation Cap Reductn	0	0	117	267	121	0	0	0	0	0	0
Spillback Cap Reductn	0	33	0	0	0	0	0	321	141	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.96	1.09	1.44	1.00	0.54	0.95	0.94	2.63	0.77	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	855	296	36	841	359	369	172	34	154
v/c Ratio	0.43	0.63	0.49	0.30	0.67	0.73	0.73	0.34	0.16	0.52
Control Delay	59.7	27.5	20.7	55.4	29.3	42.2	42.1	17.7	41.7	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.7	27.5	20.7	55.4	29.3	42.2	42.1	17.7	41.7	19.9
Queue Length 50th (ft)	31	230	101	21	224	195	202	37	19	20
Queue Length 95th (ft)	#87	333	196	63	353	#446	#457	117	44	58
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	122	1749	762	122	1741	579	593	585	610	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.49	0.39	0.30	0.48	0.62	0.62	0.29	0.06	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	182	776	415	183	876	492	347	131	243
v/c Ratio	0.85	0.70	0.68	0.85	0.80	0.65	0.87	0.40	0.71
Control Delay	79.0	36.1	22.2	79.7	39.6	42.1	59.6	41.1	50.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.0	36.1	22.2	79.7	39.6	42.1	59.6	41.1	50.7
Queue Length 50th (ft)	123	242	121	124	281	155	214	79	151
Queue Length 95th (ft)	#261	329	249	#263	381	221	#388	136	237
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	215	1135	617	215	1116	801	426	413	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.68	0.67	0.85	0.78	0.61	0.81	0.32	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	288	1431	43	976	203	107	105	117	179
v/c Ratio	0.76	0.78	0.35	0.79	0.33	0.48	0.45	0.57	0.57
Control Delay	50.3	24.1	50.9	34.0	12.9	43.4	35.5	50.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	24.1	50.9	34.0	12.9	43.4	35.5	50.7	18.3
Queue Length 50th (ft)	148	327	23	246	32	58	47	62	17
Queue Length 95th (ft)	#342	#697	66	#502	112	90	76	124	71
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	377	1841	238	1231	613	509	508	536	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.78	0.18	0.79	0.33	0.21	0.21	0.22	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1599	35	1173	239	116
v/c Ratio	0.76	0.20	0.48	0.65	0.28
Control Delay	18.5	40.5	7.6	39.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	40.5	7.6	39.9	7.6
Queue Length 50th (ft)	351	18	133	121	0
Queue Length 95th (ft)	#625	50	226	129	11
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2101	299	2823	748	736
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.12	0.42	0.32	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1460	1255	64	41
v/c Ratio	0.23	0.53	0.53	0.26	0.16
Control Delay	32.6	4.6	10.1	32.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	4.6	10.1	32.5	12.6
Queue Length 50th (ft)	20	110	177	23	0
Queue Length 95th (ft)	62	178	284	57	20
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	450	3385	2789	816	751
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.43	0.45	0.08	0.05

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1677	120	1105	106	145
v/c Ratio	0.83	0.50	0.41	0.41	0.41
Control Delay	21.2	44.2	4.7	39.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	44.2	4.7	39.2	9.5
Queue Length 50th (ft)	347	61	79	54	0
Queue Length 95th (ft)	#726	130	192	97	40
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2025	322	2866	625	653
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.37	0.39	0.17	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	21	994	1281	58	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frpb, ped/bikes		1.00	1.00		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.99		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		3535	3511		1742	
Flt Permitted		0.91	1.00		0.96	
Satd. Flow (perm)		3207	3511		1742	
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.78	0.78
Adj. Flow (vph)	23	1069	1348	61	51	13
RTOR Reduction (vph)	0	0	2	0	12	0
Lane Group Flow (vph)	0	1092	1407	0	52	0
Confl. Peds. (#/hr)	22			22	9	
Confl. Bikes (#/hr)				6		
Turn Type	pm+pt	NA	NA		NA	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		51.9	51.9		6.9	
Effective Green, g (s)		51.9	51.9		6.9	
Actuated g/C Ratio		0.77	0.77		0.10	
Clearance Time (s)		5.0	5.0		4.0	
Vehicle Extension (s)		7.0	7.0		4.0	
Lane Grp Cap (vph)		2454	2687		177	
v/s Ratio Prot			c0.40		c0.03	
v/s Ratio Perm		0.34				
v/c Ratio		0.44	0.52		0.30	
Uniform Delay, d1		2.8	3.1		28.2	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.5	0.6		1.3	
Delay (s)		3.3	3.7		29.5	
Level of Service		A	A		C	
Approach Delay (s)		3.3	3.7		29.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	67.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1599	35	1173	355
v/c Ratio	0.73	0.30	0.49	0.51
Control Delay	11.8	37.5	6.0	18.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.8	37.5	6.0	18.7
Queue Length 50th (ft)	153	12	92	39
Queue Length 95th (ft)	373	42	155	47
Internal Link Dist (ft)	713		1437	355
Turn Bay Length (ft)		150		50
Base Capacity (vph)	2263	116	2742	1381
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.30	0.43	0.26

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1423	9	19	1159	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3535		1770	3539	1695	
Flt Permitted	1.00		0.10	1.00	0.98	
Satd. Flow (perm)	3535		183	3539	1695	
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.63	0.63
Adj. Flow (vph)	1547	10	20	1246	10	14
RTOR Reduction (vph)	1	0	0	0	10	0
Lane Group Flow (vph)	1556	0	20	1246	14	0
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		2				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	71.1		71.1	71.1	30.9	
Effective Green, g (s)	71.1		71.1	71.1	30.9	
Actuated g/C Ratio	0.65		0.65	0.65	0.28	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2284		118	2287	476	
v/s Ratio Prot	c0.44			0.35	c0.01	
v/s Ratio Perm			0.11			
v/c Ratio	0.68		0.17	0.54	0.03	
Uniform Delay, d1	12.3		7.7	10.6	28.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.9		0.7	0.3	0.1	
Delay (s)	13.1		8.4	10.9	28.8	
Level of Service	B		A	B	C	
Approach Delay (s)	13.1			10.8	28.8	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	193	906	41	212	524	176	67	677	179	336	966	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00	0.98	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3507		1610	3384	1466	1770	3539	1548	1770	3539	1497
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3507		1610	3384	1466	1770	3539	1548	1770	3539	1497
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	205	964	44	230	570	191	72	728	192	378	1085	109
RTOR Reduction (vph)	0	3	0	0	0	152	0	0	103	0	0	48
Lane Group Flow (vph)	205	1005	0	207	593	39	72	728	89	378	1085	61
Confl. Peds. (#/hr)	45		33	33		45	27		6	6		27
Confl. Bikes (#/hr)			1			1			4			2
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	30.5	30.5		24.6	24.6	24.6	8.5	30.9	30.9	19.0	41.4	41.4
Effective Green, g (s)	30.5	30.5		24.6	24.6	24.6	8.5	30.9	30.9	19.0	41.4	41.4
Actuated g/C Ratio	0.25	0.25		0.21	0.21	0.21	0.07	0.26	0.26	0.16	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	872	891		330	693	300	125	911	398	280	1220	516
v/s Ratio Prot	0.06	c0.29		0.13	c0.18		0.04	0.21		c0.21	c0.31	
v/s Ratio Perm						0.03			0.06			0.04
v/c Ratio	0.24	1.13		0.63	0.86	0.13	0.58	0.80	0.22	1.35	0.89	0.12
Uniform Delay, d1	35.5	44.8		43.5	46.0	39.0	54.0	41.6	35.1	50.5	37.1	26.8
Progression Factor	1.00	1.00		0.48	0.51	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	71.9		3.5	9.6	0.2	6.3	7.3	1.3	179.3	9.9	0.5
Delay (s)	35.6	116.6		24.3	33.1	13.2	60.3	48.9	36.4	229.8	47.0	27.3
Level of Service	D	F		C	C	B	E	D	D	F	D	C
Approach Delay (s)		102.9			27.5			47.3			89.6	
Approach LOS		F			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	71.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	103.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	1079	444	14	641	7	333	60	66	16	48	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1519	1770	3530		1681	1710	1527	1770	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1519	1770	3530		1681	1710	1527	1770	1620	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.78	0.78	0.78	0.79	0.79	0.79
Adj. Flow (vph)	40	1124	462	16	745	8	427	77	85	20	61	222
RTOR Reduction (vph)	0	0	63	0	1	0	0	0	67	0	113	0
Lane Group Flow (vph)	40	1124	399	16	752	0	252	252	18	20	170	0
Confl. Peds. (#/hr)	30		7	7		30	5		19	19		5
Confl. Bikes (#/hr)			4			5						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.4	41.9	41.9	1.6	39.1		20.2	20.2	20.2	15.7	15.7	
Effective Green, g (s)	4.4	41.9	41.9	1.6	39.1		20.2	20.2	20.2	15.7	15.7	
Actuated g/C Ratio	0.05	0.43	0.43	0.02	0.41		0.21	0.21	0.21	0.16	0.16	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	80	1538	660	29	1431		352	358	319	288	263	
v/s Ratio Prot	c0.02	c0.32		0.01	0.21		c0.15	0.15		0.01	c0.10	
v/s Ratio Perm			0.26						0.01			
v/c Ratio	0.50	0.73	0.60	0.55	0.53		0.72	0.70	0.06	0.07	0.65	
Uniform Delay, d1	44.9	22.6	20.9	47.0	21.6		35.4	35.3	30.5	34.2	37.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.8	2.2	2.3	20.8	0.7		7.2	6.6	0.1	0.1	6.0	
Delay (s)	49.8	24.8	23.2	67.8	22.3		42.7	41.9	30.6	34.3	43.7	
Level of Service	D	C	C	E	C		D	D	C	C	D	
Approach Delay (s)		25.0			23.3			40.6			43.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	96.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	9	1577	1209	26	84	52
Peak Hour Factor	0.98	0.98	0.82	0.82	0.68	0.68
Hourly flow rate (vph)	9	1609	1474	32	124	76

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	546	1073	983	523	200
Volume Left (vph)	9	0	0	0	124
Volume Right (vph)	0	0	0	32	76
Hadj (s)	0.04	0.03	0.03	-0.01	-0.07
Departure Headway (s)	6.8	6.8	6.8	6.8	6.9
Degree Utilization, x	1.03	2.03	1.87	0.99	0.38
Capacity (veh/h)	516	536	533	523	516
Control Delay (s)	73.2	485.7	413.3	60.9	14.1
Approach Delay (s)	346.6		290.9		14.1
Approach LOS	F		F		B

Intersection Summary			
Delay	301.4		
Level of Service	F		
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	39	1503	1134	104	71	82
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.83	0.83	0.58	0.58
Hourly flow rate (vph)	41	1582	1366	125	122	141
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1501				3102	1438
vC1, stage 1 conf vol					1438	
vC2, stage 2 conf vol					1664	
vCu, unblocked vol	1501				3102	1438
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	91				0	13
cM capacity (veh/h)	443				119	162

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	41	1582	1492	264
Volume Left	41	0	0	122
Volume Right	0	0	125	141
cSH	443	1700	1700	178
Volume to Capacity	0.09	0.93	0.88	1.48
Queue Length 95th (ft)	8	0	0	416
Control Delay (s)	13.9	0.0	0.0	291.2
Lane LOS	B			F
Approach Delay (s)	0.4		0.0	291.2
Approach LOS				F

Intersection Summary			
Average Delay	22.9		
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1240	21	216	939	6	285
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.78	0.78	0.72	0.72
Hourly flow rate (vph)	1348	23	277	1204	8	396
Pedestrians	3			1	6	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1377		3126	1366
vC1, stage 1 conf vol					1365	
vC2, stage 2 conf vol					1761	
vCu, unblocked vol			1377		3126	1366
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			44		87	0
cM capacity (veh/h)			496		62	179

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1371	277	1204	8	396
Volume Left	0	277	0	8	0
Volume Right	23	0	0	0	396
cSH	1700	496	1700	62	179
Volume to Capacity	0.81	0.56	0.71	0.13	2.21
Queue Length 95th (ft)	0	85	0	11	794
Control Delay (s)	0.0	21.1	0.0	72.0	604.8
Lane LOS		C		F	F
Approach Delay (s)	0.0	3.9		593.8	
Approach LOS				F	

Intersection Summary			
Average Delay	75.5		
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	1303	768	60	44	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.82	0.82	0.73	0.73
Hourly flow rate (vph)	68	1448	937	73	60	108
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1017				2564	980
vC1, stage 1 conf vol					980	
vC2, stage 2 conf vol					1583	
vCu, unblocked vol	1017				2564	980
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	90				59	64
cM capacity (veh/h)	678				148	301

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	68	1448	1010	168
Volume Left	68	0	0	60
Volume Right	0	0	73	108
cSH	678	1700	1700	220
Volume to Capacity	0.10	0.85	0.59	0.77
Queue Length 95th (ft)	8	0	0	134
Control Delay (s)	10.9	0.0	0.0	60.7
Lane LOS	B			F
Approach Delay (s)	0.5		0.0	60.7
Approach LOS				F

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	852	248	165	611	75	497	198	116	165	179	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1529	1770	3465		3433	1751		1770	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1529	1770	3465		3433	1751		1770	1770	
Peak-hour factor, PHF	0.89	0.89	0.89	0.77	0.77	0.77	0.95	0.95	0.95	0.75	0.75	0.75
Adj. Flow (vph)	97	957	279	214	794	97	523	208	122	220	239	80
RTOR Reduction (vph)	0	0	78	0	8	0	0	20	0	0	11	0
Lane Group Flow (vph)	97	957	201	214	883	0	523	310	0	220	308	0
Confl. Peds. (#/hr)	9		5	5		9	29		1	1		29
Confl. Bikes (#/hr)			1									
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	9.2	33.2	33.2	12.6	36.6		22.1	22.1		22.0	22.0	
Effective Green, g (s)	9.2	33.2	33.2	12.6	36.6		22.1	22.1		22.0	22.0	
Actuated g/C Ratio	0.09	0.31	0.31	0.12	0.34		0.21	0.21		0.21	0.21	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	153	1104	477	209	1191		713	363		365	365	
v/s Ratio Prot	0.05	c0.27		c0.12	c0.25		0.15	c0.18		0.12	c0.17	
v/s Ratio Perm			0.13									
v/c Ratio	0.63	0.87	0.42	1.02	0.74		0.73	0.85		0.60	0.84	
Uniform Delay, d1	47.0	34.5	29.0	46.9	30.7		39.4	40.6		38.2	40.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.3	8.3	1.7	68.6	3.4		4.2	18.0		3.2	16.7	
Delay (s)	56.3	42.8	30.7	115.5	34.1		43.6	58.6		41.5	57.2	
Level of Service	E	D	C	F	C		D	E		D	E	
Approach Delay (s)		41.3			49.9			49.4			50.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	1013	243	9	1050	96	421	59	22	120	71	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (prot)	1770	3415		1770	3539	1548	1681	1686		1770	1624	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (perm)	1770	3415		1770	3539	1548	1681	1686		1770	1624	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	262	1206	289	10	1141	104	526	74	28	133	79	462
RTOR Reduction (vph)	0	14	0	0	0	61	0	3	0	0	191	0
Lane Group Flow (vph)	262	1481	0	10	1141	43	316	309	0	133	350	0
Confl. Peds. (#/hr)			4	4					4	4		
Confl. Bikes (#/hr)						2						
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	50.8		1.1	34.4	34.4	23.0	23.0		16.1	16.1	
Effective Green, g (s)	17.5	50.8		1.1	34.4	34.4	23.0	23.0		16.1	16.1	
Actuated g/C Ratio	0.16	0.47		0.01	0.32	0.32	0.21	0.21		0.15	0.15	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	286	1606		18	1127	493	357	359		263	242	
v/s Ratio Prot	c0.15	0.43		0.01	c0.32		c0.19	0.18		0.08	c0.22	
v/s Ratio Perm						0.03						
v/c Ratio	0.92	0.92		0.56	1.01	0.09	0.89	0.86		0.51	1.45	
Uniform Delay, d1	44.5	26.7		53.2	36.8	25.8	41.2	41.0		42.3	46.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.4	9.8		19.4	29.9	0.2	21.5	18.0		0.6	223.3	
Delay (s)	76.0	36.6		72.6	66.7	26.0	62.7	58.9		42.8	269.2	
Level of Service	E	D		E	E	C	E	E		D	F	
Approach Delay (s)		42.5			63.4			60.8			224.5	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	79.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	108.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1385	201	62	1843	95	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3447		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3447		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.69	0.69
Adj. Flow (vph)	1505	218	71	2118	138	41
RTOR Reduction (vph)	8	0	0	0	0	34
Lane Group Flow (vph)	1715	0	71	2118	138	7
Confl. Peds. (#/hr)		15	15		20	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	62.4		8.7	75.1	16.3	16.3
Effective Green, g (s)	62.4		8.7	75.1	16.3	16.3
Actuated g/C Ratio	0.62		0.09	0.75	0.16	0.16
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2142		153	2647	287	257
v/s Ratio Prot	0.50		0.04	c0.60	c0.08	
v/s Ratio Perm						0.00
v/c Ratio	0.80		0.46	0.80	0.48	0.03
Uniform Delay, d1	14.3		43.6	7.9	38.2	35.4
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.8		3.0	2.3	1.7	0.1
Delay (s)	17.1		46.6	10.2	39.9	35.4
Level of Service	B		D	B	D	D
Approach Delay (s)	17.1			11.4	38.9	
Approach LOS	B			B	D	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1247	0	0	1918	1	334
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.91	0.91	0.58	0.58
Hourly flow rate (vph)	1599	0	0	2108	2	576
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1055			785		
pX, platoon unblocked			0.81		0.56	0.81
vC, conflicting volume			1599		2653	799
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1279		882	297
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	0
cM capacity (veh/h)			438		160	569

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	799	799	1054	1054	578
Volume Left	0	0	0	0	2
Volume Right	0	0	0	0	576
cSH	1700	1700	1700	1700	565
Volume to Capacity	0.47	0.47	0.62	0.62	1.02
Queue Length 95th (ft)	0	0	0	0	389
Control Delay (s)	0.0	0.0	0.0	0.0	70.9
Lane LOS					F
Approach Delay (s)	0.0		0.0		70.9
Approach LOS					F

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1239	157	236	1701	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.94	0.94	1.00	1.00
Hourly flow rate (vph)	1475	187	251	1810	0	0
Pedestrians					3	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	611			1229		
pX, platoon unblocked			0.77		0.73	0.77
vC, conflicting volume			1665		2978	834
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1274		1577	200
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			40		100	100
cM capacity (veh/h)			418		29	624

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	983	679	251	905	905
Volume Left	0	0	251	0	0
Volume Right	0	187	0	0	0
cSH	1700	1700	418	1700	1700
Volume to Capacity	0.58	0.40	0.60	0.53	0.53
Queue Length 95th (ft)	0	0	95	0	0
Control Delay (s)	0.0	0.0	25.7	0.0	0.0
Lane LOS			D		
Approach Delay (s)	0.0		3.1		
Approach LOS					

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1305	27	110	1572	19	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.90	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3496		1770	3539	1656	
Flt Permitted	1.00		0.11	1.00	0.99	
Satd. Flow (perm)	3496		203	3539	1656	
Peak-hour factor, PHF	0.82	0.82	0.91	0.91	0.75	0.75
Adj. Flow (vph)	1591	33	121	1727	25	87
RTOR Reduction (vph)	2	0	0	0	36	0
Lane Group Flow (vph)	1622	0	121	1727	76	0
Confl. Peds. (#/hr)		130	130			
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	80.1		80.1	80.1	21.9	
Effective Green, g (s)	80.1		80.1	80.1	21.9	
Actuated g/C Ratio	0.73		0.73	0.73	0.20	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2545		147	2577	329	
v/s Ratio Prot	0.46			0.49	c0.05	
v/s Ratio Perm			c0.60			
v/c Ratio	0.64		0.82	0.67	0.23	
Uniform Delay, d1	7.6		10.1	7.9	37.0	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.5		29.6	0.7	1.6	
Delay (s)	8.1		39.7	8.6	38.6	
Level of Service	A		D	A	D	
Approach Delay (s)	8.1			10.7	38.6	
Approach LOS	A			B	D	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	1214	1560	25	113	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3530		1770	1508
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3530		1770	1508
Peak-hour factor, PHF	0.81	0.81	0.89	0.89	0.64	0.64
Adj. Flow (vph)	47	1499	1753	28	177	181
RTOR Reduction (vph)	0	0	1	0	0	146
Lane Group Flow (vph)	47	1499	1780	0	177	35
Confl. Peds. (#/hr)	1			1		30
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.5	62.7	53.2		17.0	17.0
Effective Green, g (s)	5.5	62.7	53.2		17.0	17.0
Actuated g/C Ratio	0.06	0.71	0.60		0.19	0.19
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	109	2501	2117		339	289
v/s Ratio Prot	0.03	c0.42	c0.50		c0.10	
v/s Ratio Perm						0.02
v/c Ratio	0.43	0.60	0.84		0.52	0.12
Uniform Delay, d1	40.1	6.6	14.3		32.2	29.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	0.7	3.7		1.9	0.3
Delay (s)	43.8	7.3	18.0		34.1	29.9
Level of Service	D	A	B		C	C
Approach Delay (s)		8.4	18.0		32.0	
Approach LOS		A	B		C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1049	106	213	1510	251	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3446		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3446		1770	3539	1770	1583
Peak-hour factor, PHF	0.77	0.77	0.92	0.92	0.78	0.78
Adj. Flow (vph)	1362	138	232	1641	322	292
RTOR Reduction (vph)	6	0	0	0	0	189
Lane Group Flow (vph)	1494	0	232	1641	322	103
Confl. Peds. (#/hr)		53	53		59	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	54.6		16.2	74.8	25.5	25.5
Effective Green, g (s)	54.6		16.2	74.8	25.5	25.5
Actuated g/C Ratio	0.50		0.15	0.69	0.24	0.24
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1737		264	2444	416	372
v/s Ratio Prot	c0.43		c0.13	0.46	c0.18	
v/s Ratio Perm						0.07
v/c Ratio	0.86		0.88	0.67	0.77	0.28
Uniform Delay, d1	23.5		45.1	9.7	38.7	33.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5		27.0	1.4	9.2	0.6
Delay (s)	29.0		72.1	11.1	47.9	34.4
Level of Service	C		E	B	D	C
Approach Delay (s)	29.0			18.6	41.5	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	108.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	205	1008	207	593	191	72	728	192	378	1085	109
v/c Ratio	0.24	1.13	0.63	0.85	0.42	0.50	0.80	0.38	1.35	0.88	0.19
Control Delay	37.4	113.5	29.1	36.0	4.6	64.3	49.0	13.5	218.5	46.5	12.2
Queue Delay	0.0	0.1	1.8	4.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	113.6	30.9	39.9	5.3	64.3	49.0	13.5	218.5	46.5	12.2
Queue Length 50th (ft)	67	~508	149	261	13	54	274	31	~383	418	19
Queue Length 95th (ft)	101	#643	170	256	11	102	347	95	#567	#555	61
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	871	893	348	732	467	177	943	514	280	1238	571
Starvation Cap Reductn	0	0	51	79	96	0	0	0	0	0	0
Spillback Cap Reductn	0	13	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	1.15	0.70	0.91	0.51	0.41	0.77	0.37	1.35	0.88	0.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	40	1124	462	16	753	252	252	85	20	283
v/c Ratio	0.28	0.72	0.63	0.16	0.53	0.70	0.69	0.21	0.07	0.74
Control Delay	53.8	26.7	21.9	56.6	25.5	49.1	48.3	8.8	38.9	34.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	26.7	21.9	56.6	25.5	49.1	48.3	8.8	38.9	34.1
Queue Length 50th (ft)	23	265	148	9	195	147	146	0	10	84
Queue Length 95th (ft)	67	477	347	35	286	242	242	25	31	161
Internal Link Dist (ft)		847			519		540			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	180	1957	886	99	1792	493	501	509	459	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.57	0.52	0.16	0.42	0.51	0.50	0.17	0.04	0.55

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	97	957	279	214	891	523	330	220	319
v/c Ratio	0.53	0.88	0.51	1.02	0.74	0.73	0.86	0.60	0.84
Control Delay	56.7	46.2	21.7	115.1	36.7	46.0	59.4	45.8	59.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.7	46.2	21.7	115.1	36.7	46.0	59.4	45.8	59.5
Queue Length 50th (ft)	65	340	94	~167	306	176	208	140	206
Queue Length 95th (ft)	119	#450	175	#251	312	236	#355	177	245
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	210	1110	557	210	1209	783	418	404	414
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.86	0.50	1.02	0.74	0.67	0.79	0.54	0.77

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	262	1495	10	1141	104	316	312	133	541
v/c Ratio	0.89	0.90	0.13	1.08	0.20	0.86	0.84	0.49	1.24
Control Delay	74.4	33.8	53.4	90.1	9.6	62.1	59.0	49.2	147.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	33.8	53.4	90.1	9.6	62.1	59.0	49.2	147.8
Queue Length 50th (ft)	179	465	7	~488	8	218	212	87	~334
Queue Length 95th (ft)	#287	#671	25	#631	49	282	274	152	#553
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	322	1668	271	1052	522	435	439	271	438
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.90	0.04	1.08	0.20	0.73	0.71	0.49	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1723	71	2118	138	41
v/c Ratio	0.80	0.38	0.80	0.48	0.14
Control Delay	20.0	50.8	12.3	44.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	50.8	12.3	44.3	12.2
Queue Length 50th (ft)	393	43	331	83	0
Queue Length 95th (ft)	686	91	584	108	16
Internal Link Dist (ft)	705		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2197	252	2890	560	529
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.78	0.28	0.73	0.25	0.08

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1624	121	1727	112
v/c Ratio	0.64	0.82	0.67	0.31
Control Delay	8.6	51.8	9.2	28.2
Queue Delay	2.2	0.0	0.0	0.0
Total Delay	10.8	51.8	9.2	28.2
Queue Length 50th (ft)	199	38	222	43
Queue Length 95th (ft)	202	#68	272	75
Internal Link Dist (ft)	361		90	321
Turn Bay Length (ft)		100		
Base Capacity (vph)	2734	158	2766	365
Starvation Cap Reductn	922	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.90	0.77	0.62	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	47	1499	1781	177	181
v/c Ratio	0.26	0.61	0.82	0.51	0.41
Control Delay	43.1	8.7	21.0	37.7	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	8.7	21.0	37.7	8.2
Queue Length 50th (ft)	27	237	497	93	0
Queue Length 95th (ft)	55	245	#711	109	10
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	333	2981	2160	604	629
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.50	0.82	0.29	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1500	232	1641	322	292
v/c Ratio	0.86	0.88	0.67	0.78	0.52
Control Delay	30.4	79.4	12.1	52.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	79.4	12.1	52.9	11.0
Queue Length 50th (ft)	465	169	318	222	26
Queue Length 95th (ft)	483	#345	471	271	61
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	1904	264	2614	546	659
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.79	0.88	0.63	0.59	0.44

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	685	68	214	701	266	134	816	215	297	839	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3465		1610	3385	1444	1770	3539	1537	1770	3539	1447
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3465		1610	3385	1444	1770	3539	1537	1770	3539	1447
Peak-hour factor, PHF	0.98	0.98	0.98	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	232	699	69	221	723	274	143	868	229	326	922	204
RTOR Reduction (vph)	0	6	0	0	0	210	0	0	103	0	0	100
Lane Group Flow (vph)	232	762	0	199	745	64	143	868	126	326	922	104
Confl. Peds. (#/hr)	55		51	51		55	48		14	14		48
Confl. Bikes (#/hr)			3			2			1			1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	27.0	27.0		28.0	28.0	28.0	13.5	35.0	35.0	15.0	36.5	36.5
Effective Green, g (s)	27.0	27.0		28.0	28.0	28.0	13.5	35.0	35.0	15.0	36.5	36.5
Actuated g/C Ratio	0.22	0.22		0.23	0.23	0.23	0.11	0.29	0.29	0.12	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	772	779		375	789	336	199	1032	448	221	1076	440
v/s Ratio Prot	0.07	c0.22		0.12	c0.22		0.08	0.25		c0.18	c0.26	
v/s Ratio Perm						0.04			0.08			0.07
v/c Ratio	0.30	0.98		0.53	0.94	0.19	0.72	0.84	0.28	1.48	0.86	0.24
Uniform Delay, d1	38.7	46.2		40.3	45.2	36.9	51.4	39.9	32.8	52.5	39.3	31.3
Progression Factor	1.00	1.00		1.04	1.05	3.61	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	26.5		4.6	19.0	1.1	11.7	8.3	1.6	236.6	8.8	1.3
Delay (s)	38.9	72.7		46.5	66.4	134.3	63.1	48.2	34.3	289.1	48.1	32.6
Level of Service	D	E		D	E	F	E	D	C	F	D	C
Approach Delay (s)		64.9			78.4			47.3			100.0	
Approach LOS		E			E			D			F	

Intersection Summary			
HCM 2000 Control Delay	74.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	838	244	36	857	33	304	65	115	32	52	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1498	1770	3504		1681	1714	1523	1770	1637	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1498	1770	3504		1681	1714	1523	1770	1637	
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.91	0.91	0.91	0.73	0.73	0.73
Adj. Flow (vph)	55	873	254	40	963	37	334	71	126	44	71	158
RTOR Reduction (vph)	0	0	46	0	2	0	0	0	70	0	68	0
Lane Group Flow (vph)	55	873	208	40	998	0	200	205	56	44	161	0
Confl. Peds. (#/hr)	41		13	13		41	14		22	22		14
Confl. Bikes (#/hr)			3			2						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	37.7	37.7	3.1	36.3		18.5	18.5	18.5	16.3	16.3	
Effective Green, g (s)	4.5	37.7	37.7	3.1	36.3		18.5	18.5	18.5	16.3	16.3	
Actuated g/C Ratio	0.05	0.41	0.41	0.03	0.39		0.20	0.20	0.20	0.18	0.18	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	86	1440	609	59	1373		335	342	304	311	288	
v/s Ratio Prot	c0.03	0.25		0.02	c0.28		0.12	c0.12		0.02	c0.10	
v/s Ratio Perm			0.14						0.04			
v/c Ratio	0.64	0.61	0.34	0.68	0.73		0.60	0.60	0.19	0.14	0.56	
Uniform Delay, d1	43.3	21.6	18.9	44.3	23.9		33.7	33.7	30.8	32.2	34.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.6	1.1	0.7	26.7	2.4		3.3	3.3	0.4	0.3	2.9	
Delay (s)	57.8	22.7	19.6	70.9	26.3		37.0	37.0	31.2	32.5	37.7	
Level of Service	E	C	B	E	C		D	D	C	C	D	
Approach Delay (s)		23.7			28.0			35.6			36.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	92.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	14	1216	1298	48	36	14
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	15	1308	1366	51	46	18

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	451	872	911	506	64
Volume Left (vph)	15	0	0	0	46
Volume Right (vph)	0	0	0	51	18
Hadj (s)	0.05	0.03	0.03	-0.04	0.01
Departure Headway (s)	6.3	6.2	6.2	6.1	6.9
Degree Utilization, x	0.78	1.51	1.56	0.86	0.12
Capacity (veh/h)	451	573	588	584	509
Control Delay (s)	27.0	254.6	275.2	33.7	10.9
Approach Delay (s)	177.0		188.9		10.9
Approach LOS	F		F		B

Intersection Summary			
Delay	179.2		
Level of Service	F		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	51	1082	1169	103	123	98
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	55	1176	1285	113	189	151
Pedestrians					18	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1416				2646	1359
vC1, stage 1 conf vol					1359	
vC2, stage 2 conf vol					1287	
vCu, unblocked vol	1416				2646	1359
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				0	16
cM capacity (veh/h)	474				158	179

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	55	1176	1398	340
Volume Left	55	0	0	189
Volume Right	0	0	113	151
cSH	474	1700	1700	188
Volume to Capacity	0.12	0.69	0.82	1.81
Queue Length 95th (ft)	10	0	0	606
Control Delay (s)	13.6	0.0	0.0	426.0
Lane LOS	B			F
Approach Delay (s)	0.6		0.0	426.0
Approach LOS				F

Intersection Summary			
Average Delay	49.0		
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	954	21	173	1079	11	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.86	0.86
Hourly flow rate (vph)	1037	23	188	1173	13	203
Pedestrians	3				15	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1075		2615	1063
vC1, stage 1 conf vol					1063	
vC2, stage 2 conf vol					1552	
vCu, unblocked vol			1075		2615	1063
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			71		89	24
cM capacity (veh/h)			641		122	268

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1060	188	1173	13	203
Volume Left	0	188	0	13	0
Volume Right	23	0	0	0	203
cSH	1700	641	1700	122	268
Volume to Capacity	0.62	0.29	0.69	0.11	0.76
Queue Length 95th (ft)	0	31	0	9	140
Control Delay (s)	0.0	12.9	0.0	38.1	51.2
Lane LOS		B		E	F
Approach Delay (s)	0.0	1.8		50.4	
Approach LOS				F	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	896	975	70	41	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	71	1042	1083	78	54	74
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1168				2313	1129
vC1, stage 1 conf vol					1129	
vC2, stage 2 conf vol					1184	
vCu, unblocked vol	1168				2313	1129
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				72	70
cM capacity (veh/h)	595				193	247

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	71	1042	1161	128
Volume Left	71	0	0	54
Volume Right	0	0	78	74
cSH	595	1700	1700	221
Volume to Capacity	0.12	0.61	0.68	0.58
Queue Length 95th (ft)	10	0	0	81
Control Delay (s)	11.9	0.0	0.0	41.6
Lane LOS	B			E
Approach Delay (s)	0.8		0.0	41.6
Approach LOS				E

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	714	380	224	671	102	508	175	132	104	192	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1494	1770	3455		3433	1721		1770	1791	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1494	1770	3455		3433	1721		1770	1791	
Peak-hour factor, PHF	0.81	0.81	0.81	0.86	0.86	0.86	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	123	881	469	260	780	119	584	201	152	118	218	57
RTOR Reduction (vph)	0	0	142	0	11	0	0	25	0	0	9	0
Lane Group Flow (vph)	123	881	327	260	888	0	584	328	0	118	266	0
Confl. Peds. (#/hr)	4		14	14		4	20		13	13		20
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	11.5	33.2	33.2	12.5	34.2		22.8	22.8		20.3	20.3	
Effective Green, g (s)	11.5	33.2	33.2	12.5	34.2		22.8	22.8		20.3	20.3	
Actuated g/C Ratio	0.11	0.32	0.32	0.12	0.32		0.22	0.22		0.19	0.19	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	193	1115	471	210	1122		743	372		341	345	
v/s Ratio Prot	0.07	0.25		c0.15	c0.26		0.17	c0.19		0.07	c0.15	
v/s Ratio Perm			0.22									
v/c Ratio	0.64	0.79	0.69	1.24	0.79		0.79	0.88		0.35	0.77	
Uniform Delay, d1	44.9	32.9	31.6	46.4	32.3		38.9	39.9		36.8	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.5	4.7	6.5	141.0	4.7		5.8	21.4		0.8	10.8	
Delay (s)	52.5	37.6	38.1	187.4	37.1		44.8	61.3		37.6	51.1	
Level of Service	D	D	D	F	D		D	E		D	D	
Approach Delay (s)		39.0			70.8			51.0			47.0	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	105.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	921	131	28	936	148	95	24	9	112	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.96	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3420		1770	3539	1522	1681	1682		1770	1601	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3420		1770	3539	1522	1681	1682		1770	1601	
Peak-hour factor, PHF	0.81	0.81	0.81	0.88	0.88	0.88	0.82	0.82	0.82	0.78	0.78	0.78
Adj. Flow (vph)	253	1137	162	32	1064	168	116	29	11	144	33	214
RTOR Reduction (vph)	0	6	0	0	0	74	0	5	0	0	186	0
Lane Group Flow (vph)	253	1293	0	32	1064	94	78	73	0	144	61	0
Confl. Peds. (#/hr)	7		40	40		7			24	24		
Confl. Bikes (#/hr)			1			1						1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Effective Green, g (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.19	0.52		0.04	0.37	0.37	0.13	0.13		0.13	0.13	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	331	1768		70	1307	562	219	219		231	209	
v/s Ratio Prot	c0.14	0.38		0.02	c0.30		c0.05	0.04		c0.08	0.04	
v/s Ratio Perm						0.06						
v/c Ratio	0.76	0.73		0.46	0.81	0.17	0.36	0.33		0.62	0.29	
Uniform Delay, d1	36.0	17.5		43.9	26.6	19.8	37.0	36.9		38.4	36.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	2.2		1.7	4.7	0.4	0.4	0.3		3.7	0.3	
Delay (s)	45.1	19.7		45.6	31.3	20.2	37.4	37.2		42.2	37.0	
Level of Service	D	B		D	C	C	D	D		D	D	
Approach Delay (s)		23.8			30.2			37.3			38.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1218	26	47	1156	41	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3506		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3506		1770	3539	1770	1583
Peak-hour factor, PHF	0.88	0.88	0.87	0.87	0.61	0.61
Adj. Flow (vph)	1384	30	54	1329	67	85
RTOR Reduction (vph)	1	0	0	0	0	73
Lane Group Flow (vph)	1413	0	54	1329	67	12
Confl. Peds. (#/hr)		139	139		19	
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	49.2		5.4	58.6	11.5	11.5
Effective Green, g (s)	49.2		5.4	58.6	11.5	11.5
Actuated g/C Ratio	0.62		0.07	0.74	0.15	0.15
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2180		120	2621	257	230
v/s Ratio Prot	c0.40		0.03	c0.38	c0.04	
v/s Ratio Perm						0.01
v/c Ratio	0.65		0.45	0.51	0.26	0.05
Uniform Delay, d1	9.5		35.4	4.3	30.0	29.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3		3.6	0.5	0.7	0.1
Delay (s)	10.7		39.1	4.8	30.8	29.2
Level of Service	B		D	A	C	C
Approach Delay (s)	10.7			6.1	29.9	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1063	0	0	1190	19	184
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.59	0.59
Hourly flow rate (vph)	1168	0	0	1384	32	312
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.95		0.86	0.95
vC, conflicting volume			1168		1860	584
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1070		1405	454
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		71	41
cM capacity (veh/h)			614		112	525

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	584	584	692	692	344
Volume Left	0	0	0	0	32
Volume Right	0	0	0	0	312
cSH	1700	1700	1700	1700	390
Volume to Capacity	0.34	0.34	0.41	0.41	0.88
Queue Length 95th (ft)	0	0	0	0	221
Control Delay (s)	0.0	0.0	0.0	0.0	53.8
Lane LOS					F
Approach Delay (s)	0.0		0.0		53.8
Approach LOS					F

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1041	28	90	1129	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.89	0.89	1.00	1.00
Hourly flow rate (vph)	1132	30	101	1269	0	0
Pedestrians					6	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.90		0.94	0.90
vC, conflicting volume			1168		1989	587
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			972		1463	328
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		100	100
cM capacity (veh/h)			637		94	603

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	754	408	101	634	634
Volume Left	0	0	101	0	0
Volume Right	0	30	0	0	0
cSH	1700	1700	637	1700	1700
Volume to Capacity	0.44	0.24	0.16	0.37	0.37
Queue Length 95th (ft)	0	0	14	0	0
Control Delay (s)	0.0	0.0	11.7	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.9		
Approach LOS					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1035	9	29	1085	15	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3525		1770	3539	1655	
Flt Permitted	1.00		0.13	1.00	0.99	
Satd. Flow (perm)	3525		251	3539	1655	
Peak-hour factor, PHF	0.89	0.89	0.85	0.85	0.52	0.52
Adj. Flow (vph)	1163	10	34	1276	29	104
RTOR Reduction (vph)	1	0	0	0	48	0
Lane Group Flow (vph)	1172	0	34	1276	85	0
Confl. Peds. (#/hr)		92	92			
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	55.4		55.4	55.4	46.6	
Effective Green, g (s)	55.4		55.4	55.4	46.6	
Actuated g/C Ratio	0.50		0.50	0.50	0.42	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1775		126	1782	701	
v/s Ratio Prot	0.33			c0.36	c0.05	
v/s Ratio Perm			0.14			
v/c Ratio	0.66		0.27	0.72	0.12	
Uniform Delay, d1	20.3		15.7	21.2	19.3	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.9		1.2	1.4	0.4	
Delay (s)	21.2		16.8	22.6	19.6	
Level of Service	C		B	C	B	
Approach Delay (s)	21.2			22.4	19.6	
Approach LOS	C			C	B	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	40.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	984	1039	42	54	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3519		1770	1539
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3519		1770	1539
Peak-hour factor, PHF	0.90	0.90	0.82	0.82	0.93	0.93
Adj. Flow (vph)	54	1093	1267	51	58	46
RTOR Reduction (vph)	0	0	2	0	0	40
Lane Group Flow (vph)	54	1093	1316	0	58	6
Confl. Peds. (#/hr)						16
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.3	56.2	46.9		10.5	10.5
Effective Green, g (s)	5.3	56.2	46.9		10.5	10.5
Actuated g/C Ratio	0.07	0.74	0.62		0.14	0.14
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	123	2627	2180		245	213
v/s Ratio Prot	0.03	c0.31	c0.37		c0.03	
v/s Ratio Perm						0.00
v/c Ratio	0.44	0.42	0.60		0.24	0.03
Uniform Delay, d1	33.8	3.6	8.8		29.0	28.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.4	0.3	0.9		0.7	0.1
Delay (s)	37.2	3.9	9.6		29.7	28.3
Level of Service	D	A	A		C	C
Approach Delay (s)		5.5	9.6		29.1	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	867	108	140	953	116	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3444		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3444		1770	3539	1770	1583
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.66	0.66
Adj. Flow (vph)	974	121	173	1177	176	236
RTOR Reduction (vph)	8	0	0	0	0	188
Lane Group Flow (vph)	1087	0	173	1177	176	48
Confl. Peds. (#/hr)		46	46		22	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	38.0		13.6	55.6	16.2	16.2
Effective Green, g (s)	38.0		13.6	55.6	16.2	16.2
Actuated g/C Ratio	0.48		0.17	0.70	0.20	0.20
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1640		301	2465	359	321
v/s Ratio Prot	c0.32		c0.10	0.33	c0.10	
v/s Ratio Perm						0.03
v/c Ratio	0.66		0.57	0.48	0.49	0.15
Uniform Delay, d1	16.0		30.4	5.5	28.1	26.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0		3.2	0.6	1.4	0.3
Delay (s)	18.0		33.6	6.1	29.6	26.4
Level of Service	B		C	A	C	C
Approach Delay (s)	18.0			9.6	27.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	232	768	199	745	274	143	868	229	326	922	204
v/c Ratio	0.30	0.98	0.53	0.94	0.50	0.72	0.84	0.42	1.48	0.86	0.38
Control Delay	39.9	73.0	47.7	66.4	19.8	71.7	48.4	14.8	273.9	48.6	12.8
Queue Delay	0.0	25.7	4.9	46.0	1.5	0.0	0.0	12.8	22.8	0.0	0.0
Total Delay	39.9	98.6	52.6	112.4	21.3	71.7	48.4	27.6	296.6	48.6	12.8
Queue Length 50th (ft)	77	310	173	335	90	107	327	48	~347	355	34
Queue Length 95th (ft)	114	#442	261	#465	174	#186	408	119	#531	#449	99
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	786	376	791	547	221	1061	563	221	1076	540
Starvation Cap Reductn	0	0	117	264	133	0	0	0	0	0	0
Spillback Cap Reductn	0	65	0	0	0	0	0	306	147	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.07	0.77	1.41	0.66	0.65	0.82	0.89	4.41	0.86	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	873	254	40	1000	200	205	126	44	229
v/c Ratio	0.44	0.60	0.39	0.33	0.74	0.59	0.59	0.34	0.14	0.64
Control Delay	61.1	25.8	17.7	57.3	30.2	44.5	44.4	16.8	37.1	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.1	25.8	17.7	57.3	30.2	44.5	44.4	16.8	37.1	33.2
Queue Length 50th (ft)	32	214	71	23	257	114	117	19	22	80
Queue Length 95th (ft)	#104	368	175	67	433	223	228	77	48	130
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	125	1794	789	125	1775	594	605	589	626	630
Starvation Cap Reductn	0	0	0	0	11	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.49	0.32	0.32	0.57	0.34	0.34	0.21	0.07	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	123	881	469	260	899	584	353	118	275
v/c Ratio	0.64	0.79	0.77	1.23	0.79	0.79	0.89	0.35	0.78
Control Delay	61.5	40.0	28.1	180.1	39.2	47.9	62.1	39.8	54.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	40.0	28.1	180.1	39.2	47.9	62.1	39.8	54.7
Queue Length 50th (ft)	82	295	170	~227	300	196	217	70	173
Queue Length 95th (ft)	131	332	249	#373	366	254	#367	121	259
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	211	1113	612	211	1132	785	418	405	418
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.79	0.77	1.23	0.79	0.74	0.84	0.29	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	253	1299	32	1064	168	78	78	144	247
v/c Ratio	0.75	0.72	0.28	0.84	0.27	0.31	0.30	0.61	0.62
Control Delay	52.9	25.0	53.1	38.4	11.8	38.4	35.9	51.4	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	25.0	53.1	38.4	11.8	38.4	35.9	51.4	16.1
Queue Length 50th (ft)	127	276	17	277	18	43	40	76	16
Queue Length 95th (ft)	#268	#556	53	#577	81	84	80	137	60
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	386	1814	244	1261	614	521	525	549	645
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.72	0.13	0.84	0.27	0.15	0.15	0.26	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1414	54	1329	67	85
v/c Ratio	0.61	0.26	0.49	0.21	0.24
Control Delay	14.7	39.2	6.7	30.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	39.2	6.7	30.3	8.8
Queue Length 50th (ft)	216	23	95	28	0
Queue Length 95th (ft)	451	65	249	45	11
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2328	343	3020	858	811
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.16	0.44	0.08	0.10

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1173	34	1276	133
v/c Ratio	0.66	0.28	0.72	0.18
Control Delay	21.6	19.7	23.1	10.8
Queue Delay	0.3	0.0	0.0	0.0
Total Delay	22.0	19.7	23.1	10.8
Queue Length 50th (ft)	312	13	354	20
Queue Length 95th (ft)	285	28	298	21
Internal Link Dist (ft)	361		89	321
Turn Bay Length (ft)		100		
Base Capacity (vph)	2468	168	2477	749
Starvation Cap Reductn	630	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.64	0.20	0.52	0.18

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1093	1318	58	46
v/c Ratio	0.24	0.40	0.56	0.19	0.15
Control Delay	38.5	5.4	13.1	30.9	10.9
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	38.5	5.4	13.2	30.9	10.9
Queue Length 50th (ft)	21	70	192	22	0
Queue Length 95th (ft)	69	183	340	64	29
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	427	3163	2595	774	693
Starvation Cap Reductn	0	0	327	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.35	0.58	0.07	0.07

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1095	173	1177	176	236
v/c Ratio	0.67	0.58	0.48	0.49	0.47
Control Delay	19.3	42.6	6.9	35.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	42.6	6.9	35.2	7.7
Queue Length 50th (ft)	202	74	106	76	0
Queue Length 95th (ft)	331	159	178	115	9
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2290	369	3088	716	781
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.47	0.38	0.25	0.30

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	296	591	74	282	669	416	116	998	206	251	967	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.98	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3458		1610	3383	1449	1770	3539	1555	1770	3539	1435
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3458		1610	3383	1449	1770	3539	1555	1770	3539	1435
Peak-hour factor, PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	336	672	84	303	719	447	123	1062	219	264	1018	160
RTOR Reduction (vph)	0	8	0	0	0	206	0	0	80	0	0	69
Lane Group Flow (vph)	336	748	0	273	749	241	123	1062	139	264	1018	91
Confl. Peds. (#/hr)	51		33	33		51	53		5	5		53
Confl. Bikes (#/hr)			2			4						1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	27.0	27.0		27.0	27.0	27.0	12.7	36.0	36.0	15.0	38.3	38.3
Effective Green, g (s)	27.0	27.0		27.0	27.0	27.0	12.7	36.0	36.0	15.0	38.3	38.3
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.22	0.11	0.30	0.30	0.12	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	772	778		362	761	326	187	1061	466	221	1129	458
v/s Ratio Prot	0.10	c0.22		0.17	c0.22		0.07	c0.30		c0.15	0.29	
v/s Ratio Perm						0.17			0.09			0.06
v/c Ratio	0.44	0.96		0.75	0.98	0.74	0.66	1.00	0.30	1.19	0.90	0.20
Uniform Delay, d1	39.9	46.0		43.4	46.3	43.2	51.6	42.0	32.3	52.5	39.1	29.7
Progression Factor	1.00	1.00		1.04	1.04	1.45	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	23.2		11.2	25.8	11.5	8.1	27.9	1.6	123.1	11.6	1.0
Delay (s)	40.3	69.2		56.2	73.9	74.1	59.6	69.9	33.9	175.6	50.6	30.7
Level of Service	D	E		E	E	E	E	E	C	F	D	C
Approach Delay (s)		60.3			70.7			63.4			71.3	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	66.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	775	252	34	834	14	524	145	158	26	28	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1483	1770	3525		1681	1720	1541	1770	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1483	1770	3525		1681	1720	1541	1770	1618	
Peak-hour factor, PHF	0.85	0.85	0.85	0.95	0.95	0.95	0.92	0.92	0.92	0.77	0.77	0.77
Adj. Flow (vph)	52	912	296	36	878	15	570	158	172	34	36	118
RTOR Reduction (vph)	0	0	48	0	1	0	0	0	62	0	101	0
Lane Group Flow (vph)	52	912	248	36	892	0	359	369	110	34	53	0
Confl. Peds. (#/hr)	27		17	17		27	10		12	12		10
Confl. Bikes (#/hr)			2			4						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	36.5	36.5	3.2	35.2		27.0	27.0	27.0	11.0	11.0	
Effective Green, g (s)	4.5	36.5	36.5	3.2	35.2		27.0	27.0	27.0	11.0	11.0	
Actuated g/C Ratio	0.05	0.39	0.39	0.03	0.37		0.29	0.29	0.29	0.12	0.12	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	84	1364	571	59	1310		479	490	439	205	187	
v/s Ratio Prot	c0.03	c0.26		0.02	0.25		0.21	c0.21		0.02	c0.03	
v/s Ratio Perm			0.17						0.07			
v/c Ratio	0.62	0.67	0.43	0.61	0.68		0.75	0.75	0.25	0.17	0.28	
Uniform Delay, d1	44.3	24.1	21.5	45.1	25.0		30.8	30.8	26.1	37.7	38.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.8	1.7	1.1	17.2	1.9		6.7	6.9	0.4	0.5	1.1	
Delay (s)	57.1	25.8	22.6	62.4	26.9		37.5	37.7	26.5	38.2	39.4	
Level of Service	E	C	C	E	C		D	D	C	D	D	
Approach Delay (s)		26.3			28.3			35.5			39.2	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	21	1046	1342	58	40	10
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	23	1125	1413	61	51	13

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	397	750	942	532	64
Volume Left (vph)	23	0	0	0	51
Volume Right (vph)	0	0	0	61	13
Hadj (s)	0.06	0.03	0.03	-0.05	0.07
Departure Headway (s)	6.3	6.3	6.1	6.0	7.0
Degree Utilization, x	0.70	1.31	1.59	0.89	0.12
Capacity (veh/h)	560	583	598	595	504
Control Delay (s)	21.3	169.7	288.9	37.4	11.0
Approach Delay (s)	118.3		198.1		11.0
Approach LOS	F		F		B

Intersection Summary			
Delay	159.6		
Level of Service	F		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	64	948	1218	121	92	73
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	70	1030	1338	133	142	112
Pedestrians					12	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1483				2587	1417
vC1, stage 1 conf vol					1417	
vC2, stage 2 conf vol					1170	
vCu, unblocked vol	1483				2587	1417
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	85				12	32
cM capacity (veh/h)	449				160	166

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	70	1030	1471	254
Volume Left	70	0	0	142
Volume Right	0	0	133	112
cSH	449	1700	1700	213
Volume to Capacity	0.15	0.61	0.87	1.19
Queue Length 95th (ft)	14	0	0	317
Control Delay (s)	14.5	0.0	0.0	170.6
Lane LOS	B			F
Approach Delay (s)	0.9		0.0	170.6
Approach LOS				F

Intersection Summary			
Average Delay	15.7		
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	898	13	152	1124	4	116
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.86	0.86
Hourly flow rate (vph)	976	14	163	1209	5	135
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			993		2522	986
vC1, stage 1 conf vol					986	
vC2, stage 2 conf vol					1535	
vCu, unblocked vol			993		2522	986
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			76		97	55
cM capacity (veh/h)			695		135	300

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	990	163	1209	5	135
Volume Left	0	163	0	5	0
Volume Right	14	0	0	0	135
cSH	1700	695	1700	135	300
Volume to Capacity	0.58	0.24	0.71	0.03	0.45
Queue Length 95th (ft)	0	23	0	3	55
Control Delay (s)	0.0	11.8	0.0	32.7	26.5
Lane LOS		B		D	D
Approach Delay (s)	0.0	1.4		26.7	
Approach LOS				D	

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	59	870	1028	50	22	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	69	1012	1142	56	29	64
Pedestrians			2		13	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1211				2334	1183
vC1, stage 1 conf vol					1183	
vC2, stage 2 conf vol					1151	
vCu, unblocked vol	1211				2334	1183
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				85	72
cM capacity (veh/h)	570				191	228

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	69	1012	1198	93
Volume Left	69	0	0	29
Volume Right	0	0	56	64
cSH	570	1700	1700	215
Volume to Capacity	0.12	0.60	0.70	0.43
Queue Length 95th (ft)	10	0	0	51
Control Delay (s)	12.2	0.0	0.0	34.0
Lane LOS	B			D
Approach Delay (s)	0.8		0.0	34.0
Approach LOS				D

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	733	445	185	750	100	518	223	106	127	223	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1486	1770	3454		3433	1762		1770	1816	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1486	1770	3454		3433	1762		1770	1816	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	183	788	478	195	789	105	557	240	114	137	240	39
RTOR Reduction (vph)	0	0	163	0	9	0	0	16	0	0	6	0
Lane Group Flow (vph)	183	788	315	195	885	0	557	338	0	137	273	0
Confl. Peds. (#/hr)	13		16	16		13	15		4	4		15
Confl. Bikes (#/hr)						2			1			
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	12.5	33.0	33.0	12.5	33.0		22.9	22.9		20.5	20.5	
Effective Green, g (s)	12.5	33.0	33.0	12.5	33.0		22.9	22.9		20.5	20.5	
Actuated g/C Ratio	0.12	0.31	0.31	0.12	0.31		0.22	0.22		0.19	0.19	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	209	1108	465	209	1081		745	382		344	353	
v/s Ratio Prot	0.10	0.22		c0.11	c0.26		0.16	c0.19		0.08	c0.15	
v/s Ratio Perm			0.21									
v/c Ratio	0.88	0.71	0.68	0.93	0.82		0.75	0.89		0.40	0.77	
Uniform Delay, d1	45.7	32.0	31.6	46.0	33.4		38.5	40.0		37.1	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.7	3.1	6.0	44.0	5.8		4.4	21.4		1.0	10.7	
Delay (s)	77.4	35.1	37.5	90.0	39.3		42.9	61.4		38.1	51.0	
Level of Service	E	D	D	F	D		D	E		D	D	
Approach Delay (s)		41.3			48.4			50.1			46.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	105.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	1091	213	40	943	187	110	17	25	97	28	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3437		1770	3539	1546	1681	1634		1770	1636	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3437		1770	3539	1546	1681	1634		1770	1636	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.72	0.72	0.72	0.83	0.83	0.83
Adj. Flow (vph)	288	1269	248	43	1025	203	153	24	35	117	34	145
RTOR Reduction (vph)	0	9	0	0	0	75	0	17	0	0	129	0
Lane Group Flow (vph)	288	1508	0	43	1025	128	107	88	0	117	50	0
Confl. Peds. (#/hr)	1		3	3		1			6	6		
Confl. Bikes (#/hr)			1			1			1			
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Effective Green, g (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Actuated g/C Ratio	0.21	0.53		0.05	0.36	0.36	0.13	0.13		0.11	0.11	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	370	1804		80	1279	559	219	213		200	185	
v/s Ratio Prot	c0.16	c0.44		0.02	0.29		c0.06	0.05		c0.07	0.03	
v/s Ratio Perm						0.08						
v/c Ratio	0.78	0.84		0.54	0.80	0.23	0.49	0.42		0.58	0.27	
Uniform Delay, d1	34.3	18.4		42.8	26.3	20.4	37.1	36.7		38.7	37.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	4.1		3.4	4.4	0.6	0.6	0.5		2.8	0.3	
Delay (s)	43.4	22.6		46.3	30.8	21.0	37.7	37.2		41.5	37.5	
Level of Service	D	C		D	C	C	D	D		D	D	
Approach Delay (s)		25.9			29.7			37.4			39.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1514	21	17	1183	97	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	1.00		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3531		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3531		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.95	0.95	0.62	0.62
Adj. Flow (vph)	1664	23	18	1245	156	68
RTOR Reduction (vph)	1	0	0	0	0	57
Lane Group Flow (vph)	1686	0	18	1245	156	11
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	52.8		1.5	58.3	13.2	13.2
Effective Green, g (s)	52.8		1.5	58.3	13.2	13.2
Actuated g/C Ratio	0.66		0.02	0.72	0.16	0.16
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	2315		32	2563	290	259
v/s Ratio Prot	c0.48		0.01	c0.35	c0.09	
v/s Ratio Perm						0.01
v/c Ratio	0.73		0.56	0.49	0.54	0.04
Uniform Delay, d1	9.1		39.2	4.7	30.9	28.3
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9		24.7	0.5	2.4	0.1
Delay (s)	11.0		63.9	5.2	33.3	28.4
Level of Service	B		E	A	C	C
Approach Delay (s)	11.0			6.1	31.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1506	0	0	1271	11	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.98	0.98	0.66	0.66
Hourly flow rate (vph)	1655	0	0	1297	17	52
Pedestrians					1	
Lane Width (ft)					16.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.80		0.87	0.80
vC, conflicting volume			1656		2304	828
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1319		1479	283
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		84	91
cM capacity (veh/h)			415		101	570

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	827	827	648	648	68
Volume Left	0	0	0	0	17
Volume Right	0	0	0	0	52
cSH	1700	1700	1700	1700	267
Volume to Capacity	0.49	0.49	0.38	0.38	0.26
Queue Length 95th (ft)	0	0	0	0	25
Control Delay (s)	0.0	0.0	0.0	0.0	23.0
Lane LOS					C
Approach Delay (s)	0.0		0.0		23.0
Approach LOS					C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1500	14	29	1222	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	1667	16	30	1260	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.79		0.84	0.79
vC, conflicting volume			1684		2366	843
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1334		1723	269
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	100
cM capacity (veh/h)			405		62	576

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	1111	571	30	630	630
Volume Left	0	0	30	0	0
Volume Right	0	16	0	0	0
cSH	1700	1700	405	1700	1700
Volume to Capacity	0.65	0.34	0.07	0.37	0.37
Queue Length 95th (ft)	0	0	6	0	0
Control Delay (s)	0.0	0.0	14.6	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.3		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1497	9	19	1194	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3535		1770	3539	1695	
Flt Permitted	1.00		0.09	1.00	0.98	
Satd. Flow (perm)	3535		176	3539	1695	
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.63	0.63
Adj. Flow (vph)	1627	10	20	1284	10	14
RTOR Reduction (vph)	1	0	0	0	11	0
Lane Group Flow (vph)	1636	0	20	1284	13	0
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		2				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	75.1		75.1	75.1	26.9	
Effective Green, g (s)	75.1		75.1	75.1	26.9	
Actuated g/C Ratio	0.68		0.68	0.68	0.24	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2413		120	2416	414	
v/s Ratio Prot	c0.46			0.36	c0.01	
v/s Ratio Perm			0.11			
v/c Ratio	0.68		0.17	0.53	0.03	
Uniform Delay, d1	10.3		6.2	8.7	31.6	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.8		0.7	0.2	0.1	
Delay (s)	11.1		6.9	8.9	31.8	
Level of Service	B		A	A	C	
Approach Delay (s)	11.1			8.9	31.8	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	51	1459	1163	54	47	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3513		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3513		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.96	0.96	0.74	0.74
Adj. Flow (vph)	54	1536	1211	56	64	41
RTOR Reduction (vph)	0	0	2	0	0	37
Lane Group Flow (vph)	54	1536	1265	0	64	4
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.4	53.5	44.1		7.5	7.5
Effective Green, g (s)	5.4	53.5	44.1		7.5	7.5
Actuated g/C Ratio	0.08	0.76	0.63		0.11	0.11
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	136	2704	2213		189	169
v/s Ratio Prot	0.03	c0.43	0.36		c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.40	0.57	0.57		0.34	0.03
Uniform Delay, d1	30.8	3.4	7.5		29.0	28.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.6	0.6	0.7		1.5	0.1
Delay (s)	33.3	4.0	8.2		30.4	28.1
Level of Service	C	A	A		C	C
Approach Delay (s)		5.0	8.2		29.5	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1405	177	116	1068	89	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3471		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3471		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.97	0.97	0.84	0.84
Adj. Flow (vph)	1544	195	120	1101	106	145
RTOR Reduction (vph)	7	0	0	0	0	124
Lane Group Flow (vph)	1732	0	120	1101	106	21
Confl. Peds. (#/hr)		1	1		6	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	51.4		12.0	67.4	12.9	12.9
Effective Green, g (s)	51.4		12.0	67.4	12.9	12.9
Actuated g/C Ratio	0.58		0.14	0.76	0.15	0.15
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	2020		240	2701	258	231
v/s Ratio Prot	c0.50		c0.07	0.31	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.86		0.50	0.41	0.41	0.09
Uniform Delay, d1	15.4		35.4	3.6	34.2	32.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7		2.2	0.4	1.5	0.2
Delay (s)	20.1		37.6	4.0	35.7	32.9
Level of Service	C		D	A	D	C
Approach Delay (s)	20.1			7.3	34.1	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	336	756	273	749	447	123	1062	219	264	1018	160
v/c Ratio	0.44	0.96	0.75	0.98	0.84	0.66	1.00	0.40	1.19	0.90	0.30
Control Delay	42.0	70.0	57.0	74.0	38.0	68.0	70.1	18.0	168.2	51.5	14.2
Queue Delay	0.0	7.4	58.0	40.3	37.3	0.0	0.0	25.4	19.3	0.0	0.0
Total Delay	42.0	77.4	115.0	114.3	75.3	68.0	70.1	43.4	187.5	51.5	14.2
Queue Length 50th (ft)	115	303	241	337	233	92	~433	61	~247	400	32
Queue Length 95th (ft)	157	#414	#361	#470	#348	156	#584	132	#416	#546	90
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	785	362	761	532	221	1061	546	221	1129	527
Starvation Cap Reductn	0	0	116	264	111	0	0	0	0	0	0
Spillback Cap Reductn	0	30	0	0	0	0	0	320	137	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	1.00	1.11	1.51	1.06	0.56	1.00	0.97	3.14	0.90	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	912	296	36	893	359	369	172	34	154
v/c Ratio	0.44	0.66	0.48	0.31	0.69	0.74	0.74	0.34	0.16	0.53
Control Delay	61.2	28.0	20.6	56.6	29.8	43.6	43.5	18.1	42.5	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	28.0	20.6	56.6	29.8	43.6	43.5	18.1	42.5	21.1
Queue Length 50th (ft)	32	251	103	22	245	203	209	38	20	23
Queue Length 95th (ft)	#87	360	197	63	381	#446	#457	117	44	60
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	119	1712	747	119	1704	567	580	575	597	619
Starvation Cap Reductn	0	0	0	0	14	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.53	0.40	0.30	0.53	0.63	0.64	0.30	0.06	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	183	788	478	195	894	557	354	137	279
v/c Ratio	0.87	0.71	0.76	0.93	0.82	0.75	0.89	0.40	0.78
Control Delay	83.9	37.1	26.0	94.2	41.3	46.0	63.4	40.9	55.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.9	37.1	26.0	94.2	41.3	46.0	63.4	40.9	55.3
Queue Length 50th (ft)	127	256	156	136	300	186	226	83	178
Queue Length 95th (ft)	#263	335	#310	#283	#398	252	#400	141	273
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	210	1110	627	210	1092	783	417	404	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.71	0.76	0.93	0.82	0.71	0.85	0.34	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	288	1517	43	1025	203	107	105	117	179
v/c Ratio	0.76	0.82	0.35	0.83	0.33	0.48	0.45	0.57	0.57
Control Delay	50.3	25.9	50.9	35.9	12.9	43.4	35.5	50.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	25.9	50.9	35.9	12.9	43.4	35.5	50.7	18.3
Queue Length 50th (ft)	148	363	23	264	32	58	47	62	17
Queue Length 95th (ft)	#342	#762	66	#541	112	90	76	124	71
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	377	1842	238	1231	613	509	508	536	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.82	0.18	0.83	0.33	0.21	0.21	0.22	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1687	18	1245	156	68
v/c Ratio	0.70	0.11	0.49	0.52	0.21
Control Delay	11.5	34.2	6.1	35.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	34.2	6.1	35.0	9.3
Queue Length 50th (ft)	181	7	107	62	0
Queue Length 95th (ft)	516	30	192	88	13
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2410	322	3041	806	758
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	0.06	0.41	0.19	0.09

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1637	20	1284	24
v/c Ratio	0.68	0.17	0.53	0.06
Control Delay	11.5	7.7	9.3	23.9
Queue Delay	1.6	0.0	0.0	0.0
Total Delay	13.2	7.7	9.3	23.9
Queue Length 50th (ft)	302	4	199	6
Queue Length 95th (ft)	273	12	181	18
Internal Link Dist (ft)	361		89	321
Turn Bay Length (ft)		100		
Base Capacity (vph)	2699	133	2702	424
Starvation Cap Reductn	826	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.87	0.15	0.48	0.06

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1536	1267	64	41
v/c Ratio	0.23	0.55	0.53	0.26	0.16
Control Delay	33.0	4.8	10.1	32.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	4.8	10.1	32.9	12.7
Queue Length 50th (ft)	20	121	180	23	0
Queue Length 95th (ft)	63	197	290	58	20
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	439	3377	2762	796	735
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.45	0.46	0.08	0.06

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1739	120	1101	106	145
v/c Ratio	0.86	0.50	0.41	0.41	0.41
Control Delay	22.7	44.2	4.7	39.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	44.2	4.7	39.2	9.5
Queue Length 50th (ft)	373	61	78	54	0
Queue Length 95th (ft)	#772	130	191	97	40
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2025	322	2866	625	653
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.37	0.38	0.17	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	931	49	212	557	176	79	677	179	336	966	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.93	1.00	1.00	0.98	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3503		1610	3384	1466	1770	3539	1548	1770	3539	1497
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3503		1610	3384	1466	1770	3539	1548	1770	3539	1497
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	207	990	52	230	605	191	85	728	192	378	1085	111
RTOR Reduction (vph)	0	3	0	0	0	151	0	0	104	0	0	48
Lane Group Flow (vph)	207	1039	0	207	628	40	85	728	88	378	1085	63
Confl. Peds. (#/hr)	45		33	33		45	27		6	6		27
Confl. Bikes (#/hr)			1			1			4			2
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	31.1	31.1		25.2	25.2	25.2	7.9	29.7	29.7	19.0	40.8	40.8
Effective Green, g (s)	31.1	31.1		25.2	25.2	25.2	7.9	29.7	29.7	19.0	40.8	40.8
Actuated g/C Ratio	0.26	0.26		0.21	0.21	0.21	0.07	0.25	0.25	0.16	0.34	0.34
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	889	907		338	710	307	116	875	383	280	1203	508
v/s Ratio Prot	0.06	c0.30		0.13	c0.19		0.05	0.21		c0.21	c0.31	
v/s Ratio Perm						0.03			0.06			0.04
v/c Ratio	0.23	1.15		0.61	0.88	0.13	0.73	0.83	0.23	1.35	0.90	0.12
Uniform Delay, d1	35.0	44.5		43.0	46.0	38.5	55.0	42.8	36.0	50.5	37.7	27.3
Progression Factor	1.00	1.00		0.49	0.53	0.32	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	78.5		3.1	12.0	0.2	21.1	9.1	1.4	179.3	11.0	0.5
Delay (s)	35.2	123.0		24.3	36.6	12.5	76.1	51.9	37.4	229.8	48.7	27.8
Level of Service	D	F		C	D	B	E	D	D	F	D	C
Approach Delay (s)		108.4			29.6			51.2			90.7	
Approach LOS		F			C			D			F	

Intersection Summary			
HCM 2000 Control Delay	74.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	104.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	1112	444	14	678	7	333	60	66	16	48	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1518	1770	3530		1681	1710	1527	1770	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1518	1770	3530		1681	1710	1527	1770	1620	
Peak-hour factor, PHF	0.96	0.96	0.96	0.86	0.86	0.86	0.78	0.78	0.78	0.79	0.79	0.79
Adj. Flow (vph)	40	1158	462	16	788	8	427	77	85	20	61	222
RTOR Reduction (vph)	0	0	61	0	1	0	0	0	67	0	109	0
Lane Group Flow (vph)	40	1158	401	16	795	0	252	252	18	20	174	0
Confl. Peds. (#/hr)	30		7	7		30	5		19	19		5
Confl. Bikes (#/hr)			4			5						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.4	42.7	42.7	1.6	39.9		20.4	20.4	20.4	16.0	16.0	
Effective Green, g (s)	4.4	42.7	42.7	1.6	39.9		20.4	20.4	20.4	16.0	16.0	
Actuated g/C Ratio	0.05	0.44	0.44	0.02	0.41		0.21	0.21	0.21	0.16	0.16	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	79	1546	663	28	1441		350	357	318	289	265	
v/s Ratio Prot	c0.02	c0.33		0.01	0.23		c0.15	0.15		0.01	c0.11	
v/s Ratio Perm			0.26						0.01			
v/c Ratio	0.51	0.75	0.61	0.57	0.55		0.72	0.71	0.06	0.07	0.66	
Uniform Delay, d1	45.6	23.0	21.0	47.7	22.1		36.0	35.9	30.9	34.6	38.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.0	2.4	2.3	25.2	0.8		7.4	6.7	0.1	0.1	6.4	
Delay (s)	50.6	25.5	23.3	72.9	22.9		43.4	42.5	31.0	34.7	44.7	
Level of Service	D	C	C	E	C		D	D	C	C	D	
Approach Delay (s)		25.5			23.8			41.3			44.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	9	1610	1246	26	84	52
Peak Hour Factor	0.98	0.98	0.82	0.82	0.68	0.68
Hourly flow rate (vph)	9	1643	1520	32	124	76

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	557	1095	1013	538	200
Volume Left (vph)	9	0	0	0	124
Volume Right (vph)	0	0	0	32	76
Hadj (s)	0.04	0.03	0.03	-0.01	-0.07
Departure Headway (s)	6.8	6.8	6.8	6.8	6.9
Degree Utilization, x	1.06	2.08	1.92	1.02	0.38
Capacity (veh/h)	516	535	534	538	516
Control Delay (s)	80.7	508.0	438.6	68.2	14.2
Approach Delay (s)	364.0		310.1		14.2
Approach LOS	F		F		B

Intersection Summary			
Delay	318.9		
Level of Service	F		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	39	1536	1171	104	71	82
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.83	0.83	0.58	0.58
Hourly flow rate (vph)	41	1617	1411	125	122	141
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1545				3181	1482
vC1, stage 1 conf vol					1482	
vC2, stage 2 conf vol					1699	
vCu, unblocked vol	1545				3181	1482
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	90				0	7
cM capacity (veh/h)	426				114	152

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	41	1617	1536	264
Volume Left	41	0	0	122
Volume Right	0	0	125	141
cSH	426	1700	1700	164
Volume to Capacity	0.10	0.95	0.90	1.61
Queue Length 95th (ft)	8	0	0	449
Control Delay (s)	14.3	0.0	0.0	349.8
Lane LOS	B			F
Approach Delay (s)	0.4		0.0	349.8
Approach LOS				F

Intersection Summary			
Average Delay	26.9		
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1273	21	216	976	6	285
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.78	0.78	0.72	0.72
Hourly flow rate (vph)	1384	23	277	1251	8	396
Pedestrians	3			1	6	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			0	1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1413		3209	1402
vC1, stage 1 conf vol					1401	
vC2, stage 2 conf vol					1808	
vCu, unblocked vol			1413		3209	1402
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			42		85	0
cM capacity (veh/h)			480		56	170

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1407	277	1251	8	396
Volume Left	0	277	0	8	0
Volume Right	23	0	0	0	396
cSH	1700	480	1700	56	170
Volume to Capacity	0.83	0.58	0.74	0.15	2.32
Queue Length 95th (ft)	0	90	0	12	818
Control Delay (s)	0.0	22.2	0.0	79.5	656.2
Lane LOS		C		F	F
Approach Delay (s)	0.0	4.0		644.3	
Approach LOS				F	

Intersection Summary			
Average Delay	79.8		
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	1336	805	60	44	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.82	0.82	0.73	0.73
Hourly flow rate (vph)	68	1484	982	73	60	108
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1062				2645	1025
vC1, stage 1 conf vol					1025	
vC2, stage 2 conf vol					1620	
vCu, unblocked vol	1062				2645	1025
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	90				57	62
cM capacity (veh/h)	652				141	284

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	68	1484	1055	168
Volume Left	68	0	0	60
Volume Right	0	0	73	108
cSH	652	1700	1700	208
Volume to Capacity	0.10	0.87	0.62	0.81
Queue Length 95th (ft)	9	0	0	146
Control Delay (s)	11.2	0.0	0.0	69.8
Lane LOS	B			F
Approach Delay (s)	0.5		0.0	69.8
Approach LOS				F

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	885	253	165	648	75	502	198	116	165	179	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1529	1770	3469		3433	1751		1770	1769	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1529	1770	3469		3433	1751		1770	1769	
Peak-hour factor, PHF	0.89	0.89	0.89	0.77	0.77	0.77	0.95	0.95	0.95	0.75	0.75	0.75
Adj. Flow (vph)	98	994	284	214	842	97	528	208	122	220	239	81
RTOR Reduction (vph)	0	0	77	0	7	0	0	20	0	0	11	0
Lane Group Flow (vph)	98	994	207	214	932	0	528	310	0	220	309	0
Confl. Peds. (#/hr)	9		5	5		9	29		1	1		29
Confl. Bikes (#/hr)			1									
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	9.3	33.9	33.9	12.5	37.1		22.1	22.1		22.0	22.0	
Effective Green, g (s)	9.3	33.9	33.9	12.5	37.1		22.1	22.1		22.0	22.0	
Actuated g/C Ratio	0.09	0.32	0.32	0.12	0.35		0.21	0.21		0.21	0.21	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	153	1121	484	206	1202		709	361		363	363	
v/s Ratio Prot	0.06	c0.28		c0.12	c0.27		0.15	c0.18		0.12	c0.17	
v/s Ratio Perm			0.14									
v/c Ratio	0.64	0.89	0.43	1.04	0.78		0.74	0.86		0.61	0.85	
Uniform Delay, d1	47.2	34.7	28.9	47.2	31.2		39.8	40.9		38.6	40.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.8	9.7	1.7	73.2	4.0		4.5	18.6		3.3	17.7	
Delay (s)	57.0	44.4	30.6	120.5	35.3		44.3	59.5		41.9	58.6	
Level of Service	E	D	C	F	D		D	E		D	E	
Approach Delay (s)		42.5			51.1			50.2			51.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	107.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	220	1051	243	9	1093	96	421	59	22	120	71	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.99		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (prot)	1770	3419		1770	3539	1548	1681	1686		1770	1624	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.97		0.95	1.00	
Satd. Flow (perm)	1770	3419		1770	3539	1548	1681	1686		1770	1624	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	262	1251	289	10	1188	104	526	74	28	133	79	462
RTOR Reduction (vph)	0	14	0	0	0	60	0	3	0	0	191	0
Lane Group Flow (vph)	262	1526	0	10	1188	44	316	309	0	133	350	0
Confl. Peds. (#/hr)			4	4					4	4		
Confl. Bikes (#/hr)						2						
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.2	51.4		1.2	35.4	35.4	23.1	23.1		16.1	16.1	
Effective Green, g (s)	17.2	51.4		1.2	35.4	35.4	23.1	23.1		16.1	16.1	
Actuated g/C Ratio	0.16	0.47		0.01	0.33	0.33	0.21	0.21		0.15	0.15	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	279	1615		19	1151	503	356	357		261	240	
v/s Ratio Prot	c0.15	0.45		0.01	c0.34		c0.19	0.18		0.08	c0.22	
v/s Ratio Perm						0.03						
v/c Ratio	0.94	0.95		0.53	1.03	0.09	0.89	0.87		0.51	1.46	
Uniform Delay, d1	45.3	27.4		53.5	36.7	25.5	41.6	41.3		42.7	46.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	37.0	12.3		11.6	35.1	0.2	21.9	18.5		0.6	228.1	
Delay (s)	82.3	39.7		65.1	71.8	25.7	63.5	59.9		43.3	274.5	
Level of Service	F	D		E	E	C	E	E		D	F	
Approach Delay (s)		45.9			68.1			61.7			228.8	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	82.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	108.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1385	287	105	1843	173	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.97		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3412		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3412		1770	3539	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.87	0.87	0.69	0.69
Adj. Flow (vph)	1505	312	121	2118	251	96
RTOR Reduction (vph)	13	0	0	0	0	77
Lane Group Flow (vph)	1804	0	121	2118	251	19
Confl. Peds. (#/hr)		15	15		20	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	62.4		12.3	78.7	21.5	21.5
Effective Green, g (s)	62.4		12.3	78.7	21.5	21.5
Actuated g/C Ratio	0.57		0.11	0.72	0.20	0.20
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	1949		199	2550	348	311
v/s Ratio Prot	c0.53		0.07	c0.60	c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.93		0.61	0.83	0.72	0.06
Uniform Delay, d1	21.3		46.2	10.6	41.0	35.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	8.9		6.0	3.0	7.7	0.1
Delay (s)	30.2		52.1	13.6	48.7	35.8
Level of Service	C		D	B	D	D
Approach Delay (s)	30.2			15.7	45.1	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	109.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1333	0	0	1996	1	334
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.91	0.91	0.58	0.58
Hourly flow rate (vph)	1709	0	0	2193	2	576
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1055			785		
pX, platoon unblocked			0.78		0.58	0.78
vC, conflicting volume			1709		2806	854
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1338		929	237
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	3
cM capacity (veh/h)			397		154	593

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	854	854	1097	1097	578
Volume Left	0	0	0	0	2
Volume Right	0	0	0	0	576
cSH	1700	1700	1700	1700	588
Volume to Capacity	0.50	0.50	0.65	0.65	0.98
Queue Length 95th (ft)	0	0	0	0	351
Control Delay (s)	0.0	0.0	0.0	0.0	59.1
Lane LOS					F
Approach Delay (s)	0.0		0.0		59.1
Approach LOS					F

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1325	157	236	1779	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.94	0.94	1.00	1.00
Hourly flow rate (vph)	1577	187	251	1893	0	0
Pedestrians					3	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	611			1229		
pX, platoon unblocked			0.74		0.71	0.74
vC, conflicting volume			1767		3122	885
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1335		1524	143
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			34		100	100
cM capacity (veh/h)			380		26	650

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	1052	713	251	946	946
Volume Left	0	0	251	0	0
Volume Right	0	187	0	0	0
cSH	1700	1700	380	1700	1700
Volume to Capacity	0.62	0.42	0.66	0.56	0.56
Queue Length 95th (ft)	0	0	114	0	0
Control Delay (s)	0.0	0.0	31.2	0.0	0.0
Lane LOS			D		
Approach Delay (s)	0.0		3.7		
Approach LOS					

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1391	27	110	1650	19	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	0.99		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.90	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3498		1770	3539	1656	
Flt Permitted	1.00		0.10	1.00	0.99	
Satd. Flow (perm)	3498		178	3539	1656	
Peak-hour factor, PHF	0.82	0.82	0.91	0.91	0.75	0.75
Adj. Flow (vph)	1696	33	121	1813	25	87
RTOR Reduction (vph)	2	0	0	0	30	0
Lane Group Flow (vph)	1727	0	121	1813	82	0
Confl. Peds. (#/hr)		130	130			
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	81.7		81.7	81.7	20.3	
Effective Green, g (s)	81.7		81.7	81.7	20.3	
Actuated g/C Ratio	0.74		0.74	0.74	0.18	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2598		132	2628	305	
v/s Ratio Prot	0.49			0.51	c0.05	
v/s Ratio Perm			c0.68			
v/c Ratio	0.66		0.92	0.69	0.27	
Uniform Delay, d1	7.2		11.4	7.5	38.5	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.7		53.1	0.8	2.1	
Delay (s)	7.8		64.5	8.2	40.6	
Level of Service	A		E	A	D	
Approach Delay (s)	7.8			11.8	40.6	
Approach LOS	A			B	D	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	38	1300	1638	25	113	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3530		1770	1508
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3530		1770	1508
Peak-hour factor, PHF	0.81	0.81	0.89	0.89	0.64	0.64
Adj. Flow (vph)	47	1605	1840	28	177	181
RTOR Reduction (vph)	0	0	1	0	0	146
Lane Group Flow (vph)	47	1605	1867	0	177	35
Confl. Peds. (#/hr)	1			1		30
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.5	63.0	53.5		17.0	17.0
Effective Green, g (s)	5.5	63.0	53.5		17.0	17.0
Actuated g/C Ratio	0.06	0.71	0.60		0.19	0.19
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	109	2505	2121		338	288
v/s Ratio Prot	0.03	c0.45	c0.53		c0.10	
v/s Ratio Perm						0.02
v/c Ratio	0.43	0.64	0.88		0.52	0.12
Uniform Delay, d1	40.2	6.9	15.0		32.4	29.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.7	0.9	5.2		1.9	0.3
Delay (s)	43.9	7.9	20.3		34.3	30.1
Level of Service	D	A	C		C	C
Approach Delay (s)		8.9	20.3		32.1	
Approach LOS		A	C		C	

Intersection Summary			
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1135	106	213	1588	251	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3452		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3452		1770	3539	1770	1583
Peak-hour factor, PHF	0.77	0.77	0.92	0.92	0.78	0.78
Adj. Flow (vph)	1474	138	232	1726	322	292
RTOR Reduction (vph)	5	0	0	0	0	187
Lane Group Flow (vph)	1607	0	232	1726	322	105
Confl. Peds. (#/hr)		53	53		59	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	57.3		16.1	77.4	25.7	25.7
Effective Green, g (s)	57.3		16.1	77.4	25.7	25.7
Actuated g/C Ratio	0.52		0.14	0.70	0.23	0.23
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1780		256	2465	409	366
v/s Ratio Prot	c0.47		c0.13	0.49	c0.18	
v/s Ratio Perm						0.07
v/c Ratio	0.90		0.91	0.70	0.79	0.29
Uniform Delay, d1	24.4		46.8	10.0	40.1	35.2
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9		32.9	1.7	10.2	0.6
Delay (s)	32.3		79.6	11.6	50.3	35.8
Level of Service	C		E	B	D	D
Approach Delay (s)	32.3			19.7	43.4	
Approach LOS	C			B	D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

1: El Camino Real & Ralston Ave

Timing Plan: Default

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	207	1042	207	628	191	85	728	192	378	1085	111
v/c Ratio	0.23	1.15	0.61	0.89	0.42	0.62	0.83	0.39	1.35	0.89	0.20
Control Delay	36.8	118.7	29.1	39.9	4.4	73.9	51.8	14.1	218.5	47.6	12.3
Queue Delay	0.0	0.1	1.9	6.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	118.8	31.0	46.6	5.1	73.9	51.8	14.1	218.5	47.6	12.3
Queue Length 50th (ft)	67	~524	150	277	12	64	278	32	~383	423	20
Queue Length 95th (ft)	101	#661	176	#359	10	#125	352	97	#567	#543	61
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	889	910	348	732	467	147	914	502	280	1223	565
Starvation Cap Reductn	0	0	52	73	95	0	0	0	0	0	0
Spillback Cap Reductn	0	15	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	1.16	0.70	0.95	0.51	0.58	0.80	0.38	1.35	0.89	0.20

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	40	1158	462	16	796	252	252	85	20	283
v/c Ratio	0.28	0.73	0.63	0.16	0.55	0.71	0.69	0.22	0.07	0.75
Control Delay	54.3	27.3	22.1	57.1	26.0	49.8	48.9	8.8	39.1	35.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	27.3	22.1	57.1	26.0	49.8	48.9	8.8	39.1	35.3
Queue Length 50th (ft)	24	280	151	10	211	150	150	0	10	89
Queue Length 95th (ft)	67	499	350	35	305	242	242	25	31	165
Internal Link Dist (ft)		847			519		540			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	176	1922	870	98	1760	484	492	502	451	509
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.60	0.53	0.16	0.45	0.52	0.51	0.17	0.04	0.56

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	994	284	214	939	528	330	220	320
v/c Ratio	0.54	0.90	0.51	1.03	0.77	0.74	0.86	0.60	0.85
Control Delay	57.1	48.2	22.3	117.5	38.0	46.7	60.2	46.0	60.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	48.2	22.3	117.5	38.0	46.7	60.2	46.0	60.3
Queue Length 50th (ft)	66	358	99	~167	328	178	208	140	207
Queue Length 95th (ft)	120	#479	181	#251	332	238	#355	177	246
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	208	1102	552	208	1219	777	415	401	411
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.90	0.51	1.03	0.77	0.68	0.80	0.55	0.78

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	262	1540	10	1188	104	316	312	133	541
v/c Ratio	0.89	0.92	0.13	1.13	0.20	0.86	0.84	0.49	1.24
Control Delay	74.4	36.3	53.4	106.1	9.6	62.1	59.0	49.2	147.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.4	36.3	53.4	106.1	9.6	62.1	59.0	49.2	147.8
Queue Length 50th (ft)	179	491	7	~524	8	218	212	87	~334
Queue Length 95th (ft)	#287	#704	25	#668	49	282	274	152	#553
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	322	1670	271	1052	522	435	439	271	438
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.92	0.04	1.13	0.20	0.73	0.71	0.49	1.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1817	121	2118	251	96
v/c Ratio	0.93	0.60	0.83	0.72	0.25
Control Delay	32.1	60.8	15.6	53.5	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.1	60.8	15.6	53.5	8.8
Queue Length 50th (ft)	591	82	474	169	0
Queue Length 95th (ft)	#911	148	706	185	19
Internal Link Dist (ft)	705		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	1958	228	2603	504	519
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.93	0.53	0.81	0.50	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1729	121	1813	112
v/c Ratio	0.67	0.92	0.69	0.33
Control Delay	8.4	77.1	8.9	31.4
Queue Delay	2.9	0.0	0.0	0.0
Total Delay	11.3	77.1	8.9	31.4
Queue Length 50th (ft)	224	48	244	48
Queue Length 95th (ft)	227	#98	300	81
Internal Link Dist (ft)	361		90	321
Turn Bay Length (ft)		100		
Base Capacity (vph)	2736	138	2766	336
Starvation Cap Reductn	867	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.93	0.88	0.66	0.33

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	47	1605	1868	177	181
v/c Ratio	0.26	0.65	0.86	0.52	0.42
Control Delay	43.3	9.3	23.0	38.0	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	9.3	23.0	38.0	8.2
Queue Length 50th (ft)	27	268	548	93	0
Queue Length 95th (ft)	56	273	#777	111	10
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	332	2973	2163	602	628
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.54	0.86	0.29	0.29

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1612	232	1726	322	292
v/c Ratio	0.90	0.91	0.70	0.79	0.53
Control Delay	33.6	85.7	12.8	54.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	85.7	12.8	54.8	11.4
Queue Length 50th (ft)	532	169	350	222	29
Queue Length 95th (ft)	542	#345	518	271	63
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	1845	256	2529	528	643
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.87	0.91	0.68	0.61	0.45

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	9	1610	1246	26	84	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frpb, ped/bikes		1.00	1.00		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	1.00		0.95	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		3538	3524		1714	
Flt Permitted		0.94	1.00		0.97	
Satd. Flow (perm)		3344	3524		1714	
Peak-hour factor, PHF	0.98	0.98	0.82	0.82	0.68	0.68
Adj. Flow (vph)	9	1643	1520	32	124	76
RTOR Reduction (vph)	0	0	2	0	12	0
Lane Group Flow (vph)	0	1652	1550	0	188	0
Confl. Peds. (#/hr)	23			23	2	
Confl. Bikes (#/hr)				5		
Turn Type	pm+pt	NA	NA		NA	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		35.2	35.2		15.9	
Effective Green, g (s)		35.2	35.2		15.9	
Actuated g/C Ratio		0.60	0.60		0.27	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1991	2098		461	
v/s Ratio Prot			0.44		c0.11	
v/s Ratio Perm		c0.49				
v/c Ratio		0.83	0.74		0.41	
Uniform Delay, d1		9.6	8.6		17.7	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		3.0	1.4		0.6	
Delay (s)		12.6	10.0		18.3	
Level of Service		B	B		B	
Approach Delay (s)		12.6	10.0		18.3	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	59.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1817	121	2118	347
v/c Ratio	0.89	0.59	0.80	0.58
Control Delay	26.7	57.4	12.4	38.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.7	57.4	12.4	38.8
Queue Length 50th (ft)	501	76	358	97
Queue Length 95th (ft)	#833	141	584	102
Internal Link Dist (ft)	705		1437	355
Turn Bay Length (ft)		150		50
Base Capacity (vph)	2034	237	2709	1025
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.89	0.51	0.78	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	228	699	72	214	721	266	140	816	215	297	839	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.91	1.00	1.00	0.97	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3463		1610	3385	1444	1770	3539	1537	1770	3539	1447
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3463		1610	3385	1444	1770	3539	1537	1770	3539	1447
Peak-hour factor, PHF	0.98	0.98	0.98	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91
Adj. Flow (vph)	233	713	73	221	743	274	149	868	229	326	922	207
RTOR Reduction (vph)	0	6	0	0	0	210	0	0	103	0	0	102
Lane Group Flow (vph)	233	780	0	199	765	64	149	868	126	326	922	105
Confl. Peds. (#/hr)	55		51	51		55	48		14	14		48
Confl. Bikes (#/hr)			3			2			1			1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	27.0	27.0		28.0	28.0	28.0	13.6	35.0	35.0	15.0	36.4	36.4
Effective Green, g (s)	27.0	27.0		28.0	28.0	28.0	13.6	35.0	35.0	15.0	36.4	36.4
Actuated g/C Ratio	0.22	0.22		0.23	0.23	0.23	0.11	0.29	0.29	0.12	0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	772	779		375	789	336	200	1032	448	221	1073	438
v/s Ratio Prot	0.07	c0.23		0.12	c0.23		0.08	0.25		c0.18	c0.26	
v/s Ratio Perm						0.04			0.08			0.07
v/c Ratio	0.30	1.00		0.53	0.97	0.19	0.74	0.84	0.28	1.48	0.86	0.24
Uniform Delay, d1	38.7	46.5		40.3	45.6	36.9	51.5	39.9	32.8	52.5	39.4	31.4
Progression Factor	1.00	1.00		1.04	1.05	3.55	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	32.5		4.6	23.4	1.1	14.0	8.3	1.6	236.6	9.0	1.3
Delay (s)	38.9	79.0		46.5	71.2	132.1	65.5	48.2	34.3	289.1	48.4	32.7
Level of Service	D	E		D	E	F	E	D	C	F	D	C
Approach Delay (s)		69.8			80.7			47.7			100.1	
Approach LOS		E			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	75.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	857	244	36	884	33	304	65	115	32	52	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1498	1770	3505		1681	1714	1523	1770	1637	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1498	1770	3505		1681	1714	1523	1770	1637	
Peak-hour factor, PHF	0.96	0.96	0.96	0.89	0.89	0.89	0.91	0.91	0.91	0.73	0.73	0.73
Adj. Flow (vph)	55	893	254	40	993	37	334	71	126	44	71	158
RTOR Reduction (vph)	0	0	46	0	2	0	0	0	70	0	68	0
Lane Group Flow (vph)	55	893	208	40	1028	0	200	205	56	44	161	0
Confl. Peds. (#/hr)	41		13	13		41	14		22	22		14
Confl. Bikes (#/hr)			3			2						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	38.4	38.4	3.1	37.0		18.5	18.5	18.5	16.4	16.4	
Effective Green, g (s)	4.5	38.4	38.4	3.1	37.0		18.5	18.5	18.5	16.4	16.4	
Actuated g/C Ratio	0.05	0.41	0.41	0.03	0.40		0.20	0.20	0.20	0.18	0.18	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	85	1455	615	58	1388		332	339	301	310	287	
v/s Ratio Prot	c0.03	0.25		0.02	c0.29		0.12	c0.12		0.02	c0.10	
v/s Ratio Perm			0.14						0.04			
v/c Ratio	0.65	0.61	0.34	0.69	0.74		0.60	0.60	0.19	0.14	0.56	
Uniform Delay, d1	43.7	21.7	18.8	44.7	24.1		34.1	34.1	31.2	32.6	35.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.7	1.1	0.7	29.0	2.6		3.5	3.5	0.4	0.3	2.9	
Delay (s)	59.4	22.8	19.5	73.7	26.7		37.6	37.6	31.6	32.8	38.1	
Level of Service	E	C	B	E	C		D	D	C	C	D	
Approach Delay (s)		23.8			28.5			36.2			37.3	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	14	1235	1325	48	36	14
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	15	1328	1395	51	46	18

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	458	885	930	515	64
Volume Left (vph)	15	0	0	0	46
Volume Right (vph)	0	0	0	51	18
Hadj (s)	0.05	0.03	0.03	-0.03	0.01
Departure Headway (s)	6.3	6.3	6.2	6.1	6.9
Degree Utilization, x	0.80	1.54	1.59	0.87	0.12
Capacity (veh/h)	458	566	587	583	509
Control Delay (s)	28.3	267.0	291.0	36.2	10.9
Approach Delay (s)	185.6		200.1		10.9
Approach LOS	F		F		B

Intersection Summary			
Delay	189.0		
Level of Service	F		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	51	1101	1196	103	123	98
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	55	1197	1314	113	189	151
Pedestrians					18	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1445				2696	1389
vC1, stage 1 conf vol					1389	
vC2, stage 2 conf vol					1308	
vCu, unblocked vol	1445				2696	1389
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				0	12
cM capacity (veh/h)	462				153	172

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	55	1197	1427	340
Volume Left	55	0	0	189
Volume Right	0	0	113	151
cSH	462	1700	1700	180
Volume to Capacity	0.12	0.70	0.84	1.89
Queue Length 95th (ft)	10	0	0	627
Control Delay (s)	13.9	0.0	0.0	463.6
Lane LOS	B			F
Approach Delay (s)	0.6		0.0	463.6
Approach LOS				F

Intersection Summary			
Average Delay	52.4		
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	973	21	173	1106	11	175
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.86	0.86
Hourly flow rate (vph)	1058	23	188	1202	13	203
Pedestrians	3				15	
Lane Width (ft)	12.0				12.0	
Walking Speed (ft/s)	4.0				4.0	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1095		2665	1084
vC1, stage 1 conf vol					1084	
vC2, stage 2 conf vol					1581	
vCu, unblocked vol			1095		2665	1084
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			70		89	22
cM capacity (veh/h)			629		117	260

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1080	188	1202	13	203
Volume Left	0	188	0	13	0
Volume Right	23	0	0	0	203
cSH	1700	629	1700	117	260
Volume to Capacity	0.64	0.30	0.71	0.11	0.78
Queue Length 95th (ft)	0	31	0	9	147
Control Delay (s)	0.0	13.1	0.0	39.6	55.0
Lane LOS		B		E	F
Approach Delay (s)	0.0	1.8		54.1	
Approach LOS				F	

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	61	915	1002	70	41	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	71	1064	1113	78	54	74
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1198				2365	1159
vC1, stage 1 conf vol					1159	
vC2, stage 2 conf vol					1206	
vCu, unblocked vol	1198				2365	1159
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				71	69
cM capacity (veh/h)	579				186	237

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	71	1064	1191	128
Volume Left	71	0	0	54
Volume Right	0	0	78	74
cSH	579	1700	1700	213
Volume to Capacity	0.12	0.63	0.70	0.60
Queue Length 95th (ft)	10	0	0	85
Control Delay (s)	12.1	0.0	0.0	44.5
Lane LOS	B			E
Approach Delay (s)	0.8		0.0	44.5
Approach LOS				E

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	733	382	224	698	102	511	175	132	104	192	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1495	1770	3457		3433	1721		1770	1790	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1495	1770	3457		3433	1721		1770	1790	
Peak-hour factor, PHF	0.81	0.81	0.81	0.86	0.86	0.86	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	125	905	472	260	812	119	587	201	152	118	218	58
RTOR Reduction (vph)	0	0	140	0	10	0	0	25	0	0	9	0
Lane Group Flow (vph)	125	905	332	260	921	0	587	328	0	118	267	0
Confl. Peds. (#/hr)	4		14	14		4	20		13	13		20
Confl. Bikes (#/hr)						1						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	11.5	33.1	33.1	12.5	34.1		22.8	22.8		20.3	20.3	
Effective Green, g (s)	11.5	33.1	33.1	12.5	34.1		22.8	22.8		20.3	20.3	
Actuated g/C Ratio	0.11	0.31	0.31	0.12	0.32		0.22	0.22		0.19	0.19	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	193	1113	470	210	1120		744	372		341	345	
v/s Ratio Prot	0.07	0.26		c0.15	c0.27		0.17	c0.19		0.07	c0.15	
v/s Ratio Perm			0.22									
v/c Ratio	0.65	0.81	0.71	1.24	0.82		0.79	0.88		0.35	0.77	
Uniform Delay, d1	44.9	33.2	31.8	46.4	32.8		38.9	39.9		36.7	40.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.1	5.5	7.0	141.0	5.8		5.9	21.4		0.8	11.0	
Delay (s)	53.0	38.7	38.8	187.4	38.6		44.8	61.3		37.5	51.2	
Level of Service	D	D	D	F	D		D	E		D	D	
Approach Delay (s)		39.9			71.1			51.0			47.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	105.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	205	942	131	28	967	148	95	24	9	112	26	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.96	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.98		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3422		1770	3539	1522	1681	1682		1770	1601	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3422		1770	3539	1522	1681	1682		1770	1601	
Peak-hour factor, PHF	0.81	0.81	0.81	0.88	0.88	0.88	0.82	0.82	0.82	0.78	0.78	0.78
Adj. Flow (vph)	253	1163	162	32	1099	168	116	29	11	144	33	214
RTOR Reduction (vph)	0	6	0	0	0	74	0	5	0	0	186	0
Lane Group Flow (vph)	253	1319	0	32	1099	94	78	73	0	144	61	0
Confl. Peds. (#/hr)	7		40	40		7			24	24		
Confl. Bikes (#/hr)			1			1						1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Effective Green, g (s)	17.5	48.3		3.7	34.5	34.5	12.2	12.2		12.2	12.2	
Actuated g/C Ratio	0.19	0.52		0.04	0.37	0.37	0.13	0.13		0.13	0.13	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	331	1769		70	1307	562	219	219		231	209	
v/s Ratio Prot	c0.14	0.39		0.02	c0.31		c0.05	0.04		c0.08	0.04	
v/s Ratio Perm						0.06						
v/c Ratio	0.76	0.75		0.46	0.84	0.17	0.36	0.33		0.62	0.29	
Uniform Delay, d1	36.0	17.7		43.9	26.9	19.8	37.0	36.9		38.4	36.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	2.4		1.7	5.8	0.4	0.4	0.3		3.7	0.3	
Delay (s)	45.1	20.1		45.6	32.8	20.2	37.4	37.2		42.2	37.0	
Level of Service	D	C		D	C	C	D	D		D	D	
Approach Delay (s)		24.1			31.5			37.3			38.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	17.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1218	85	78	1156	80	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.98		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3432		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3432		1770	3539	1770	1583
Peak-hour factor, PHF	0.88	0.88	0.87	0.87	0.61	0.61
Adj. Flow (vph)	1384	97	90	1329	131	120
RTOR Reduction (vph)	3	0	0	0	0	99
Lane Group Flow (vph)	1478	0	90	1329	131	21
Confl. Peds. (#/hr)		139	139		19	
Confl. Bikes (#/hr)		2				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	49.8		8.8	62.6	15.4	15.4
Effective Green, g (s)	49.8		8.8	62.6	15.4	15.4
Actuated g/C Ratio	0.57		0.10	0.72	0.18	0.18
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	1964		179	2546	313	280
v/s Ratio Prot	c0.43		0.05	c0.38	c0.07	
v/s Ratio Perm						0.01
v/c Ratio	0.75		0.50	0.52	0.42	0.08
Uniform Delay, d1	14.0		37.0	5.5	31.8	29.9
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4		3.0	0.6	1.2	0.2
Delay (s)	16.4		40.0	6.1	33.1	30.0
Level of Service	B		D	A	C	C
Approach Delay (s)	16.4			8.2	31.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1122	0	0	1229	19	184
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.59	0.59
Hourly flow rate (vph)	1233	0	0	1429	32	312
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.93		0.86	0.93
vC, conflicting volume			1233		1948	616
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1102		1407	440
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		71	41
cM capacity (veh/h)			586		111	526

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	616	616	715	715	344
Volume Left	0	0	0	0	32
Volume Right	0	0	0	0	312
cSH	1700	1700	1700	1700	390
Volume to Capacity	0.36	0.36	0.42	0.42	0.88
Queue Length 95th (ft)	0	0	0	0	221
Control Delay (s)	0.0	0.0	0.0	0.0	53.8
Lane LOS					F
Approach Delay (s)	0.0		0.0		53.8
Approach LOS					F

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1100	28	90	1168	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.89	0.89	1.00	1.00
Hourly flow rate (vph)	1196	30	101	1312	0	0
Pedestrians					6	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.89		0.92	0.89
vC, conflicting volume			1232		2075	619
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1014		1466	326
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			83		100	100
cM capacity (veh/h)			605		91	596

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	797	429	101	656	656
Volume Left	0	0	101	0	0
Volume Right	0	30	0	0	0
cSH	1700	1700	605	1700	1700
Volume to Capacity	0.47	0.25	0.17	0.39	0.39
Queue Length 95th (ft)	0	0	15	0	0
Control Delay (s)	0.0	0.0	12.1	0.0	0.0
Lane LOS			B		
Approach Delay (s)	0.0		0.9		
Approach LOS					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1094	9	29	1124	15	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	3526		1770	3539	1655	
Flt Permitted	1.00		0.12	1.00	0.99	
Satd. Flow (perm)	3526		226	3539	1655	
Peak-hour factor, PHF	0.89	0.89	0.85	0.85	0.52	0.52
Adj. Flow (vph)	1229	10	34	1322	29	104
RTOR Reduction (vph)	1	0	0	0	41	0
Lane Group Flow (vph)	1238	0	34	1322	92	0
Confl. Peds. (#/hr)		92	92			
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	56.7		56.7	56.7	45.3	
Effective Green, g (s)	56.7		56.7	56.7	45.3	
Actuated g/C Ratio	0.52		0.52	0.52	0.41	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1817		116	1824	681	
v/s Ratio Prot	0.35			c0.37	c0.06	
v/s Ratio Perm			0.15			
v/c Ratio	0.68		0.29	0.72	0.14	
Uniform Delay, d1	19.9		15.2	20.6	20.2	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.1		1.4	1.5	0.4	
Delay (s)	21.0		16.6	22.1	20.6	
Level of Service	C		B	C	C	
Approach Delay (s)	21.0			21.9	20.6	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	49	1043	1078	42	54	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3519		1770	1538
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3519		1770	1538
Peak-hour factor, PHF	0.90	0.90	0.82	0.82	0.93	0.93
Adj. Flow (vph)	54	1159	1315	51	58	46
RTOR Reduction (vph)	0	0	2	0	0	40
Lane Group Flow (vph)	54	1159	1364	0	58	6
Confl. Peds. (#/hr)						16
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.3	57.2	47.9		10.5	10.5
Effective Green, g (s)	5.3	57.2	47.9		10.5	10.5
Actuated g/C Ratio	0.07	0.75	0.62		0.14	0.14
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	122	2639	2197		242	210
v/s Ratio Prot	0.03	c0.33	c0.39		c0.03	
v/s Ratio Perm						0.00
v/c Ratio	0.44	0.44	0.62		0.24	0.03
Uniform Delay, d1	34.3	3.7	8.8		29.5	28.7
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.5	0.3	0.9		0.7	0.1
Delay (s)	37.7	4.0	9.8		30.2	28.8
Level of Service	D	A	A		C	C
Approach Delay (s)		5.5	9.8		29.6	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	926	108	140	992	116	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3448		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3448		1770	3539	1770	1583
Peak-hour factor, PHF	0.89	0.89	0.81	0.81	0.66	0.66
Adj. Flow (vph)	1040	121	173	1225	176	236
RTOR Reduction (vph)	8	0	0	0	0	189
Lane Group Flow (vph)	1153	0	173	1225	176	47
Confl. Peds. (#/hr)		46	46		22	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	40.1		13.7	57.8	16.4	16.4
Effective Green, g (s)	40.1		13.7	57.8	16.4	16.4
Actuated g/C Ratio	0.49		0.17	0.70	0.20	0.20
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	1682		295	2488	353	315
v/s Ratio Prot	c0.33		c0.10	0.35	c0.10	
v/s Ratio Perm						0.03
v/c Ratio	0.69		0.59	0.49	0.50	0.15
Uniform Delay, d1	16.2		31.6	5.5	29.2	27.1
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	2.2		3.5	0.6	1.5	0.3
Delay (s)	18.4		35.1	6.1	30.8	27.4
Level of Service	B		D	A	C	C
Approach Delay (s)	18.4			9.7	28.9	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	233	786	199	765	274	149	868	229	326	922	207
v/c Ratio	0.30	1.00	0.53	0.97	0.50	0.74	0.84	0.42	1.48	0.86	0.38
Control Delay	39.9	78.6	47.8	71.0	19.5	73.4	48.4	14.8	273.9	48.9	12.8
Queue Delay	0.0	28.5	4.9	43.0	1.5	0.0	0.0	12.8	22.8	0.0	0.0
Total Delay	39.9	107.1	52.7	114.0	21.0	73.4	48.4	27.6	296.6	48.9	12.8
Queue Length 50th (ft)	77	~320	173	~346	88	112	327	48	~347	355	35
Queue Length 95th (ft)	115	#459	260	#484	172	#197	408	119	#531	#449	100
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	785	376	791	547	221	1061	563	221	1072	540
Starvation Cap Reductn	0	0	117	263	132	0	0	0	0	0	0
Spillback Cap Reductn	0	61	0	0	0	0	0	306	147	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.09	0.77	1.45	0.66	0.67	0.82	0.89	4.41	0.86	0.38

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	893	254	40	1030	200	205	126	44	229
v/c Ratio	0.45	0.61	0.38	0.33	0.75	0.59	0.60	0.34	0.14	0.64
Control Delay	61.7	25.9	17.6	57.7	30.5	44.9	44.8	16.8	37.3	33.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	25.9	17.6	57.7	30.5	44.9	44.8	16.8	37.3	33.5
Queue Length 50th (ft)	33	221	71	23	268	116	120	20	23	82
Queue Length 95th (ft)	#104	380	175	67	450	223	228	77	48	130
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	123	1772	780	123	1755	587	598	583	618	623
Starvation Cap Reductn	0	0	0	0	11	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.50	0.33	0.33	0.59	0.34	0.34	0.22	0.07	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	125	905	472	260	931	587	353	118	276
v/c Ratio	0.65	0.81	0.78	1.24	0.82	0.79	0.89	0.35	0.78
Control Delay	62.1	41.1	29.0	180.5	40.8	48.1	62.1	39.8	55.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	41.1	29.0	180.5	40.8	48.1	62.1	39.8	55.0
Queue Length 50th (ft)	84	306	176	~228	315	197	217	70	174
Queue Length 95th (ft)	132	343	255	#373	383	256	#367	121	260
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	210	1112	609	210	1130	785	418	404	417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.81	0.78	1.24	0.82	0.75	0.84	0.29	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	253	1325	32	1099	168	78	78	144	247
v/c Ratio	0.75	0.73	0.28	0.87	0.27	0.31	0.30	0.61	0.62
Control Delay	52.9	25.4	53.1	40.2	11.8	38.4	35.9	51.4	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	25.4	53.1	40.2	11.8	38.4	35.9	51.4	16.1
Queue Length 50th (ft)	127	285	17	290	18	43	40	76	16
Queue Length 95th (ft)	#268	#575	53	#605	81	84	80	137	60
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	386	1817	244	1261	614	521	525	549	645
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.73	0.13	0.87	0.27	0.15	0.15	0.26	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1481	90	1329	131	120
v/c Ratio	0.75	0.41	0.53	0.42	0.32
Control Delay	19.8	43.4	7.3	35.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	43.4	7.3	35.8	8.3
Queue Length 50th (ft)	285	44	120	64	0
Queue Length 95th (ft)	515	97	248	78	10
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	1974	292	2758	731	724
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.75	0.31	0.48	0.18	0.17

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1239	34	1322	133
v/c Ratio	0.68	0.30	0.72	0.18
Control Delay	21.4	20.4	22.6	13.3
Queue Delay	0.5	0.0	0.0	0.0
Total Delay	21.9	20.4	22.6	13.3
Queue Length 50th (ft)	328	13	364	27
Queue Length 95th (ft)	301	29	307	29
Internal Link Dist (ft)	361		89	321
Turn Bay Length (ft)		100		
Base Capacity (vph)	2404	149	2412	721
Starvation Cap Reductn	634	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.70	0.23	0.55	0.18

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1159	1366	58	46
v/c Ratio	0.24	0.43	0.58	0.19	0.15
Control Delay	38.9	5.6	13.3	31.4	10.9
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	38.9	5.6	13.5	31.4	10.9
Queue Length 50th (ft)	21	76	203	23	0
Queue Length 95th (ft)	69	198	358	64	29
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	418	3159	2564	758	680
Starvation Cap Reductn	0	0	359	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.37	0.62	0.08	0.07

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1161	173	1225	176	236
v/c Ratio	0.70	0.59	0.49	0.50	0.47
Control Delay	19.8	44.1	6.9	36.4	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	44.1	6.9	36.4	7.8
Queue Length 50th (ft)	226	79	115	80	0
Queue Length 95th (ft)	359	159	187	115	9
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2220	357	3039	693	763
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.48	0.40	0.25	0.31

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	1235	1325	48	36	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frpb, ped/bikes		1.00	1.00		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.99		0.96	
Flt Protected		1.00	1.00		0.97	
Satd. Flow (prot)		3537	3512		1730	
Flt Permitted		0.93	1.00		0.97	
Satd. Flow (perm)		3304	3512		1730	
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.78	0.78
Adj. Flow (vph)	15	1328	1395	51	46	18
RTOR Reduction (vph)	0	0	3	0	15	0
Lane Group Flow (vph)	0	1343	1443	0	49	0
Confl. Peds. (#/hr)	42			42	5	
Confl. Bikes (#/hr)				2		
Turn Type	pm+pt	NA	NA		NA	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		21.2	21.2		6.9	
Effective Green, g (s)		21.2	21.2		6.9	
Actuated g/C Ratio		0.59	0.59		0.19	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1940	2062		330	
v/s Ratio Prot			c0.41		c0.03	
v/s Ratio Perm		0.41				
v/c Ratio		0.69	0.70		0.15	
Uniform Delay, d1		5.2	5.2		12.2	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		1.1	1.1		0.2	
Delay (s)		6.3	6.3		12.4	
Level of Service		A	A		B	
Approach Delay (s)		6.3	6.3		12.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1459	79	1329	251
v/c Ratio	0.73	0.36	0.52	0.39
Control Delay	18.6	41.4	7.1	17.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.6	41.4	7.1	17.9
Queue Length 50th (ft)	245	37	98	31
Queue Length 95th (ft)	500	87	248	32
Internal Link Dist (ft)	713		1437	355
Turn Bay Length (ft)		150		50
Base Capacity (vph)	2111	316	2867	1528
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.25	0.46	0.16

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	298	618	82	282	681	416	119	998	206	251	967	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	1	12	12	12	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	1.00	0.98	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3453		1610	3384	1449	1770	3539	1555	1770	3539	1435
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3453		1610	3384	1449	1770	3539	1555	1770	3539	1435
Peak-hour factor, PHF	0.88	0.88	0.88	0.93	0.93	0.93	0.94	0.94	0.94	0.95	0.95	0.95
Adj. Flow (vph)	339	702	93	303	732	447	127	1062	219	264	1018	161
RTOR Reduction (vph)	0	9	0	0	0	205	0	0	80	0	0	70
Lane Group Flow (vph)	339	786	0	273	762	242	127	1062	139	264	1018	91
Confl. Peds. (#/hr)	51		33	33		51	53		5	5		53
Confl. Bikes (#/hr)			2			4						1
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	27.0	27.0		27.0	27.0	27.0	12.8	36.0	36.0	15.0	38.2	38.2
Effective Green, g (s)	27.0	27.0		27.0	27.0	27.0	12.8	36.0	36.0	15.0	38.2	38.2
Actuated g/C Ratio	0.22	0.22		0.22	0.22	0.22	0.11	0.30	0.30	0.12	0.32	0.32
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Grp Cap (vph)	772	776		362	761	326	188	1061	466	221	1126	456
v/s Ratio Prot	0.10	c0.23		0.17	c0.23		0.07	c0.30		c0.15	0.29	
v/s Ratio Perm						0.17			0.09			0.06
v/c Ratio	0.44	1.01		0.75	1.00	0.74	0.68	1.00	0.30	1.19	0.90	0.20
Uniform Delay, d1	40.0	46.5		43.4	46.5	43.3	51.6	42.0	32.3	52.5	39.1	29.8
Progression Factor	1.00	1.00		1.04	1.04	1.44	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	35.7		11.3	29.7	11.7	9.2	27.9	1.6	123.1	11.8	1.0
Delay (s)	40.4	82.2		56.3	78.1	73.9	60.8	69.9	33.9	175.6	51.0	30.7
Level of Service	D	F		E	E	E	E	E	C	F	D	C
Approach Delay (s)		69.7			72.8			63.5			71.5	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	69.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	44	814	252	34	850	14	524	145	158	26	28	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	12	12	12	1
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1482	1770	3525		1681	1720	1541	1770	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1482	1770	3525		1681	1720	1541	1770	1618	
Peak-hour factor, PHF	0.85	0.85	0.85	0.95	0.95	0.95	0.92	0.92	0.92	0.77	0.77	0.77
Adj. Flow (vph)	52	958	296	36	895	15	570	158	172	34	36	118
RTOR Reduction (vph)	0	0	47	0	1	0	0	0	62	0	100	0
Lane Group Flow (vph)	52	958	249	36	909	0	359	369	110	34	54	0
Confl. Peds. (#/hr)	27		17	17		27	10		12	12		10
Confl. Bikes (#/hr)			2			4						
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	37.8	37.8	3.2	36.5		27.1	27.1	27.1	11.1	11.1	
Effective Green, g (s)	4.5	37.8	37.8	3.2	36.5		27.1	27.1	27.1	11.1	11.1	
Actuated g/C Ratio	0.05	0.39	0.39	0.03	0.38		0.28	0.28	0.28	0.12	0.12	
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0		4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	82	1390	582	58	1337		473	484	434	204	186	
v/s Ratio Prot	c0.03	c0.27		0.02	0.26		0.21	c0.21		0.02	c0.03	
v/s Ratio Perm			0.17						0.07			
v/c Ratio	0.63	0.69	0.43	0.62	0.68		0.76	0.76	0.25	0.17	0.29	
Uniform Delay, d1	45.0	24.3	21.3	45.9	25.0		31.6	31.6	26.7	38.4	38.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.9	1.9	1.1	18.8	1.9		7.3	7.4	0.4	0.5	1.2	
Delay (s)	60.0	26.2	22.4	64.7	26.8		38.9	39.0	27.1	38.9	40.1	
Level of Service	E	C	C	E	C		D	D	C	D	D	
Approach Delay (s)		26.7			28.3			36.7			39.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	21	1085	1358	58	40	10
Peak Hour Factor	0.93	0.93	0.95	0.95	0.78	0.78
Hourly flow rate (vph)	23	1167	1429	61	51	13

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total (vph)	411	778	953	538	64
Volume Left (vph)	23	0	0	0	51
Volume Right (vph)	0	0	0	61	13
Hadj (s)	0.06	0.03	0.03	-0.05	0.07
Departure Headway (s)	6.3	6.3	6.1	6.0	7.0
Degree Utilization, x	0.72	1.36	1.62	0.90	0.12
Capacity (veh/h)	559	584	595	593	504
Control Delay (s)	22.9	191.3	300.5	39.6	11.0
Approach Delay (s)	133.0		206.4		11.0
Approach LOS	F		F		B

Intersection Summary			
Delay	170.0		
Level of Service	F		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
Description: Ralston Ave/South Rd			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	64	987	1234	121	92	73
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.65	0.65
Hourly flow rate (vph)	70	1073	1356	133	142	112
Pedestrians					12	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					1	
Right turn flare (veh)						2
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1501				2646	1435
vC1, stage 1 conf vol					1435	
vC2, stage 2 conf vol					1212	
vCu, unblocked vol	1501				2646	1435
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	84				8	31
cM capacity (veh/h)	442				154	162

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	70	1073	1489	254
Volume Left	70	0	0	142
Volume Right	0	0	133	112
cSH	442	1700	1700	206
Volume to Capacity	0.16	0.63	0.88	1.24
Queue Length 95th (ft)	14	0	0	331
Control Delay (s)	14.7	0.0	0.0	187.4
Lane LOS	B			F
Approach Delay (s)	0.9		0.0	187.4
Approach LOS				F

Intersection Summary			
Average Delay	16.8		
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Univ. Rd			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	937	13	152	1140	4	116
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.93	0.93	0.86	0.86
Hourly flow rate (vph)	1018	14	163	1226	5	135
Pedestrians					3	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	TWLTL			None		
Median storage veh)	2					
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1036		2581	1029
vC1, stage 1 conf vol					1029	
vC2, stage 2 conf vol					1553	
vCu, unblocked vol			1036		2581	1029
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)			2.2		3.5	3.3
p0 queue free %			76		96	52
cM capacity (veh/h)			669		130	283

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	1033	163	1226	5	135
Volume Left	0	163	0	5	0
Volume Right	14	0	0	0	135
cSH	1700	669	1700	130	283
Volume to Capacity	0.61	0.24	0.72	0.04	0.48
Queue Length 95th (ft)	0	24	0	3	60
Control Delay (s)	0.0	12.1	0.0	33.7	28.7
Lane LOS		B		D	D
Approach Delay (s)	0.0	1.4		28.9	
Approach LOS				D	

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Chula Vista Dr			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	59	909	1044	50	22	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.90	0.90	0.76	0.76
Hourly flow rate (vph)	69	1057	1160	56	29	64
Pedestrians			2		13	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1229				2397	1201
vC1, stage 1 conf vol					1201	
vC2, stage 2 conf vol					1196	
vCu, unblocked vol	1229				2397	1201
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	88				84	71
cM capacity (veh/h)	561				183	223

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total	69	1057	1216	93
Volume Left	69	0	0	29
Volume Right	0	0	56	64
cSH	561	1700	1700	209
Volume to Capacity	0.12	0.62	0.72	0.45
Queue Length 95th (ft)	10	0	0	53
Control Delay (s)	12.3	0.0	0.0	35.5
Lane LOS	B			E
Approach Delay (s)	0.8		0.0	35.5
Approach LOS				E

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
Description: Ralston Ave/Notre Dame Ave			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	171	772	450	185	766	100	521	223	106	127	223	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	1	12	12	1	12	12	1
Total Lost time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.97	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.94	1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1486	1770	3456		3433	1762		1770	1815	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1486	1770	3456		3433	1762		1770	1815	
Peak-hour factor, PHF	0.93	0.93	0.93	0.95	0.95	0.95	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	184	830	484	195	806	105	560	240	114	137	240	40
RTOR Reduction (vph)	0	0	156	0	9	0	0	16	0	0	6	0
Lane Group Flow (vph)	184	830	328	195	902	0	560	338	0	137	274	0
Confl. Peds. (#/hr)	13		16	16		13	15		4	4		15
Confl. Bikes (#/hr)						2			1			
Turn Type	Prot	NA	Perm	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases			2									
Actuated Green, G (s)	12.5	33.1	33.1	12.5	33.1		22.9	22.9		20.5	20.5	
Effective Green, g (s)	12.5	33.1	33.1	12.5	33.1		22.9	22.9		20.5	20.5	
Actuated g/C Ratio	0.12	0.31	0.31	0.12	0.31		0.22	0.22		0.19	0.19	
Clearance Time (s)	3.5	5.0	5.0	3.5	5.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	4.0	6.0	6.0	4.0	6.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	209	1110	466	209	1084		745	382		343	352	
v/s Ratio Prot	0.10	0.23		c0.11	c0.26		0.16	c0.19		0.08	c0.15	
v/s Ratio Perm			0.22									
v/c Ratio	0.88	0.75	0.70	0.93	0.83		0.75	0.89		0.40	0.78	
Uniform Delay, d1	45.8	32.5	31.9	46.1	33.6		38.6	40.0		37.1	40.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	32.8	3.8	6.9	44.0	6.5		4.6	21.4		1.0	11.0	
Delay (s)	78.5	36.2	38.8	90.1	40.1		43.2	61.5		38.2	51.4	
Level of Service	E	D	D	F	D		D	E		D	D	
Approach Delay (s)		42.3			48.9			50.3			47.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	105.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	248	1136	213	40	963	187	110	17	25	97	28	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.95	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (prot)	1770	3440		1770	3539	1546	1681	1634		1770	1636	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	0.98		0.95	1.00	
Satd. Flow (perm)	1770	3440		1770	3539	1546	1681	1634		1770	1636	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.72	0.72	0.72	0.83	0.83	0.83
Adj. Flow (vph)	288	1321	248	43	1047	203	153	24	35	117	34	145
RTOR Reduction (vph)	0	9	0	0	0	75	0	17	0	0	129	0
Lane Group Flow (vph)	288	1560	0	43	1047	128	107	88	0	117	50	0
Confl. Peds. (#/hr)	1		3	3		1			6	6		
Confl. Bikes (#/hr)			1			1			1			
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Effective Green, g (s)	19.2	48.2		4.2	33.2	33.2	12.0	12.0		10.4	10.4	
Actuated g/C Ratio	0.21	0.53		0.05	0.36	0.36	0.13	0.13		0.11	0.11	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.5	6.0		1.5	6.0	6.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	370	1806		80	1279	559	219	213		200	185	
v/s Ratio Prot	c0.16	c0.45		0.02	0.30		c0.06	0.05		c0.07	0.03	
v/s Ratio Perm						0.08						
v/c Ratio	0.78	0.86		0.54	0.82	0.23	0.49	0.42		0.58	0.27	
Uniform Delay, d1	34.3	18.9		42.8	26.6	20.4	37.1	36.7		38.7	37.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	5.2		3.4	5.0	0.6	0.6	0.5		2.8	0.3	
Delay (s)	43.4	24.1		46.3	31.5	21.0	37.7	37.2		41.5	37.5	
Level of Service	D	C		D	C	C	D	D		D	D	
Approach Delay (s)		27.1			30.4			37.4			39.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	17.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1514	58	37	1183	183	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	5.0		4.0	5.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.99		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3516		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3516		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.95	0.95	0.62	0.62
Adj. Flow (vph)	1664	64	39	1245	295	140
RTOR Reduction (vph)	2	0	0	0	0	108
Lane Group Flow (vph)	1726	0	39	1245	295	32
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	2		1	6	4	
Permitted Phases						4
Actuated Green, G (s)	49.5		5.2	58.7	20.4	20.4
Effective Green, g (s)	49.5		5.2	58.7	20.4	20.4
Actuated g/C Ratio	0.56		0.06	0.67	0.23	0.23
Clearance Time (s)	5.0		4.0	5.0	4.0	4.0
Vehicle Extension (s)	7.0		4.0	7.0	4.0	4.0
Lane Grp Cap (vph)	1975		104	2357	409	366
v/s Ratio Prot	c0.49		0.02	c0.35	c0.17	
v/s Ratio Perm						0.02
v/c Ratio	0.87		0.38	0.53	0.72	0.09
Uniform Delay, d1	16.6		39.9	7.6	31.2	26.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4		3.1	0.7	6.6	0.1
Delay (s)	22.1		43.0	8.2	37.8	26.7
Level of Service	C		D	A	D	C
Approach Delay (s)	22.1			9.3	34.2	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1543	0	0	1357	11	34
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.98	0.98	0.66	0.66
Hourly flow rate (vph)	1696	0	0	1385	17	52
Pedestrians					1	
Lane Width (ft)					16.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1057			793		
pX, platoon unblocked			0.79		0.88	0.79
vC, conflicting volume			1697		2389	849
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1351		1430	279
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		85	91
cM capacity (veh/h)			399		110	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	848	848	692	692	68
Volume Left	0	0	0	0	17
Volume Right	0	0	0	0	52
cSH	1700	1700	1700	1700	281
Volume to Capacity	0.50	0.50	0.41	0.41	0.24
Queue Length 95th (ft)	0	0	0	0	23
Control Delay (s)	0.0	0.0	0.0	0.0	21.9
Lane LOS					C
Approach Delay (s)	0.0		0.0		21.9
Approach LOS					C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1537	14	29	1308	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	1708	16	30	1348	0	0
Pedestrians					2	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	610			1240		
pX, platoon unblocked			0.78		0.85	0.78
vC, conflicting volume			1725		2452	864
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1376		1629	278
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		100	100
cM capacity (veh/h)			388		73	564

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3
Volume Total	1139	585	30	674	674
Volume Left	0	0	30	0	0
Volume Right	0	16	0	0	0
cSH	1700	1700	388	1700	1700
Volume to Capacity	0.67	0.34	0.08	0.40	0.40
Queue Length 95th (ft)	0	0	6	0	0
Control Delay (s)	0.0	0.0	15.1	0.0	0.0
Lane LOS			C		
Approach Delay (s)	0.0		0.3		
Approach LOS					

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1534	9	19	1280	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	1
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	0.95		1.00	0.95	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.92	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	3535		1770	3539	1695	
Flt Permitted	1.00		0.09	1.00	0.98	
Satd. Flow (perm)	3535		166	3539	1695	
Peak-hour factor, PHF	0.92	0.92	0.93	0.93	0.63	0.63
Adj. Flow (vph)	1667	10	20	1376	10	14
RTOR Reduction (vph)	1	0	0	0	11	0
Lane Group Flow (vph)	1676	0	20	1376	13	0
Confl. Peds. (#/hr)		4	4			
Confl. Bikes (#/hr)		2				
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Turn Type	NA		Perm	NA	NA	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	75.7		75.7	75.7	26.3	
Effective Green, g (s)	75.7		75.7	75.7	26.3	
Actuated g/C Ratio	0.69		0.69	0.69	0.24	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	2432		114	2435	405	
v/s Ratio Prot	c0.47			0.39	c0.01	
v/s Ratio Perm			0.12			
v/c Ratio	0.69		0.18	0.57	0.03	
Uniform Delay, d1	10.2		6.1	8.8	32.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.8		0.7	0.3	0.2	
Delay (s)	11.0		6.8	9.1	32.2	
Level of Service	B		A	A	C	
Approach Delay (s)	11.0			9.0	32.2	
Approach LOS	B			A	C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	51	1496	1249	54	47	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	1	12	12
Total Lost time (s)	4.0	5.0	5.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3514		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3514		1770	1583
Peak-hour factor, PHF	0.95	0.95	0.96	0.96	0.74	0.74
Adj. Flow (vph)	54	1575	1301	56	64	41
RTOR Reduction (vph)	0	0	2	0	0	37
Lane Group Flow (vph)	54	1575	1355	0	64	4
Confl. Bikes (#/hr)				1		
Turn Type	Prot	NA	NA		NA	Perm
Protected Phases	1	6	2		4	
Permitted Phases						4
Actuated Green, G (s)	5.4	56.0	46.6		7.5	7.5
Effective Green, g (s)	5.4	56.0	46.6		7.5	7.5
Actuated g/C Ratio	0.07	0.77	0.64		0.10	0.10
Clearance Time (s)	4.0	5.0	5.0		4.0	4.0
Vehicle Extension (s)	4.0	6.0	6.0		4.0	4.0
Lane Grp Cap (vph)	131	2733	2258		183	163
v/s Ratio Prot	0.03	c0.45	0.39		c0.04	
v/s Ratio Perm						0.00
v/c Ratio	0.41	0.58	0.60		0.35	0.03
Uniform Delay, d1	32.0	3.4	7.5		30.2	29.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	0.6	0.8		1.6	0.1
Delay (s)	34.9	4.0	8.3		31.8	29.3
Level of Service	C	A	A		C	C
Approach Delay (s)		5.0	8.3		30.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1442	177	116	1154	89	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	1	12	12	12	12
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3473		1770	3539	1770	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3473		1770	3539	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.97	0.97	0.84	0.84
Adj. Flow (vph)	1585	195	120	1190	106	145
RTOR Reduction (vph)	7	0	0	0	0	124
Lane Group Flow (vph)	1773	0	120	1190	106	21
Confl. Peds. (#/hr)		1	1		6	
Confl. Bikes (#/hr)		1				
Turn Type	NA		Prot	NA	NA	Perm
Protected Phases	6		5	2	4	
Permitted Phases						4
Actuated Green, G (s)	51.4		12.0	67.4	12.9	12.9
Effective Green, g (s)	51.4		12.0	67.4	12.9	12.9
Actuated g/C Ratio	0.58		0.14	0.76	0.15	0.15
Clearance Time (s)	4.0		4.0	4.0	4.0	4.0
Vehicle Extension (s)	7.5		4.0	7.5	4.0	4.0
Lane Grp Cap (vph)	2021		240	2701	258	231
v/s Ratio Prot	c0.51		c0.07	0.34	c0.06	
v/s Ratio Perm						0.01
v/c Ratio	0.88		0.50	0.44	0.41	0.09
Uniform Delay, d1	15.8		35.4	3.7	34.2	32.6
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6		2.2	0.5	1.5	0.2
Delay (s)	21.3		37.6	4.2	35.7	32.9
Level of Service	C		D	A	D	C
Approach Delay (s)	21.3			7.2	34.1	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	88.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	339	795	273	762	447	127	1062	219	264	1018	161
v/c Ratio	0.44	1.01	0.75	1.00	0.84	0.67	1.00	0.40	1.19	0.90	0.31
Control Delay	42.1	80.9	57.1	78.1	38.1	68.8	70.1	18.0	168.2	51.9	14.1
Queue Delay	0.0	14.6	58.0	36.6	37.2	0.0	0.0	25.4	20.3	0.0	0.0
Total Delay	42.1	95.5	115.1	114.8	75.4	68.8	70.1	43.4	188.5	51.9	14.1
Queue Length 50th (ft)	117	~329	242	~345	232	95	~433	61	~247	401	32
Queue Length 95th (ft)	158	#448	#362	#482	#351	160	#584	132	#416	#546	90
Internal Link Dist (ft)		519		206			352			536	
Turn Bay Length (ft)	105					145		145	175		175
Base Capacity (vph)	772	785	362	761	531	221	1061	546	221	1125	526
Starvation Cap Reductn	0	0	116	263	110	0	0	0	0	0	0
Spillback Cap Reductn	0	33	0	0	0	0	0	320	140	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	1.06	1.11	1.53	1.06	0.57	1.00	0.97	3.26	0.90	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	52	958	296	36	910	359	369	172	34	154
v/c Ratio	0.44	0.68	0.47	0.32	0.69	0.75	0.75	0.34	0.17	0.53
Control Delay	62.4	28.4	20.3	57.4	29.6	44.8	44.7	18.4	43.1	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	28.4	20.3	57.4	29.6	44.8	44.7	18.4	43.1	21.6
Queue Length 50th (ft)	33	270	103	22	251	212	218	40	20	25
Queue Length 95th (ft)	#87	383	197	63	390	#446	#457	117	44	61
Internal Link Dist (ft)		847			519		269			467
Turn Bay Length (ft)	65		45	80		80		50	65	
Base Capacity (vph)	117	1685	736	117	1679	558	571	567	588	611
Starvation Cap Reductn	0	0	0	0	14	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.57	0.40	0.31	0.55	0.64	0.65	0.30	0.06	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	184	830	484	195	911	560	354	137	280
v/c Ratio	0.88	0.75	0.78	0.93	0.84	0.75	0.89	0.40	0.78
Control Delay	85.0	38.3	27.8	94.7	42.0	46.3	63.6	40.9	55.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.0	38.3	27.8	94.7	42.0	46.3	63.6	40.9	55.6
Queue Length 50th (ft)	128	274	168	137	308	187	226	83	179
Queue Length 95th (ft)	#266	357	#350	#283	#425	254	#400	141	273
Internal Link Dist (ft)		2910			580		904		546
Turn Bay Length (ft)	95		85	190		250		140	
Base Capacity (vph)	210	1109	621	210	1091	782	417	403	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.75	0.78	0.93	0.84	0.72	0.85	0.34	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	288	1569	43	1047	203	107	105	117	179
v/c Ratio	0.76	0.85	0.35	0.85	0.33	0.48	0.45	0.57	0.57
Control Delay	50.3	27.2	50.9	36.9	12.9	43.4	35.5	50.7	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	27.2	50.9	36.9	12.9	43.4	35.5	50.7	18.3
Queue Length 50th (ft)	148	386	23	272	32	58	47	62	17
Queue Length 95th (ft)	#342	#802	66	#558	112	90	76	124	71
Internal Link Dist (ft)		1437		2910			203		148
Turn Bay Length (ft)	110		115		30	85		45	
Base Capacity (vph)	377	1844	238	1231	613	509	508	536	596
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.85	0.18	0.85	0.33	0.21	0.21	0.22	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1728	39	1245	295	140
v/c Ratio	0.86	0.22	0.53	0.71	0.29
Control Delay	24.6	42.7	9.5	40.8	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	42.7	9.5	40.8	6.7
Queue Length 50th (ft)	450	21	167	156	0
Queue Length 95th (ft)	#786	56	288	157	9
Internal Link Dist (ft)	713		1437	355	
Turn Bay Length (ft)		65		50	
Base Capacity (vph)	2013	292	2755	731	735
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.13	0.45	0.40	0.19

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1677	20	1376	24
v/c Ratio	0.69	0.18	0.56	0.06
Control Delay	11.5	8.2	9.5	23.5
Queue Delay	2.3	0.0	0.0	0.0
Total Delay	13.9	8.2	9.5	23.5
Queue Length 50th (ft)	297	4	211	6
Queue Length 95th (ft)	300	12	213	18
Internal Link Dist (ft)	361		89	321
Turn Bay Length (ft)		100		
Base Capacity (vph)	2667	125	2670	415
Starvation Cap Reductn	819	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.91	0.16	0.52	0.06

Intersection Summary

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	54	1575	1357	64	41
v/c Ratio	0.24	0.56	0.56	0.27	0.16
Control Delay	34.4	4.8	10.3	34.3	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	4.8	10.3	34.3	13.0
Queue Length 50th (ft)	21	127	203	25	0
Queue Length 95th (ft)	63	208	325	57	20
Internal Link Dist (ft)		973	361	124	
Turn Bay Length (ft)	65			45	
Base Capacity (vph)	423	3333	2682	768	710
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.47	0.51	0.08	0.06

Intersection Summary

Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1780	120	1190	106	145
v/c Ratio	0.88	0.50	0.44	0.41	0.41
Control Delay	23.8	44.2	4.9	39.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	44.2	4.9	39.2	9.5
Queue Length 50th (ft)	390	61	88	54	0
Queue Length 95th (ft)	#802	130	213	97	40
Internal Link Dist (ft)	2726		973	553	
Turn Bay Length (ft)		80		125	
Base Capacity (vph)	2028	322	2866	625	653
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.88	0.37	0.42	0.17	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	21	1085	1358	58	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.95		1.00	
Frpb, ped/bikes		1.00	1.00		1.00	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.99		0.97	
Flt Protected		1.00	1.00		0.96	
Satd. Flow (prot)		3536	3511		1742	
Flt Permitted		0.91	1.00		0.96	
Satd. Flow (perm)		3229	3511		1742	
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.78	0.78
Adj. Flow (vph)	23	1167	1429	61	51	13
RTOR Reduction (vph)	0	0	4	0	10	0
Lane Group Flow (vph)	0	1190	1486	0	54	0
Confl. Peds. (#/hr)	22			22	9	
Confl. Bikes (#/hr)				6		
Turn Type	pm+pt	NA	NA		NA	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Actuated Green, G (s)		21.7	21.7		7.1	
Effective Green, g (s)		21.7	21.7		7.1	
Actuated g/C Ratio		0.59	0.59		0.19	
Clearance Time (s)		4.0	4.0		4.0	
Vehicle Extension (s)		3.0	3.0		3.0	
Lane Grp Cap (vph)		1904	2070		336	
v/s Ratio Prot			c0.42		c0.03	
v/s Ratio Perm		0.37				
v/c Ratio		0.62	0.72		0.16	
Uniform Delay, d1		4.9	5.4		12.4	
Progression Factor		1.00	1.00		1.00	
Incremental Delay, d2		0.6	1.2		0.2	
Delay (s)		5.6	6.6		12.6	
Level of Service		A	A		B	
Approach Delay (s)		5.6	6.6		12.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	36.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	1728	39	1245	435
v/c Ratio	0.83	0.29	0.53	0.59
Control Delay	17.9	37.1	7.0	21.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	37.1	7.0	21.7
Queue Length 50th (ft)	311	16	113	64
Queue Length 95th (ft)	#547	46	191	61
Internal Link Dist (ft)	713		1437	355
Turn Bay Length (ft)		150		50
Base Capacity (vph)	2075	136	2563	1298
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.83	0.29	0.49	0.34

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

SIGNAL WARRANTS WORKSHEETS

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **South Road** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,450	136		Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,298	50		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	4,748	186		2	0	**0**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

08/20/14

Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Note Dame University Rd** NB SB # OF APPROACH LANES: **2**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES →				**500**	**200**		**750**	**100**		**400**	**160**		**600**	**80**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,430	153		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,209	165		Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	4,639	318		2	0	**0**	2	2	**2**	2	1	**1**	2	2	**2**	**2**	**2**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

08/20/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Chulta Vista Dr** NB SB # OF APPROACH LANES: **2**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**200**		**750**	**100**		**400**	**160**		**600**	**80**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,149	291		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,068	120		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	4,217	411		2	1	**1**	2	2	**2**	2	1	**1**	2	2	**2**	**2**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

08/20/14

Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Norte Dame Ave** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**150**		**750**	**75**		**400**	**120**		**600**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	1,926	123		Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	1,946	71		Y			Y			Y			Y	Y	**Y**		
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	3,872	194		2	0	**0**	2	1	**1**	2	1	**1**	2	2	**2**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

08/20/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Ralston MS Exit** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,927	279		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,560	37		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	5,487	316		2	1	**1**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

08/20/14

Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Ralston MS Entrance** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**150**		**750**	**75**		**400**	**120**		**600**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	1,292	197		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	1,402	24		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	2,694	221		2	1	**1**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED for both Condition A & B **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

08/20/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Tahoe Dr** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,806	84		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,508	15		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	5,314	99		2	0	**0**	2	1	**1**	2	0	**0**	2	1	**1**	**1**	**0**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

08/20/14

Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Tahoe Dr** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Existing Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,967	84		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,610	15		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	5,577	99		2	0	**0**	2	1	**1**	2	0	**0**	2	1	**1**	**1**	**0**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

08/20/14

Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **South Road** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES →				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,821	136		Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,467	50		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	5,288	186		2	0	**0**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

12/12/14

Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Note Dame University Rd** NB SB # OF APPROACH LANES: **2**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**200**		**750**	**100**		**400**	**160**		**600**	**80**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	1,780	153		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,351	165		Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	4,131	318		2	0	**0**	2	2	**2**	2	1	**1**	2	2	**2**	**2**	**2**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

12/12/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Chulta Vista Dr** NB SB # OF APPROACH LANES: **2**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**200**		**750**	**100**		**400**	**160**		**600**	**80**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,416	291		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,187	120		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	4,603	411		2	1	**1**	2	2	**2**	2	1	**1**	2	2	**2**	**2**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

12/12/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Norte Dame Ave** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**150**		**750**	**75**		**400**	**120**		**600**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	2,192	123		Y			Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,007	71		Y			Y			Y			Y	Y	**Y**		
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	4,199	194		2	0	**0**	2	1	**1**	2	1	**1**	2	2	**2**	**1**	**1**
				8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED **NOT SATISFIED**			8 HOURS NEEDED for both Condition A & B **NOT SATISFIED**						4 HRS NEEDED **NOT SATISFIED**	1 HR NEEDED **SATISFIED**

12/12/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Ralston MS Exit** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	3,165	335		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,777	45		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	5,942	380		2	1	**1**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

12/12/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **1**

MINOR STREET: **Ralston MS Entrance** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**500**	**150**		**750**	**75**		**400**	**120**		**600**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	1,396	236		Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	Y	Y	**Y**	**Y**	**Y**
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	1,514	19		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	2,910	255		2	1	**1**	2	1	**1**	2	1	**1**	2	1	**1**	**1**	**1**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**SATISFIED**

12/12/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Tahoe Dr** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	3,014	84		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,719	15		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	5,733	99		2	0	**0**	2	1	**1**	2	0	**0**	2	1	**1**	**1**	**0**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

12/12/14
Kimley-Horn and Associates

TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS (2010 MUTCD)

MAJOR STREET: **Ralston Ave** EB WB # OF APPROACH LANES: **2**

MINOR STREET: **Tahoe Dr** NB SB # OF APPROACH LANES: **1**

CITY, STATE: **Belmont, CA**

COMMENTS: **Future Plus Project Conditions**

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): **N**
85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): **N**

	MAJOR ST TWO-WAY TRAFFIC	MINOR ST TRAFFIC HEAVY LEG	Ped Count CROSSING MAJOR ST	WARRANT 1 - Condition A, Part 1			WARRANT 1 - Condition B, Part 1			WARRANT 1 - Condition A, Part 2			WARRANT 1 - Condition B, Part 2			WARRANT 2 Four-Hour	WARRANT 3 Peak Hour
				MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET	MAIN LINE	SIDE STREET	BOTH MET		
THRESHOLD VALUES				**600**	**150**		**900**	**75**		**480**	**120**		**720**	**60**		**60**	**75**
06:30 AM TO 07:30 AM																	
07:30 AM TO 08:30 AM																	
08:30 AM TO 09:30 AM	3,178	84		Y			Y	Y	**Y**	Y			Y	Y	**Y**	**Y**	
09:30 AM TO 10:30 AM																	
10:30 AM TO 11:30 AM																	
11:00 AM TO 12:00 PM																	
12:30 PM TO 01:30 PM																	
01:30 PM TO 02:30 PM																	
02:30 PM TO 03:30 PM																	
03:30 PM TO 04:30 PM																	
04:30 PM TO 05:30 PM	2,822	15		Y			Y			Y			Y				
05:30 PM TO 06:30 PM																	
06:30 PM TO 07:30 PM																	
07:30 PM TO 08:30 PM																	
08:30 PM TO 09:30 PM																	
09:30 PM TO 10:30 PM																	
	6,000	99		2	0	**0**	2	1	**1**	2	0	**0**	2	1	**1**	**1**	**0**
				8 HOURS NEEDED			8 HOURS NEEDED			8 HOURS NEEDED for both Condition A & B						4 HRS NEEDED	1 HR NEEDED
				NOT SATISFIED			**NOT SATISFIED**			**NOT SATISFIED**						**NOT SATISFIED**	**NOT SATISFIED**

12/12/14
Kimley-Horn and Associates

EXCLUSIVE TURN LANE WARRANTS

Existing Minimum Required Exclusive Turn Lane Based on Turn Lane Warrant Criteria

No.	Description	NBL		NBR		SBL		SBR		EBL		EBR		WBL		WBR	
		Existing	Required	Existing	Required	Existing	Required	Existing	Required	Existing	Required	Existing	Required	Existing	Required	Existing	Required
#1	Ralston Ave and El Camino Real	1	1	1	0	1	1	1	0	2	1	0	0	1	1	1	1
#2	Ralston Ave and Sixth Ave	**1**	**2**	1	0	1	0	0	0	1	0	1	1	1	0	0	0
#7	Ralston Ave and Alameda de Las Pulgas	2	2	0	0	1	1	0	0	1	1	1	1	1	1	0	0
#8	Ralston Ave and Cipriani Blvd	**1**	**2**	0	0	1	1	1	0	1	1	1	0	1	0	1	0
#9	Ralston Ave and Davis Dr	1	0	1	0	-	-	-	-	-	-	0	0	1	0	-	-
#13	Ralston Ave and Belmont Canyon Rd	-	-	-	-	1	1	1	0	1	0	-	-	-	-	0	0
#14	Ralston Ave and Hallmark Dr	1	1	1	0	-	-	-	-	-	-	0	0	1	1	-	-

Turn lane warrant criteria based on suggested vehicular volumes per hour for an exclusive right or left turn lane as outlined in the *Highway Capacity Manual (HCM) 2000.*

Existing Plus Project Minimum Required Exclusive Turn Lane Based on Turn Lane Warrant Criteria

No.	Description	NBL			NBR		SBL			SBR		EBL		EBR		WBL		WBR	
		Existing	Required	Δ > 1%?	Existing	Required	Existing	Required	Δ > 1%?	Existing	Required	Existing	Required	Existing	Required	Existing	Required	Existing	Required
#1	Ralston Ave and El Camino Real	1	1		1	0	1	1		1	0	2	1	0	0	1	1	1	1
#2	Ralston Ave and Sixth Ave	**1**	**2**	**No**	1	0	1	0		0	0	1	0	1	1	1	0	0	0
#7	Ralston Ave and Alameda de Las Pulgas	2	2		0	0	1	1		0	0	1	1	1	1	1	1	0	0
#8	Ralston Ave and Cipriani Blvd	**1**	**2**	**No**	0	0	1	1		1	0	1	1	1	0	1	0	1	0
#9	Ralston Ave and Davis Dr	1	1		1	0	-	-		-	-	-	-	0	0	1	0	-	-
#13	Ralston Ave and Belmont Canyon Rd	-	-		-	-	1	1		1	0	1	0	-	-	-	-	0	0
#14	Ralston Ave and Hallmark Dr	1	1		1	0	-	-		-	-	-	-	0	0	1	1	-	-

Turn lane warrant criteria based on suggested vehicular volumes per hour for an exclusive right or left turn lane as outlined in the *Highway Capacity Manual (HCM) 2000.*

Future Minimum Required Exclusive Turn Lane Based on Turn Lane Warrant Criteria

No.	Description	NBL		NBR		SBL		SBR		EBL		EBR		WBL		WBR	
		Future	Required	Future	Required	Future	Required	Future	Required	Future	Required	Future	Required	Future	Required	Future	Required
#1	Ralston Ave and El Camino Real	1	1	1	0	**1**	**2**	1	0	2	1	0	0	1	1	1	1
#2	Ralston Ave and Sixth Ave	**1**	**2**	1	0	1	0	0	0	1	0	1	1	1	0	0	0
#3	Ralston Ave and South Raod	-	-	-	-	0	0	0	0	0	0	-	-	-	-	0	0
#8	Ralston Ave and Cipriani Blvd	**1**	**2**	0	0	1	1	1	0	1	1	1	0	1	0	1	0
#9	Ralston Ave and Davis Dr	1	0	1	0	-	-	-	-	-	-	0	0	1	0	-	-
#10	Ralston Ave and Ralston MS Exit	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-
#14	Ralston Ave and Hallmark Dr	1	1	1	0	-	-	-	-	-	-	0	0	1	1	-	-

Turn lane warrant criteria based on suggested vehicular volumes per hour for an exclusive right or left turn lane as outlined in the Highway Capacity Manual (HCM) 2000.

Future Plus Project Minimum Required Exclusive Turn Lane Based on Turn Lane Warrant Criteria

No.	Description	NBL			NBR		SBL			SBR		EBL		EBR		WBL		WBR	
		Future	Required	Δ > 1%?	Future	Required	Future	Required	Δ > 1%?	Future	Required	Future	Required	Future	Required	Future	Required	Future	Required
#1	Ralston Ave and El Camino Real	1	1		1	0	**1**	**2**	**No**	1	0	2	1	0	0	1	1	1	1
#2	Ralston Ave and Sixth Ave	**1**	**2**	**No**	1	0	1	0		0	0	1	0	1	1	1	0	0	0
#3	Ralston Ave and South Raod	-	-		-	-	0	0		0	0	0	0	-	-	-	-	0	0
#8	Ralston Ave and Cipriani Blvd	**1**	**2**	**No**	0	0	1	1		1	0	1	1	1	0	1	0	1	0
#9	Ralston Ave and Davis Dr	1	1		1	0	-	-		-	-	-	-	0	0	1	1	-	-
#10	Ralston Ave and Ralston MS Exit	0	0		0	0	-	-		-	-	-	-	-	-	-	-	-	-
#14	Ralston Ave and Hallmark Dr	1	1		1	0	-	-		-	-	-	-	0	0	1	1	-	-

Turn lane warrant criteria based on suggested vehicular volumes per hour for an exclusive right or left turn lane as outlined in the Highway Capacity Manual (HCM) 2000.

pg. 10-18 of HCM 2000, Exhibit 10-13

QUEUE SUMMARY

Crystal Springs Queuing Summary

Ralston Ave

Scenarios Analyzed	Turning Movement	El Camino Real #1				Sixth Ave #2				Norte Dame University Rd #4				Chula Vista Dr #5			
		Link	AM	MD	PM	Link	AM	MD	PM	Link	AM	MD	PM	Link	AM	MD	PM
Existing Traffic	NBL	145	93	169	148	80	242	223	446					50	<25	<25	<25
	NBR	145	74	108	125	50	25	77	117								
	SBL	175	475	444	346	65	31	48	44								
	SBR	175	42	72	69					50	264	527	251				
	EBL	105	84	103	141	65	67	104	87	165	<25	<25	<25				
	EBR					45	329	175	193								
	WBL	285	145	258	351	80	35	67	63					185	63	28	<25
	WBR	285	<25	173	307												
Existing + Project Traffic	NBL	145	102	177	152	80	242	223	446					50	<25	<25	<25
	NBR	145	74	108	125	50	25	77	117								
	SBL	175	475	444	346	65	31	48	44								
	SBR	175	45	73	69					50	286	**554**	266				
	EBL	105	85	104	142	65	67	104	87	165	<25	<25	<25				
	EBR					45	333	175	196								
	WBL	285	134	256	349	80	35	67	63					185	67	28	<25
	WBR	285	<25	172	306												
Background Traffic	NBL	145	102	186	156	80	242	223	446					50	<25	<25	<25
	NBR	145	95	119	132	50	25	77	117								
	SBL	175	567	531	416	65	31	48	44								
	SBR	175	61	99	90					50	416	606	317				
	EBL	105	101	114	157	65	67	104	87	165	<25	<25	<25				
	EBR					45	347	175	197								
	WBL	285	170	261	361	80	35	67	63					185	85	31	<25
	WBR	285	<25	174	348												
Background + Project Traffic	NBL	145	125	197	160	80	242	223	446					50	<25	<25	<25
	NBR	145	97	119	132	50	25	77	117								
	SBL	175	567	531	416	65	31	48	44								
	SBR	175	61	100	90					50	**449**	**627**	**331**				
	EBL	105	101	115	158	65	67	104	87	165	<25	<25	<25				
	EBR					45	350	175	197								
	WBL	285	176	260	362	80	35	67	63					185	90	31	<25
	WBR	285	<25	172	351												

Scenarios Analyzed	Turning Movement	Norte Dame Ave #6				Alameda de las Pulgas #7				Cipriani Blvd #8				Davis Dr #9			
		Link	AM	MD	PM	Link	AM	MD	PM	Link	AM	MD	PM	Link	AM	MD	PM
Existing Traffic	NBL					250	224	222	220	85	282	84	90	50	102	45	61
	NBR																
	SBL					140	177	116	136	45	152	137	124				
	SBR																
	EBL	85	<25	<25	<25	85	88	129	260	110	287	268	342				
	EBR					95	152	194	236								
	WBL					190	251	347	263	115	25	53	66	65	76	65	25
	WBR									30	49	81	112				
Existing + Project Traffic	NBL					250	226	223	221	85	282	84	90	50	**177**	**78**	**129**
	NBR																
	SBL					140	177	116	136	45	152	137	124				
	SBR																
	EBL	85	<25	<25	<25	85	90	130	261	110	287	268	342				
	EBR					95	158	199	249								
	WBL					190	251	347	263	115	25	53	66	65	**129**	**91**	50
	WBR									30	49	81	112				
Background Traffic	NBL					250	236	254	252	85	282	84	90	50	108	45	88
	NBR																
	SBL					140	177	121	141	45	152	137	124				
	SBR																
	EBL	85	<25	<25	<25	85	119	131	263	110	287	268	342				
	EBR					95	175	249	310								
	WBL					190	251	373	283	115	25	53	66	65	91	65	30
	WBR									30	49	81	112				
Background + Project Traffic	NBL					250	238	256	254	85	282	84	90	50	**185**	**78**	**157**
	NBR																
	SBL					140	177	121	141	45	152	137	124				
	SBR																
	EBL	85	<25	<25	<25	85	120	132	266	110	287	268	342				
	EBR					95	181	255	330								
	WBL					190	251	373	283	115	25	53	66	65	**148**	**97**	56
	WBR									30	49	81	112				

Scenarios Analyzed	Turning Movement	Ralston MS Entry #11				Tahoe Dr #12				Delmont Canyon Rd #13				Hallmark Dr #14			
		Link	AM	MD	PM	Link	AM	MD	PM	Link	AM	MD	PM	Link	AM	MD	PM
Existing Traffic	NBL													125	271	111	97
	NBR																
	SBL									45	109	64	54				
	SBR																
	EBL									65	55	69	59				
	EBR																
	WBL	80	65	<25	<25	100	33	<25	<25					80	345	153	130
	WBR																
Existing + Project Traffic	NBL													125	271	115	97
	NBR																
	SBL									45	109	67	57				
	SBR																
	EBL									65	55	69	62				
	EBR																
	WBL	80	66	<25	<25	100	38	<25	<25					80	345	159	130
	WBR																
Background Traffic	NBL													125	271	115	97
	NBR																
	SBL									45	109	64	58				
	SBR																
	EBL									65	55	69	63				
	EBR																
	WBL	80	95	<25	<25	100	98	28	100					80	345	159	130
	WBR																
Background + Project Traffic	NBL													125	271	115	97
	NBR																
	SBL									45	111	64	57				
	SBR																
	EBL									65	56	69	63				
	EBR																
	WBL	80	114	<25	<25	100	98	29	<25					80	345	159	130
	WBR																

- 95th Percentile queues calculated using Synchro 8.0 and methods outlined in the *Highway Capacity Manual (HCM) 2000*.
- Gray highlighting indicates queues are overcapacity, yellow highlighting indicates a project significant impact.

Crystal Springs Queuing Summary

Scenarios Analyzed	Turning Movement	Ralston Ave / Davis Dr #9 Link	AM	MD	PM
Existing Traffic	NBL	50	102	45	61
	NBR				
	SBL				
	SBR				
	EBL				
	EBR				
	WBL	65	76	65	25
	WBR				
Existing + Project Traffic (Mitigated)	NBL	435	**97**	**32**	**47**
	NBR				
	SBL				
	SBR				
	EBL				
	EBR				
	WBL	150	**125**	**81**	42
	WBR				
Background Traffic	NBL	50	106	45	77
	NBR				
	SBL				
	SBR				
	EBL				
	EBR				
	WBL	65	83	65	27
	WBR				
Background + Project Traffic (Mitigated)	NBL	435	**102**	**32**	**61**
	NBR				
	SBL				
	SBR				
	EBL				
	EBR				
	WBL	150	**141**	**87**	46
	WBR				

- 95th Percentile queues calculated using Synchro 8.0 and methods outlined in the Highway Capacity Manual (HCM) 2000.

- Gray highlighting indicates queues are overcapacity. Green highlighting identifies the mitigated project significant impacts.

PROPOSED TRAFFIC FLOW, PARKING, & TDM PLANS

APPENDIX

PROPOSED TRAFFIC FLOW, PARKING & TRAFFIC DEMAND MANAGEMENT PLANS

CSUS proposes comprehensive programs and procedures for Traffic Flow, Parking and Traffic Demand Management (TDM). The following appendix provides specific details on each of these topics as well as general procedures and best practices. A CSUS commute survey—which indicates an existing culture of trip reduction and alternative mode travel practices already ingrained in the CSUS community—is also included as part of this analysis.

TRAFFIC FLOW

Site Layout for Transportation

On-site circulation was evaluated at the Project's driveways and within the Project site based on information provided by CSUS in the form of a preliminary site plan.

There are three entrances to the Project along Davis Drive. One curb cut enters the northern half of the parking lot leading to the main parking area and also serves as the passenger vehicle entrance point for the drop-off/pickup arc and as an exit point for the northern driveway, the second curb cut leads to the student pickup/drop-off entrance arc in front of the Academic Center and is restricted to bus and shuttle entry only during drop-off/pickup procedures, and the third curb cut at the southernmost part of the site is a shared student drop-off/pickup exit and service access point for vehicles to utilize the service court. All exits are to be side street stop sign-controlled intersections with proper signage and striping for pedestrian crossings.

Drop-Off / Pickup General Procedures & Best Practices

An analysis was done for the student drop-off/pick-up operations for both the AM and midday peak periods, which are the times assumed for most student arrivals and departures. The majority of students is anticipated to arrive within a 20 minute period in the morning (7:25 – 7:45 AM) and will depart within a 30 minute period in the midday (3:20 – 3:50 PM). In total, there are 115 vehicle trips arriving for the queue in the morning and 59 vehicle trips arriving for the midday queue, including bus and shuttle trips.

The pick-up and drop-off "dwell time" includes the time it takes for a vehicle to enter a dedicated drop-off/pick-up space within the driveway arc and for children to safely enter or exit the vehicle. Conservative estimates for drop-off and pickup dwell times of 30 seconds in the morning and 60 seconds at midday were used in the analysis. These

estimates are longer than those typically used for middle-school age children who can keep themselves safe during drop-off and pickup and move efficiently to and from the school building. These longer durations tend to be used for evaluation for elementary-aged students due to time required to buckle car seats and load/unload. However, the longer durations were chosen to represent a conservative estimate in this study evaluation.

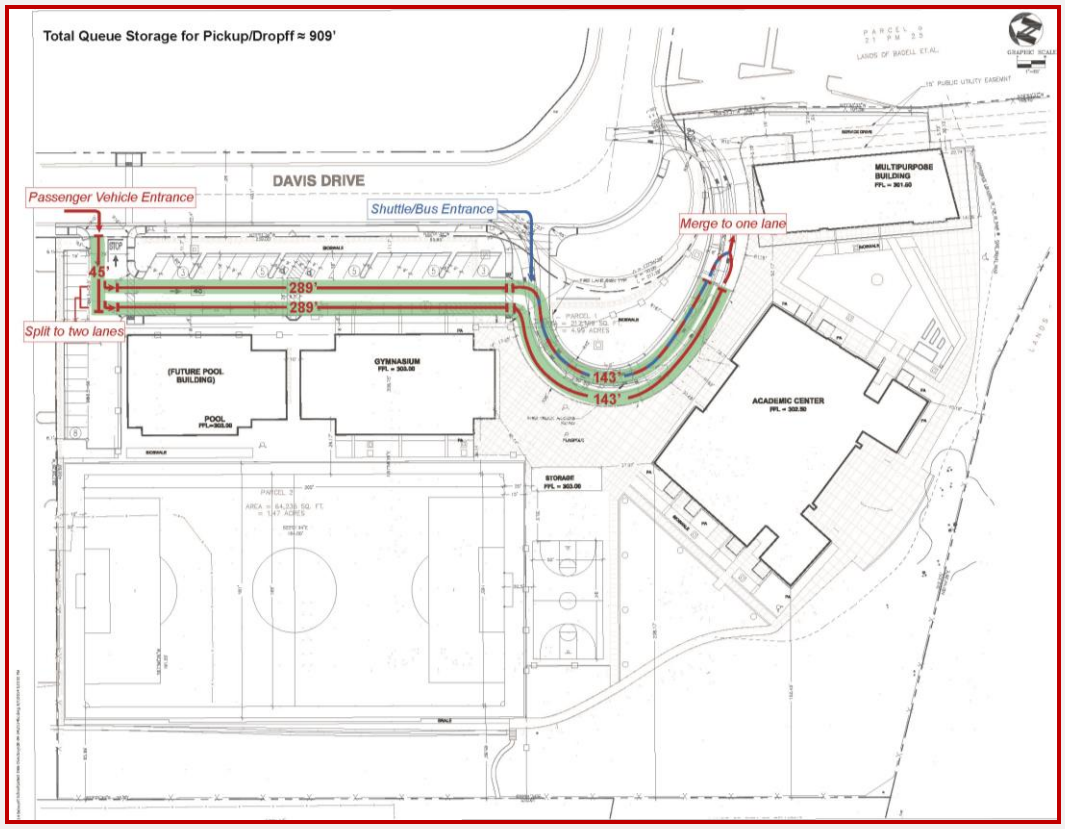
In the morning, it is estimated the arrival rate of drop-off time would be about 8 vehicles arriving every minute. In the midday, it is estimated the arrival rate of pickup time is about 2 vehicles arriving every minute. Given the dedicated curb storage of 909' (or conservatively 35 cars) from Davis Drive through the student drop-off / pickup area, the total queue in both the morning and midday would be fully accommodated on-site.

Upon entering for drop-off/pickup, all passenger vehicles would utilize the northern entrance and traffic would then split into two queuing lanes through the diagonal parking area adjacent to the proposed pool and gymnasium. The two lanes of traffic would be accommodated by converting the parallel parking spaces adjacent to the curb into a dedicated queuing lane during the drop-off and pickup periods of the day. The angled spaces are to be specifically dedicated as staff parking, which eliminates the need for parking turnover to occur as staff is to arrive prior to or after these periods.

The two lanes of traffic from the parking lot would feed into the drop-off/pick-up arc. At the front door to the Academic Center, four "spaces" (two per lane) will drop-off and pickup students simultaneously. It has not yet been determined if these "spaces" will be identified specifically through the use of a visual indicator, e.g. pavement legends, mascot logos, textured concrete. However, some form of indication will identify the area to be utilized specifically for unloading and loading students.

After accessing the dedicated spaces, exiting traffic would then merge back into one lane and exit onto Davis Drive. The merge will be facilitated by adequate pavement legends. Shuttles and buses are planned to enter directly into the traffic arc from the arc's entrance from Davis Drive and merge with the passenger vehicle traffic of the inside arc lane.

CSUS Site Plan and Student Drop-Off / Pickup Routes



Several best practice strategies will be employed by CSUS staff responsible for coordinating drop-off and pickup operations on-site. One such strategy is to develop a call-out system which staff can utilize to safely and efficiently guide students to their proper buses, shuttles, or passenger vehicles. Another strategy would be to inhibit students from walking through the queued lanes of vehicles outside of the designated drop-off/pickup area through the use of staff members standing on the periphery of the waiting area while students are coming in or out of the building. Details of the pickup and drop-off system will be defined closer to the opening of the school. The evaluation of the potential queuing is based on the assumption that a call-out/radio system to match the pickup vehicle with the student will be utilized. This will be located between the back of the line at the entry driveway and the pickup area adjacent to the Academic Center.

PARKING

On Site Parking

On-site parking is provided on the Project site. The site plan accommodates 50 parking spaces (two being ADA accessible), with 21 diagonal spaces, 15 perpendicular spaces, six spaces along the gymnasium building, and eight spaces along the student drop-off/pickup area.

The Project site will provide a combined entrance/exit for 15 ninety degree parking spaces on the northern end of the lot. To access the additional 35 (21 angled and 14 parallel) parking spaces adjacent to the Athletic Center, drivers must enter via the northerly driveway and exit to the south. Given the angled parking and lane width, vehicles will not be allowed to enter this section via the southern access point. Signage will be placed to indicate the one-directional (southerly) traffic flow on the western side of the parking lot containing the angled spaces. In addition, the signage will indicate that there shall be no parking turn-over of the angled spaces during drop-off and pickup procedures to accommodate the two-lane queue utilized during drop-off and pickup;the easiest way to facilitate this is to assign the spaces for faculty and staff use only.

Pedestrian Circulation

Drivers accessing the CSUS buildings from the angled parking stalls would utilize the two pedestrian crossing areas designated on the site plan. This is implemented as a safety measure as there may be higher volumes of traffic specifically using this portion of the lot. In addition, pedestrians accessing the school or gymnasium from Davis Drive may choose to traverse through the parking lot at these areas as it is the shortest walking path. The parking lot design indicates adequate pedestrian crossing pavement markings for pedestrian access to the parking lot. Pedestrian crossings will be striped at intersections which serve as vehicular access points for pedestrians to access the school from Ralston Avenue along Davis Drive.

Once users of CSUS are on-site it will be considered a pedestrian-only zone. That is, no external vehicles or bicyclists will be allowed on the internal pedestrian facilities. Internal pedestrian connections would link the multiple uses associated with the CSUS facility, such as the Academic Center, Science Court, playing fields, and gymnasium. These on-site elements will allow students, visitors, and faculty to conveniently walk from one destination to the next.

Sight Distances & Emergency Vehicle Access

Initial conversations with Emergency Fire Service providers has shown that they are more likely to setup their response equipment immediately adjacent to the school site on Davis Drive rather than to use the school arc for fire emergency response. Service and delivery vehicles would gain access and exit the site via Davis Drive and the southerly access point adjacent to the multi-purpose building. Sight distances, emergency vehicle and truck access, and on-site circulation planned for the Project appear to be adequate, and would be subject to refinements as part of the design review process.

TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

Overview

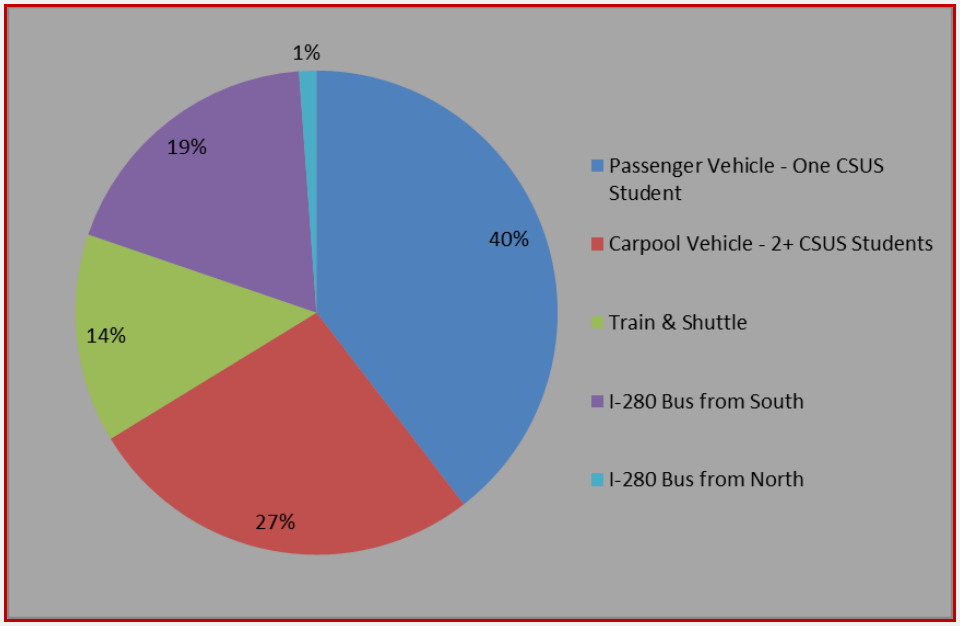
Crystal Springs Uplands School is committed to planning and implementing a trip reduction program. The TDM program will be refined over time to adapt to changing transportation trends and to maximize the efficiency and performance of the program. The TDM program will be comprised of three major elements: *Eduction, TDM Program Elements and Monitoring.* Measures that would be implemented as part of the TDM program include:

- Transportation management education for parents, faculty and staff;
- An on-site TDM outreach coordinator to help implement the plan and identify appropriate shuttle loading areas;
- Distribution of TDM program information to all CSUS families;
- On-site shuttle, Caltrain, and BART schedules;
- Use of the Highway 92 Park & Ride as a resource for ridesharing;
- Bicycle Parking – Bicycle parking will be provided for students, parents, faculty and visitors; and
- Incentives/Rewards Program – A program to reward participation in trip reduction practices will be developed to encourage students, parents, faculty, and staff to participate. Programs that have been successful for similar sized schools include classroom or grade level competitions, such as, cumulating points per day that an alternate mode was used, special bike and walk to school days, and raffle prizes per quarter/semester for participation. CSUS will customize a program that matches closely with the school's practices, curriculum, and community and modify to maximize participation in the TDM program.

CSUS Commute Survey

The trip generation estimates indicated in the TIA were developed based on the current travel patterns at the Hillsborough CSUS campus. A recent commute survey of CSUS middle school parents determined that nearly 30% of middle school students currently carpool to campus and that approximately 35% of them travel to campus by train/shuttle and bus. This information supports that there is an existing culture of trip reduction and alternative mode travel practices already ingrained in the CSUS parent and student groups. Further, when queried about how they would transport their students to a Belmont campus, 65% of respondents indicated that they would voluntarily utilize carpools, trains/shuttles, buses or local shuttles. Notwithstanding this high level of voluntary participation, CSUS intends to require as a condition of admission that all middle school families commit to support and participate in the trip reduction plan. The results of the internal survey of CSUS middle school students' current travel habits are included below.

Current CSUS Students' Commute Patterns



Education

Education focuses on awareness and communication to reduce drive-alone trips to the school by parents, faculty, and staff. Transportation Policy Materials will be prepared and provided to parents, faculty, and staff on commute options, drop-off and pickup procedures, on-site circulation, and visitor parking. Materials would include:

- "Transportation Policy Fact Sheet" for new and returning families describing the school's commitment to minimizing its traffic in Belmont.
- Summary of school transportation options available to students, faculty and staff.
- Reference to other important policies and sources of information.
- Rules of access for dropping off and picking up students on-site by automobile.
- Link to the school's Commute Options website.

The foregoing would be incorporated into a comprehensive "booklet" format to be included in the school's customary student information package. CSUS families also would be required to sign an agreement indicating that they understand, and will abide by, the requirements and programs presented in the school's Transportation Policies.

TDM Program Elements

CSUS will implement a comprehensive TDM program that will promote carpools, buses, and van shuttles in place of solo vehicle trips to and from the school. The buses and van shuttles will be provided at no additional cost to students.

Carpools

It is estimated that approximately 70 students will arrive at the Belmont campus via carpool. To achieve this level of carpool participation, CSUS would continue existing practices and implement additional efforts as follows:

- Provide a Transportation Coordinator on staff to assist families in finding an appropriate carpool partner. The Coordinator could contact new families during the summer to suggest possible carpool matches.
- CSUS currently publishes a map of the home location of all students for the use of CSUS families who want to arrange carpools. This practice would continue.

Trains/Shuttles

It is estimated that approximately 100 students will arrive at the Belmont campus via trains/shuttles, buses or local shuttles. The train/shuttle service is currently a popular mode of transportation at the Hillsborough campus. CSUS would continue to facilitate the use of this method of transit as follows:

- CSUS currently educates new families about how to use the existing train/shuttle service. The school disseminates the train and corresponding shuttle schedule and encourages the practice of all CSUS train riders congregating in the same train car so that older students can help younger ones. Parents are invited to

take the train along with their student on the first day of school and observe the shuttle operation from the train station to the campus. All of these education and facilitation practices would continue at the Belmont campus.

Currently, CSUS does not provide local shuttle service for any locations other than the train stations, however, shuttle service would be offered to the Belmont campus from several local shuttle pick up locations. While these locations will be based on the geographic distribution of CSUS families at the time the Belmont campus begins operation, some of the most likely locations are shown below:

- Hillsborough: Black Mountain Road and I-280 Park-and-Ride
- Hillsborough: Current CSUS Campus
- San Mateo: St. Bart's Church (Crystal Springs Road and Alameda)
- Burlingame: Near Broadway and El Camino (Stop TBD)
- Foster City: Stop TBD
- San Carlos: Stop TBD
- Belmont: Ralston Avenue at Highway-92 Park-and-Ride

Highway 280 Corridor Buses

The bus service currently provided by CSUS from the north and south on Highway 280 is a popular mode of transit for many students on the Hillsborough campus. The school would continue to educate prospective families about the availability of the Highway 280 corridor service. Current pickup locations for this bus service are listed below:

- (From the south)
    - I-280 and Foothill Expressway in Los Altos
    - Sharon Heights Shopping Center in Menlo Park
    - Woodside Road and Whiskey Hill Road in Woodside
- (From the north)
    - Colma BART station

The school would regularly assess the pick-up locations on both routes in order to maximize participation in this method of travel.

Monitoring

To ensure that the TDM program is working effectively and achieving its goals, and to be a good neighbor, CSUS will regularly monitor commute patterns and make adjustments to the TDM program as needed. TDM monitoring reports will be compiled that assess the efficacy of the TDM program at reducing vehicle trips and confirm that CSUS continues to implement a successful TDM program.

CSUS is committed to the following measures to support the monitoring efforts:

- Annual Survey of Commute Patterns – The school will survey incoming students/parents (all grades) on planned travel mode, to gauge the need for necessary measures to accommodate the upcoming school year.
- Annual Survey of Trip Generation – Traffic counts will be conducted annually at the project driveways to quantify school trip generation and measure the TDM's efficacy and performance. Traffic counts will be collected when the driving demand is typically at it greatest for the school.
- Annual Adjustments to Policies, Procedures, and TDM program (as needed) – CSUS will work with school administrators to make adjustments to the policies, procedures and TDM program to minimize trip generation. Adjustments will be completed and communicated prior to the start of the next school year if needed to reduce trips to the site.

Monitoring shall be conducted under a set of criteria that allows for a valid set of data to fairly assess the CSUS TDM program effectiveness. Such criteria will include:

- Traffic counts at the site will be conducted on an annual basis.
- Traffic counts will be conducted at the two exit points, at the north and south campus driveways, to the campus during the morning drop-off period.
- Drop-off period traffic counts will be performed between mid-October and mid-November. Counts should avoid days immediately before or after holidays or long weekends, and should not be performed on days of inclement weather conditions.
- Drop-off period traffic counts will be the average of at least three weekday counts (Tuesday, Wednesday or Thursday) taken over a two week period.
- If the annual traffic count shows that actual trips exceed a set trip threshold, CSUS will develop a plan to modify its transportation demand management measures within 90 days, in addition to the annual adjustments to the plan as indicated above. The plan shall be implemented within 90 days of its preparation. At the end of the 90 day implementation period, the applicant shall conduct supplemental traffic counts to confirm compliance with the trip count threshold.

ATTACHMENTS

- TRANSPORTATION POLICY FACT SHEET
- CSUS TRANSPORTATION POLICY AGREEMENT

Transportation Policy Fact Sheet
(to be distributed to CSUS middle school families)

CSUS is committed to an aggressive program of traffic management at our Belmont middle school campus. Many options exist for transporting a student to middle school other than alone in a single vehicle. Each middle school family is expected to assist in this important effort by assessing the various options available and participating in some form of traffic reduction effort if at all possible. Transportation options include the following:

- **Caltrain**—Students board the train at many stations along the Peninsula and sit together in one train car for the ride to the Belmont/Hillsdale train station where they are met by a CSUS shuttle that transports them to campus. Several shuttles leave campus periodically after school to take students back to the train station for the ride home.
- **CSUS 280 Corridor Bus**—A CSUS bus drives north along Highway 280 from a southernmost pick-up spot in Los Altos, with additional stops at Sharon Heights Shopping Center in Menlo Park and Town Hall Center in Woodside, to the middle school campus. The bus returns south along the same route in the afternoon. Another CSUS bus drives south along Highway 280 from a pickup spot at the Colma BART station to the middle school campus. The bus returns north along the same route in the afternoon.
- **CSUS Shuttles—**Shuttles pick-up students from the following sites and deliver them to the middle school campus:
    - Uplands campus
    - Ralston/Hwy 92 park and ride

- Black Mountain/Hwy 280 park and ride
- Burlingame Safeway parking lot

After school, the shuttles return the students to the same pick-up locations.

- **Carpools—**Families are encouraged to arrange carpools with other CSUS families in their area. To facilitate this effort, there is a map showing the location of all CSUS students on the parent portal of the school website. The school's Transportation Coordinator, _____, is available to assist families with carpool arrangements.

CSUS Transportation Policy Agreement

I, _____, the parent of CSUS middle school student _____ understand the importance of reducing traffic to the Belmont campus and agree to participate in traffic management and trip reduction measures to the extent possible.

Signed _____ Date _____

CSUS ACTIVITIES

CSUS Activities & Programs (Revised 1/15)				
Month	**Type of Day**	**Estimated Time**	**Activity/Program**	**Visitors**
June-July	Weekday	7:30 AM-4PM	Summer Programs	240 student drop-offs/pick-ups
June-July	Weekday	8:30 AM-5 PM	Faculty Professional Development (5 days)	25 teachers
August	Weekday	9-11 AM	Parent Orientation Breakfast	100 parents
August	Weeknight	6-9 PM	Parent Welcome Reception	100 parents
September	Weekday	11 AM-1 PM	Parent Luncheons (3)	60 parents at each
September	Weeknight	5:30-9 PM	Curriculum Night	300 parents
September	Weekday	2:30-4 PM	8th Grade Fundraiser	30 parents
September	Weeknight	4-9 PM	Board Meeting	30 parents
September	Weeknight	8-10 AM	Meeting	40 parents
October	Weeknight	6-9 PM	Fundraising Dinner	100 parents
October	Weekend day	8 AM-4PM	Club Activity/Competition	50 parents and students
October	Weekend day	9 AM-1 PM	Admission Open House	250 parents and students
October	Weeknight	7-10 PM	Dance	200 student drop-offs/pick-ups
November	Weekday	8 AM-4PM	Conference Day	50 parents at a time
November	Weekend night	6-10 PM	Parent/Child Social	200 parents and students
November	Weekend day	12-4 PM	Admission Open House	250 parents and students
November	Weeknight	7-10 PM	Middle School Play	150 parents and students
December	Weekend day	9 AM-12 PM	Admission Open House	250 parents and students
December	Weeknight	7-10 PM	Dance	200 student drop-offs/pick-ups
December	Weekend day	8 AM-12 PM	ISEE Testing	75 student drop-offs/pick-ups
December	Weeknight	6-9 PM	Diversity Potluck	30 parents and students
December	Weeknight	7-9 PM	Holiday Program	200 parents and students
January	Weekend day	8 AM-12 PM	ISEE Testing	75 student drop-offs/pick-ups
January	Weekday	8 AM-4PM	Friends and Family Day	200 adults
January	Weekend day	8 AM-12 PM	ISEE Testing	75 student drop-offs/pick-ups
January	Weeknight	6:30-8:30	Applicants of Color Event	40 parents and students
February	Weekend day	8 AM-4PM	Club Activity/Competition	50 parents and students
February	Weekend night	6-9 PM	Parent/Child Social	200 parents and students
February	Weeknight	6-8 PM	Travel Information Meeting	75 parents and students
February	Weekend night	7-9 PM	Middle School Social	200 student drop-offs/pick-ups
March	Weekday	4-6 PM	Board Meeting	30 parents
March	Weekday	8 AM-5 PM	Conference Day	50 parents at a time
April	Weeknight	6-8 PM	Student Projects	150 parents and students
April	Weeknight	6-8 PM	Travel Information Meeting	75 parents and students
April	Weeknight	6-9 PM	Admission Welcome Event	150 parents and students
April	Weeknight	7-9 PM	Spring Concert	250 parents and students
April	Weekday	9 AM-12 PM	Admission Tour	30 parents and students
May	Weekend day	8 AM-4PM	Club Activity/Competition	50 parents and students
May	Weeknight	6-8 PM	Travel Information Meeting	75 parents and students
May	Weekday	9 AM-12 PM	Admission Tour	30 parents and students
May	Weeknight	7-10 PM	Dance	200 student drop-offs/pick-ups
May	Weeknight	7-9 PM	Musical	250 parents and students
May	Weeknight	6-8 PM	Student Projects	150 parents and students
May	Weeknight	6:30-9 PM	Fundraising Dinner	25 parents
May	Weekday	4-6 PM	Board Meeting	30 parents
May	Weekday	8 AM-4PM	8th Grade Projects	20 parents at a time
June	Weekday	7-9 PM	8th Grade Awards/Graduation	250 parents, students, teachers

STUDENT QUEUE SUMMARY

Projected Queuing for Crystal Springs Uplands School

Assumptions:

Drop-Off

30 sec dwell
8 veh / min Capacity

Demand

AM - 7:30 - 7:45

115 veh

Assumes that all solo vehicles, carpools, one shuttle, and one bus will arrive in 15 mins. There is staff parking.

Total Arrival Time
15 min

Arrival Rate
7.67 veh / min

Unserved Rate (Arrival - Departure)
-0.33 veh / min

Queue:
0 veh
0 feet

Unserved Queue:
0

Pick-Up

60 sec dwell
4 veh / min Capacity

PM - 3:20 - 3:50

59 veh

Assumes that all solo, carpool, one shuttle, and one bus will arrive in 15 mins. There is staff parking.

Total Arrival Time
30 min

Arrival Rate
1.97 veh / min

Unserved Rate (Arrival - Departure)
-2.03 veh / min

Queue:
0 veh
0 feet

Queue Storage:
4 veh
909 feet
25 feet / veh

Kimley»Horn

3/19/2015