Salinas, California:

Salinas (Cloverfield) Retail Center Transportation Impact Analysis

Prepared for: Cloverfield Management, LLC

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Final Report

Salinas (Cloverfield) Retail Center
Transportation Impact Analysis

Prepared for:

Cloverfield Management, LLC
EMC Planning Group Inc.
and the
City of Salinas

Prepared by:

Fehr & Peers

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EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis (TIA) for the proposed 205,848 square foot (s.f.) Salinas retail center located at the northeast corner of East Boronda Road and San Juan Grade Road in Salinas, California.

The impacts of the proposed project to the surrounding transportation system were evaluated following the guidelines of the City of Salinas and Caltrans. The operations of 12 key intersections, four roadway segments and four freeway segments north and south of the US 101/Boronda Road interchange were evaluated with level of service calculations during the weekday evening (PM) and Saturday (SAT) peak period for Existing, Project, Cumulative Without Project, and Cumulative With Project Conditions. This study assumes that a minimal amount of traffic will be generated during the AM peak period and will not substantially affect the surrounding roadways. The Saturday mid-day analysis is presented as an informational scenario because this time period occurs once a week; rather, than a typical midweek (e.g., Tuesday through Thursday) PM peak hour that occurs three times a week.

SALINAS FUTURE GROWTH AREA NORTH OF BORONDA ROAD

The proposed project is consistent with the current General Plan land use and does not conflict with planned roadway improvements. The cumulative analysis conducted for the Cloverfield Retail Center considered approved and pending projects (i.e., projects with applications on file with the City). A focused General Plan AM and PM peak hour analysis was completed to determine if the planned intersection configuration at San Juan Grade Road and East Boronda Road could be modified to exclude a westbound right turn-lane (See **Appendix I**). The effects of long-range cumulative development associated with buildout of the future growth area north of East Boronda Road on the local and regional transportation facilities have been evaluated at the General Plan roadway segment level during the 2002 City General Plan update and the supplemental transportation analysis (see *Final Salinas Sphere of Influence Amendment and Annexation Supplemental TIA*, November 2007). The potential transportation impacts from the long-range cumulative development were also included in the Circulation Element update, environmental documents, and *City of Salinas Traffic Improvement Program* (updated March 2010). Separate environmental review will be conducted for individual specific plan proposed within the future growth area.

PROJECT TRIP ESTIMATES

The proposed project is estimated to generate 826 net new PM peak-hour trips (405 inbound and 421 outbound) and 1,096 net new SAT mid-day peak-hour trips (570 inbound and 526 outbound).

INTERSECTION IMPACTS AND MITIGATION

Project Conditions

The project would have a significant impact at the *East Boronda Road and San Juan Grade Road* intersection based on the existing lane configuration. Mitigation to reduce the project impact to ***less-than-significant*** requires the construction of a second eastbound left turn lane consistent with the City of Salinas Public Works Department active project (No. 9510) to construct double lefts on all approaches. Other secondary impacts will include tree removal, lengthening of crosswalks, and/or modification of signal phasing that could increase the pedestrian crossing distances/times at the intersection.

Mitigation of the significant operational impact for the southbound left-turn lane at the East Boronda Road and San Juan Grade Road intersection requires modification of the San Juan Grade Road and Mobile

Home Driveway intersection to right-in-right-out access only. This driveway modification would require a U-turn movement at the signalized intersections on San Juan Grade Road at both Northridge Drive and East Boronda Road. Under Project Conditions fewer than 10 vehicles make a northbound left into the mobile home driveway during the PM or SAT peak hours. And zero vehicles make an eastbound left turn from the mobile home driveway during the PM and SAT peak hours. The City of Salinas should continue to monitor this location and conduct an engineering study to evaluate the need for turn movement restrictions as appropriate to maintain acceptable intersection operations.

Cumulative With Project Conditions

The *Boronda Road and North Main Street* intersection would be ***less-than-significant*** with the following mitigation:

- Widen the eastbound approach to include a third eastbound through lane.
- Modify the signal timing to include a southbound right-turn overlap phase, which requires prohibition of eastbound u-turns.

In addition to the PM peak hour improvements listed above, the SAT peak hour also requires modification of the westbound shared through-right lane into an exclusive through lane and separate right-turn lane. Widening intersections and/or roadways for infrequent peak demand creates a vehicle oriented street system that increases the exposure of pedestrians and bicyclist to vehicle traffic. Thus, the Saturday peak hour mitigation is provided for informational purposes because this time period occurs less frequently than a typical mid-week PM peak hour.

Under both the PM and SAT peak hours, additional right-of-way may be needed, which would affect existing parking lots and landscape frontages on each corner. These improvements are not included in the Salinas *Traffic Improvement Program (TIP)*. Thus, payment of the city impact fee will not fulfill the project applicants obligations for mitigating this intersection impact to less-than-significant. However, the project applicant may either construct the physical improvements and enter into a reimbursement with the City or the City may update the Salinas *Traffic Improvement Program (TIP)* to include these improvements and payment of the updated city impact fee would fulfill the project applicants obligations for mitigating this cumulative intersection impact to less-than-significant. Unless other funding sources such as contributions from other developers, or city funds are made available, these roadway improvements will not be implemented, and this impact would be ***significant and unavoidable***.

The *East Boronda Road and San Juan Grade Road* intersection would be ***less-than-significant*** with the following mitigation:

- Widen each approach to include a second left-turn lane.

This mitigation is consistent with the City of Salinas Public Works Department active project (No. 9510) to construct double lefts on all approaches.

Mitigation of the significant operational impact for the southbound left-turn lane at the East Boronda Road and San Juan Grade Road intersection requires modification of the San Juan Grade Road and Mobile Home Driveway intersection to right-in-right-out access only. This driveway modification would require a U-turn movement at the signalized intersections on San Juan Grade Road at both Northridge Drive and East Boronda Road. Under Cumulative plus Project Conditions fewer than 10 vehicles make a northbound left into the mobile home driveway during the PM or SAT peak hours. And zero vehicles make an eastbound left turn from the mobile home driveway during the PM and SAT peak hours. The City of Salinas should continue to monitor this location and conduct an engineering study to evaluate the need for turn movement restrictions as appropriate to maintain acceptable intersection operations.

The *East Boronda Road and McKinnon Street* intersection would be ***less-than-significant*** with the following mitigation:

- Widen both the eastbound and westbound directions to provide a second through lane, which is currently being designed by City staff.

Secondary impacts with widening will include tree removal, lengthening of crosswalks, and/or modification of signal phasing that could increase the crossing distance/time for pedestrians.

The unsignalized East Boronda Road and Shopping Center Driveway (Walmart) intersection is expected to operate at unacceptable levels during the SAT peak hour. However, this intersection would not meet the Peak Hour Warrant for traffic signal installation during the peak hour.[1] Based on the impact criteria, the proposed project would have a **less-than-significant** impact at this study unsignalized intersection. The City of Salinas should continue to monitor this location and conduct an engineering study to evaluate the need for turn movement restrictions as appropriate to maintain acceptable intersection operations. Under Cumulative plus Project Conditions fewer than 30 vehicles make a northbound left from the shopping center driveway to East Boronda Road during the PM or SAT peak hours.

ROADWAY SEGMENT IMPACTS AND MITIGATION

Project Conditions and Cumulative with Project Conditions

East Boronda Road between McKinnon Street and Natividad Road – This roadway segment requires widening to a 4-lane arterial to provide acceptable operations (LOS D) and mitigate the impact to ***less-than-significant***.

FREEWAY MAINLINE SEGMENT IMPACTS AND MITIGATION

Project Conditions and Cumulative with Project Conditions

The results of the freeway level of service analysis indicate that the proposed project would create a **significant impact** on the following mixed-flow freeway segments during the PM peak hour:

- US 101 between Laurel Drive and Boronda Road
- US 101 between Boronda Road and Russell Road

The widening of US 101 to 6-lanes between the new Russell Road interchange and Harris Road (*City of Salinas Traffic Improvement Program* Project Number 32) would mitigate the project's impact. The TAMC regional project list does not include the widening of US 101 through the City of Salinas in the regional transportation impact fee, nor does the *2010 Monterey County Constrained Regional Transportation Plan*. Unless completely funded with appropriate agreements to implement the feasible roadway improvements discussed above the impacts would be ***significant and unavoidable***. This conclusion is consistent with the significant and unavoidable impacts identified in the *Final Supplement for the Salinas General Plan Final Program Environmental Impact Report* (2007) for these two US 101 mainline segments. As

[1] The use of peak-hour signal warrants is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. The traffic analysis presented in the document estimates future development-generated traffic compared against a sub-set (peak-hour warrant) of the standard traffic signal warrants recommended in the Manual of Uniform Traffic Control Devices (MUTCD), Federal Highway Administration 2000 and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely on the warrants because the installation of signals can lead to certain types of collisions. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data and conduct a timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

mentioned previously, the proposed project is consistent with land use designations contained in the 2002 General Plan, which were used as a basis for projecting traffic impacts identified in the *Final Supplement for the Salinas General Plan Final Program Environmental Impact Report* (2007). The City made a statement of overriding consideration for these impacts. This conclusion is discussed further in the California Environmental Quality Act (CEQA) documentation for this proposed project.

PEDESTRIAN, BICYCLE, AND TRANSIT IMPACTS AND MITIGATION

Crosswalks will be provided at the signalized driveways of San Juan Grade Road/Northridge Way and East Boronda Road/Dartmouth Way. Access to the project site will be connected from the sidewalk via a short pedestrian path near the Lowe's Home Improvement loading area. A pedestrian path from the East Boronda Road sidewalk to the Lowe's main building entrance will provide a direct connection through the parking lot. Thus, the existing and proposed pedestrian facilities can reasonably accommodate the increased demand and the newly constructed pedestrian facilities will not conflict with planned facilities; therefore, ***less-than-significant*** pedestrian facility impacts are anticipated.

Existing bicycle facilities can accommodate increased demand, and the proposed project will not conflict with existing or planned bicycle facilities. Thus, the project's impacts to the bike facilities are **less-than-significant**. The project should provide bike parking on-site and in highly visible locations to encourage biking and discourage theft.

The project site plan identifies two proposed bus stop locations to accommodate the potential transit ridership demand. No other modification and/or enhancement are identified that conflicts with the existing transit system or planned transit system, hence the proposed project will have a ***less-than-significant*** impact on transit facilities.

SITE ACCESS AND ON-SITE CIRCULATION RECOMMENDATIONS

Primary and secondary access to the site will be provided via driveways on San Juan Grade Road and East Boronda Road. If the main driveways experience significant congestion, the other driveways provide secondary ingress and egress to the site. The site access and on-site circulation is considered adequate with the following recommendations:

Vehicular Access and Circulation

Recommendation 1 - The site plan shows a four legged uncontrolled junction immediately north of the right-in & right out project driveway on East Boronda Road. It is recommended that the uncontrolled junction be reconfigured by removing the east access to Buildings R1 and J1 and removing the west access to buildings R2 and R3. This modification would allow for additional parking spaces.

Recommendation 2 - Reconfigure the north leg of East Boronda Road/Dartmouth Way by removing the inbound left turn lane and extending the outbound left turn lane to provide greater queue storage at the signal to minimize spillback into the parking aisles.

Pedestrian Access and Circulation

Recommendation 3 - All sidewalks both on-site and along the project frontage should be a minimum of eight feet in width.

Recommendation 4 - The pedestrian crossings on-site should have similar crossing treatments.

Bicycle Access and Circulation

Recommendation 5 - Bicycle parking should be provided near the entrances of each building (A1, J1, R1, R2, R3, and P1). The bicycle racks and/or lockers on-site should be placed in highly visible locations to encourage bicycling and discourage theft.

1. INTRODUCTION

This report presents the results of the transportation impact analysis (TIA) for the proposed Salinas retail center located at the northeast corner of East Boronda Road and San Juan Grade Road in Salinas, California. The proposed retail development includes a 120,944- square foot (s.f.) home improvement store with a 31,384 s.f. garden center plus up to 53,520 s.f. of retail outparcels that may include fast food and quality dining uses along the site's street frontage. For orientation purposes, Boronda Road is considered an east-west roadway, while US 101, Main Street and San Juan Grade Road are considered north-south facilities.

The analysis was conducted to identify potential effects of the proposed project on the surrounding transportation system and to recommend appropriate improvements to mitigate any significant impacts. Figure 1 presents the project location, surrounding roadway system, and study intersections. The proposed site plan is shown on Figure 2.

Transportation impacts were estimated following the guidelines of the City of Salinas and incorporate guidelines from Caltrans, and the Transportation Agency for Monterey County (TAMC) as needed. The analysis evaluated the operations of the following twelve (12) key intersections:

1. Russell Road and Van Buren Avenue
2. Russell Road and San Juan Grade Road
3. San Juan Grade Road and Van Buren Avenue
4. San Juan Grade Road and Northridge Way
5. San Juan Grade Road and Mobile Home Driveway
6. Boronda Road and US 101 Southbound Ramps
7. Boronda Road and US 101 Northbound Ramps
8. Boronda Road and Main Street
9. East Boronda Road and San Juan Grade Road
10. East Boronda Road and Driveway 1 (near Home Depot driveway)
11. East Boronda Road and Driveway 2 (Dartmouth Way)
12. East Boronda Road and McKinnon Street

Two-way directional roadway segments were analyzed during the weekday PM and Saturday midday peak hours at the following street segments:

1. Boronda Road between McKinnon Street and El Dorado Drive
2. Boronda Road between El Dorado Drive and Natividad Road

The operations of the study intersections and roadway segments were evaluated during the weekday afternoon (4:00 to 6:00 PM) and Saturday midday (11:00 AM to 1:00 PM) peak periods for:

Scenario 1: *Existing Conditions* – Existing volumes obtained from turning movement counts representing the peak one-hour vehicle flow.

Scenario 2: *Project Conditions* – Existing peak-hour traffic volumes plus the net new traffic generated by the proposed project.

Scenario 3: *Cumulative Without Project Conditions* – Existing peak-hour volumes plus traffic from approved but not yet constructed or occupied developments, and pending projects in the area.

Scenario 4: *Cumulative With Project Conditions* – Cumulative Without Project (Scenario 3) volumes plus net new traffic generated by the proposed project.

While the project will generate some traffic during the AM peak period, the highest volumes will be generated during the weekday PM and Saturday midday hours. Thus, this analysis focused on these latter periods. The Saturday mid-day analysis is presented as an informational scenario because this time period occurs once a week; rather, than a typical midweek (e.g., Tuesday through Thursday) PM peak hour that occurs three times a week.

The freeway mainline was analyzed during the PM peak period at:

1. US 101 between Laurel Drive and Boronda Road
2. US 101 between Boronda Road and Russell Road

On-site vehicle circulation, site access, and parking were reviewed and compared to industry design standards and City code requirements where applicable. The effect of the project on existing and proposed bicycle, pedestrian, and transit facilities and services was also assessed.

The remainder of this report is divided into five chapters. The existing transportation system serving the site and the current operating conditions of the study intersections, roadway segments and freeway segments are described in Chapter 2. Chapter 3 describes Project Conditions, including the method used to estimate the amount of project traffic added to the surrounding roadways and its impact on the transportation system. This chapter also includes a discussion of site access, on-site circulation, and parking. Cumulative scenarios with and without the proposed project are discussed in Chapter 4. Chapter 5 presents the Boronda Road progression analysis.

SALINAS FUTURE GROWTH AREA NORTH OF BORONDA ROAD

The proposed project is consistent with the current General Plan land use and does not conflict with planned roadway improvements. The cumulative analysis conducted for the Cloverfield Retail Center considered approved and pending projects (i.e., projects with applications on file with the City). A focused General Plan AM and PM peak hour analysis was completed to determine if the planned intersection configuration at San Juan Grade Road and East Boronda Road could be modified to exclude a westbound right turn-lane (See **Appendix I**). The effects of long-range cumulative development associated with buildout of the future growth area north of East Boronda Road on the local and regional transportation facilities have been evaluated at the General Plan roadway segment level during the 2002 City General Plan update and the supplemental transportation analysis (see *Final Salinas Sphere of Influence Amendment and Annexation Supplemental TIA*, November 2007). The potential transportation impacts from the long-range cumulative development were also included in the Circulation Element update, environmental documents, and *City of Salinas Traffic Improvement Program* (updated March 2010). Separate environmental review will be conducted for individual specific plan proposed within the future growth area.

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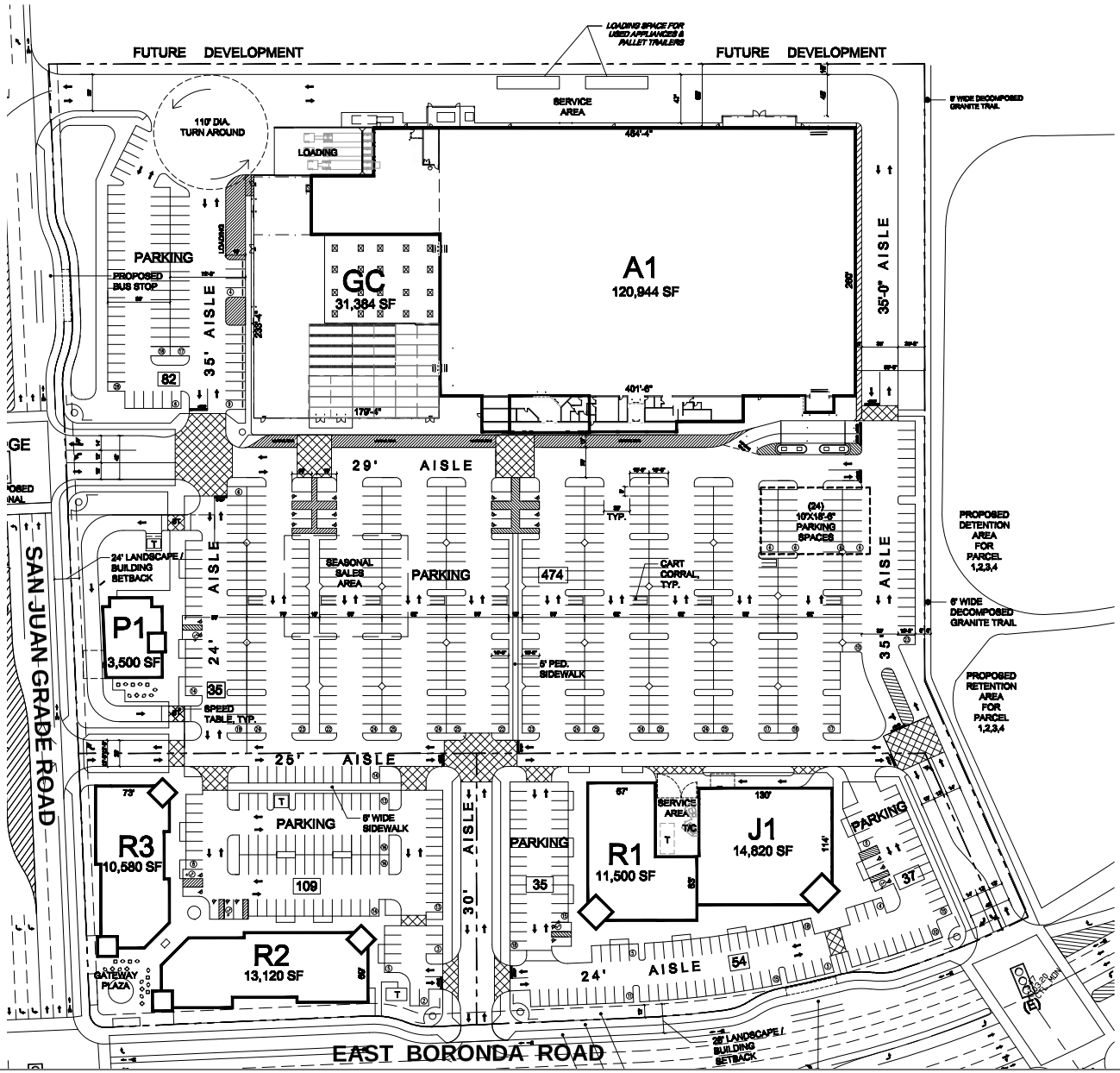
Project Location and Study Locations

Figure 1



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Site Plan

Figure 2

2. EXISTING CONDITIONS

This chapter describes the existing conditions of the roadway facilities, pedestrian and bicycle facilities, transit service, traffic volumes, and intersection operations within the study area. This chapter also includes a discussion of the method used to quantify intersection operations and the corresponding results.

EXISTING ROADWAY NETWORK

Regional access to the project site is provided by US 101. Local access to the site is provided by Russell Road, Boronda Road Harden Parkway, Alvin Drive, Main Street, San Juan Grade Road, Van Buren Avenue, Dartmouth Way and McKinnon Street. This section describes the existing roadway network, which is illustrated on Figure 1.

North/South Local Roadways

US 101 is a north-south, four-lane freeway extending through the City of Salinas. Except for Russell Road, the intersection of US 101 and major roadways in Salinas are either an interchange or grade separated overpass. US 101 is a four-lane divided highway with a three beam median barrier through Salinas, and a multilane highway immediately north and south of Salinas.

North Main Street is four-lane major arterial south of its intersection with US 101. North of US 101, North Main Street is generally a six-lane divided arterial roadway that intersects East Laurel Drive, San Juan Grade Road, East Boronda Road, and Russell Road with posted speed limits from 35 to 45 mph. North of Boronda Road, N. Main Street is a four-lane major arterial with a center two-way-left-turn-lane. From Market Street to US 101, N. Main Street is designated SR 183. South of Market Street, N. Main Street splits into a one-way couplet (Salinas Street southbound and Monterey Street northbound) until John Street, at which point it becomes S. Main Street. From Blanco Road to John Street, S. Main Street is designated SR 68. Major intersections are controlled by traffic signals.

Van Buren Avenue is a two-lane collector that connects Russell Road and San Juan Grade Road. The posted speed limit is 25 mph.

San Juan Grade Road is a four-lane divided major arterial that runs northeasterly from N. Main Street to East Boronda Road. Leaving the city limits north of East Boronda Road, San Juan Grade Road narrows to a two-lane rural road. San Juan Grade Road passes west of the project site as a two-lane rural roadway and intersects Russell Road, and Rogge Road. The posted speed limit ranges from 35 to 55 mph.

Dartmouth Way is a two-lane local street with a posted speed limit of 25 mph. Posted signs and fencing across Dartmouth Way prevents a vehicle connection with Pennsylvania Drive.

McKinnon Street is a two-lane collector with bicycle lanes that connects with Boronda Road and Alvin Drive. The posted speed limit is 35 mph.

El Dorado Drive is a two-lane collector with bicycle lanes that connects with Boronda Road and Alvin Drive. The posted speed limit is 25 mph.

Natividad Road is a six-lane divided major arterial from East Laurel to East Boronda Road. A portion of Natividad Road, between East Boronda Road and Los Coches Drive, has sound walls on each side of the roadway with a posted speed limit of 45 mph. Natividad Road is a two-lane rural roadway north of East Boronda Road. South of East Bernal Drive, this road is known as Sherwood Drive, a 4-lane arterial.

East/West Local Roadways

Russell Road begins at the Espinosa Road/Russell Road interchange with US 101 and proceeds east to San Juan Grade Road as a two-lane roadway. The posted speed limit ranges from 35 to 45 mph.

Boronda Road begins at the Boronda Road interchange with US 101 as a six-lane major arterial to North Main Street. East of North Main Street, Boronda Road narrows to a four-lane major arterial to San Juan Grade Road. Boronda Road narrows to a two-lane roadway and terminates at Williams Road. Boronda Road intersects all major and minor north-south arterials described above. These major intersections are controlled by traffic signals. East Boronda Road passes to the south of the project site and has a posted speed limit of 45 mph. Boronda Road is a General Plan designated truck route along its entire length.

Harden Parkway is a four-lane divided arterial with bicycle lanes that connects with N. Main Street and El Dorado Drive. The posted speed limit is 35 mph. East of N. Main Street, this road is known as Madrid Street, a 4-lane arterial.

EXISTING PEDESTRIAN FACILITIES

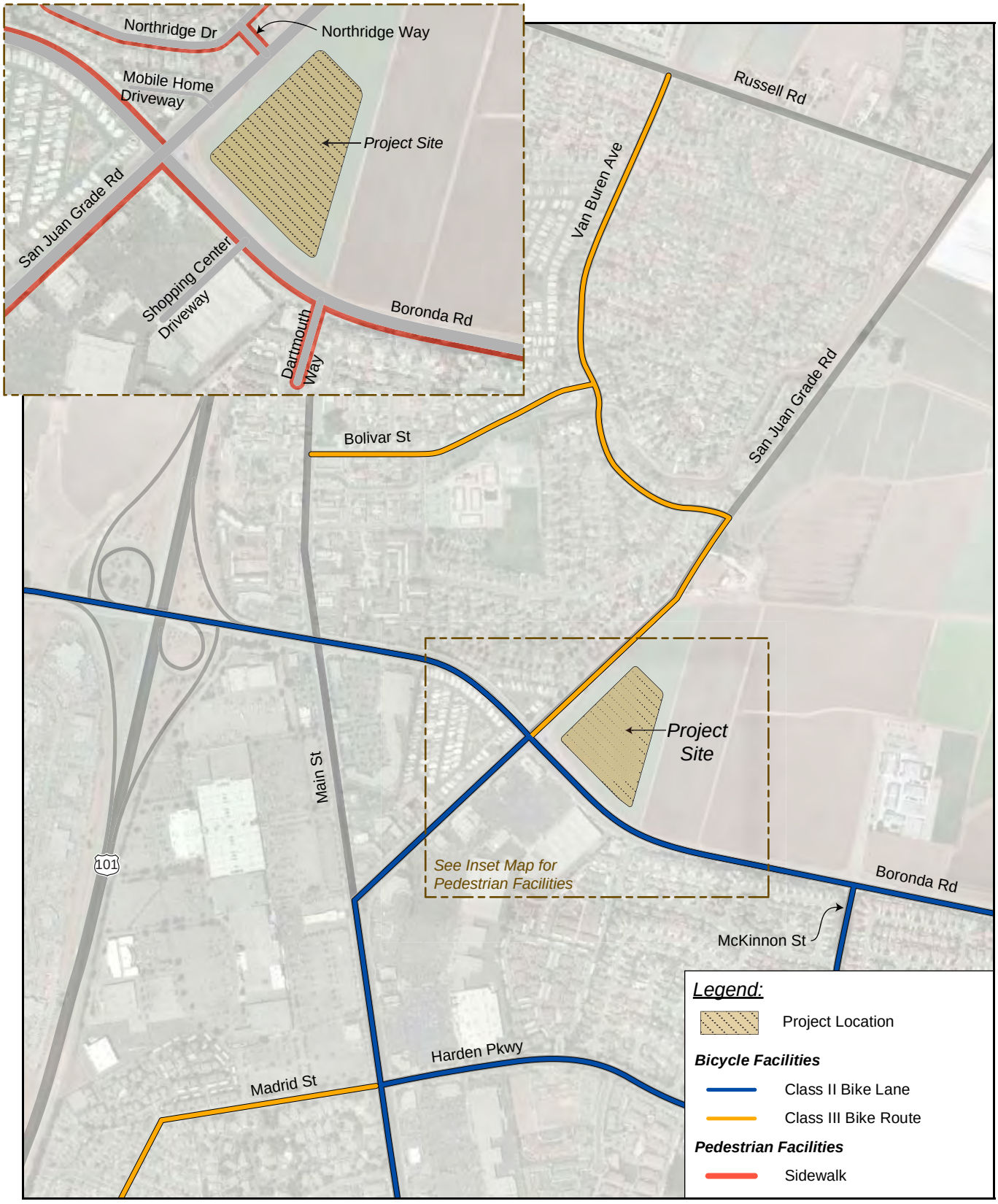
Pedestrian facilities comprise sidewalks, curb ramps, crosswalks, and off-street paths that are meant to provide safe and convenient routes for pedestrians to access destinations such as institutions, businesses, public transportation, and recreation facilities. Pedestrian facilities are typically identified in the jurisdiction's General Plan as part of the transportation or circulation element, along with any proposed improvements or extensions to the existing pedestrian network. The City of Salinas Circulation Element Goal C-5 defines policies and programs relating to walking in the City. Figure 3 shows the existing pedestrian facilities near the project site.

Crosswalks are not provided at the west leg of the intersection of San Juan Grade Road and Van Buren Avenue. Other study intersections provide crosswalks across most legs of the signalized intersections. Sidewalk facilities are provided on the following roadway segments near the project site:

- Southside of East Boronda Road between San Juan Grade Road and Natividad Road
- Northside of East Boronda Road between N. Main Street and San Juan Grade Road
- East Boronda Road between US 101 and N. Main Street
- San Juan Grade Road between N. Main Street and East Boronda Road except the westside along the existing mobile home park
- Van Buren Avenue
- Dartmouth Way

EXISTING BICYCLE FACILITIES

Bicycle facilities comprise paths (Class I), lanes (Class II), and routes (Class III). Bicycle paths are paved trails that are separate from roadways. Bicycle lanes are separate areas on roadways designated for bicycle use by striping, pavement legends, and signs. Bicycle routes are roadways designated for bicycle use by signs only, but may not include substantial width for bicycle travel. Like pedestrian facilities, bicycle networks are typically included in the General Plan, along with any proposed improvements or extensions. The City of Salinas Circulation Element Goal C-4 defines policies and programs relating to walking in the City. Figure 3 shows the existing bicycle facilities near the project site.



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Existing Bicycle and Pedestrian Facilities

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Figure 3

EXISTING TRANSIT FACILITIES

Monterey-Salinas Transit (MST) provides fixed-route bus service in Monterey County and in the City of Salinas. As shown in Figure 4, the only bus route along the project frontage is Route 45: East Market Creekbridge. Near the study area, Route 45 has a bus stop on Boronda Road at the driveway to the Harden Ranch Plaza near Dartmouth Way. The Northridge Mall transit center is more than one-half a mile walking distance (measured from center of project site to transit center) from the project site. Table 1 summarizes hours of operation and service frequencies for the bus routes that stop near the site.

TABLE 1
EXISTING TRANSIT SERVICE

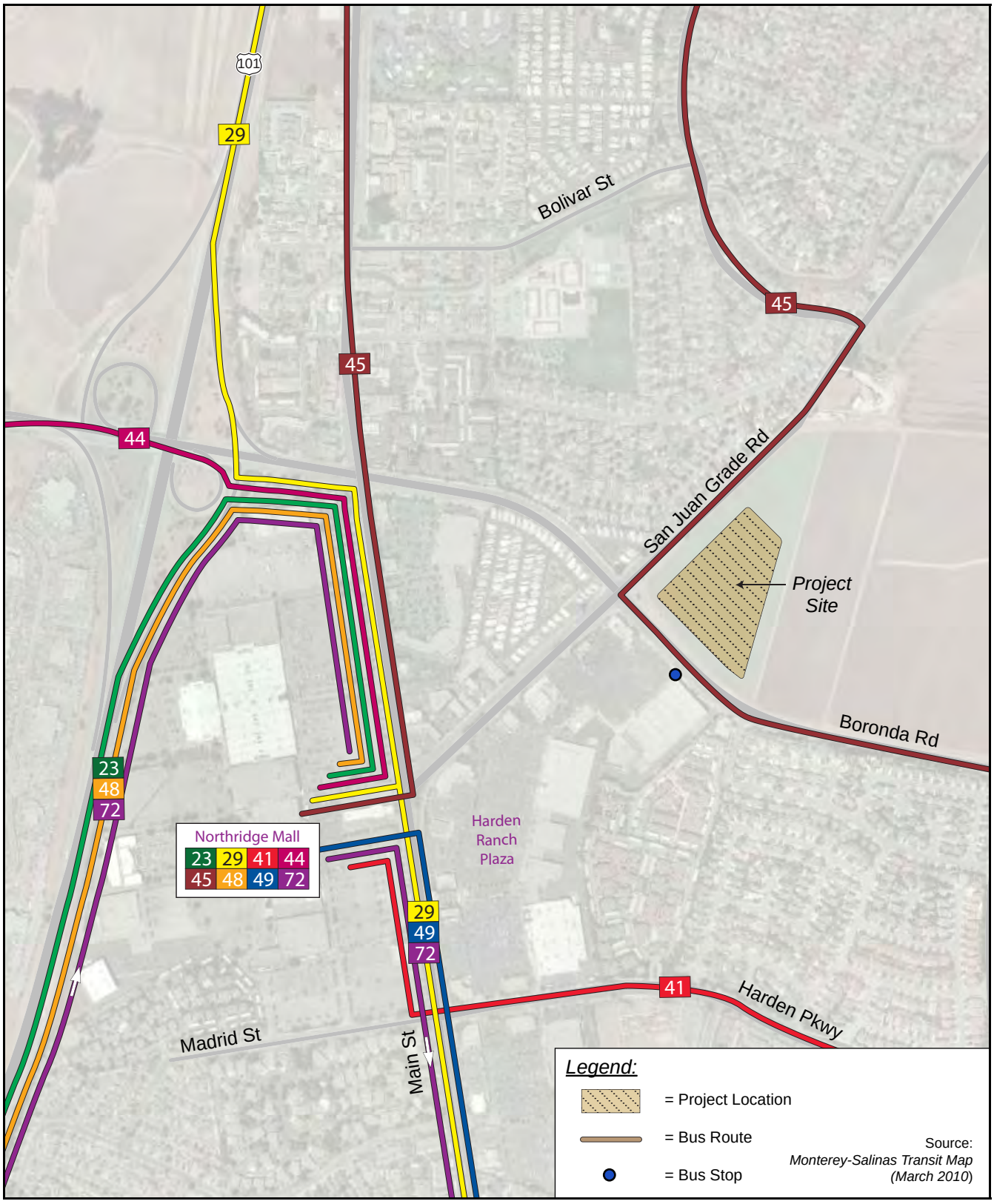
Route	From	To	Weekday and Saturday Operating Hours	Commute Headway[1]
Service to Project Site				
45	Salinas Transit Center	Northridge Mall	6:45 AM – 7:00 PM	60 minutes
Service near the Project Site				
23	Salinas Transit Center	King City	Weekend Service Only 10:00 AM – 6:00 PM	120 minutes
29	Salinas Transit Center	Watsonville Transit Center	7:00 AM – 7:15 PM	60 minutes
41	Salinas Transit Center	Northridge Mall	5:25 AM – 8:25 PM	30 minutes
44	Salinas Transit Center	Northridge Mall	7:40 AM – 6:40 PM	60 minutes
48	Northridge Mall	Salinas Airport Business Center	Special Service	60 minutes
49	Salinas Transit Center	Northridge Mall	6:15 AM – 10:00 PM	60 minutes
72	Salinas Transit Center	Monterey	Weekday Service Only 6:20 AM and 5:45 PM	

[1] Commute headway during PM (4:00 to 6:00 PM) and SAT (11:00AM to 1:00PM) peak periods.
Source: Monterey Salinas Transit, March 2010.

EXISTING VOLUMES AND LANE CONFIGURATIONS

The operations of the key intersections were evaluated during the weekday PM and Saturday peak periods. Intersection operations were evaluated using the highest one-hour volume counted between the peak 4:00 and 6:00 PM weekday, and 11:00 AM and 1:00 PM Saturday peak commute period. Intersection turning movement counts were conducted in February and March 2010. The traffic counts are included in Appendix A.

Figure 5 presents the existing PM and Saturday peak-hour turning movement volumes at the study intersections. Figure 5 also includes the existing intersection lane configurations and traffic control devices.



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Existing Transit Facilities

Figure 4

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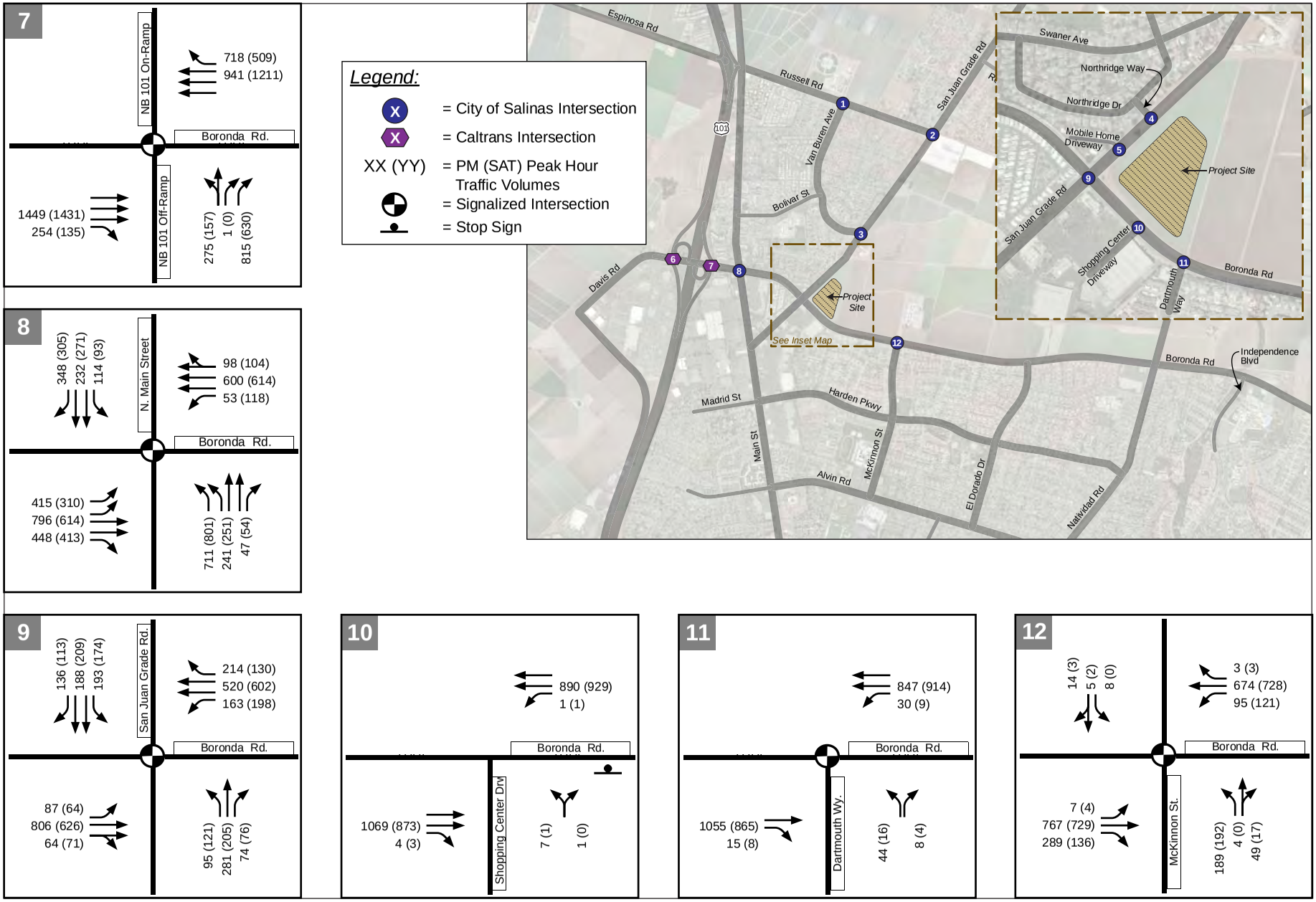
Existing Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 5A



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Existing Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 5B

Level of Service Methods

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

Signalized Intersections

The LOS method for signalized intersections approved by the City of Salinas analyzes intersection operations based on average control vehicular delay, as described in Chapter 16 of the *2000 Highway Capacity Manual* (*HCM*) by the Transportation Research Board. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using Synchro analysis software and is correlated to a LOS designation as shown in Table 2.

The level of service standard (i.e., minimum acceptable operations) for signalized intersections in the City of Salinas is LOS D. The same operations methodology is used by Caltrans to analyze traffic impacts for their facilities. Caltrans' level of service standard, *Guide for the Preparation of Traffic Impact Studies* (December 2002), for signalized intersections is LOS C.

TABLE 2
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS USING AVERAGE CONTROL VEHICULAR DELAY

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	> 10.0 and ≤ 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 and ≤ 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 and ≤ 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 and ≤ 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Unsignalized Intersections

Operations of the unsignalized study intersections (e.g., stop-sign controlled) were evaluated using the methodology contained in Chapter 17 of the *2000 HCM* and calculated using the Synchro analysis software. LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street-stop controlled intersections, control delay is

calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, control delay is computed as the average of all movements in that lane. For all-way stop-controlled locations, a weighted average delay for the entire intersection is presented. Table 3 summarizes the relationship between delay and LOS for unsignalized intersections.

The minimum acceptable LOS for all-way stop controlled intersections in the City of Salinas is LOS D and for two-way stop controlled intersections; the minimum acceptable LOS for the worst approach is LOS E.

TABLE 3
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delays.	10.1 to 15.0
C	Average traffic delays.	15.1 to 25.0
D	Long traffic delays.	25.1 to 35.0
E	Very long traffic delays.	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded.	> 50.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

Local Roadway Segments

Roadways in Salinas were evaluated using the level of service methodology described in the *2002 Salinas General Plan*, which is the comparison of the peak volume to threshold volumes for various roadway types presented in Table 4. The City of Salinas roadway segment standard (i.e., minimum acceptable LOS) is LOS D.

TABLE 4
LEVEL OF SERVICE THRESHOLD VOLUMES FOR VARIOUS ROADWAY TYPES

Roadway Type	Maximum Peak Hour Volume (both directions)				
	LOS A	LOS B	LOS C	LOS D	LOS E
6-Lane Divided Arterial (w/ left-turn lanes)	3,200	3,800	4,300	4,900	5,400
4-Lane Divided Arterial (w/ left-turn lane)	2,200	2,500	2,900	3,250	3,600
4-Lane Undivided Arterial (no left-turn lane)	1,600	1,900	2,200	2,400	2,700
2-Lane Arterial (with left-turn lane)	1,100	1,250	1,450	1,600	1,800

Notes:
[1] Non-directional peak hour traffic volumes are assumed to be 10% of the daily traffic volume. Directional split is assumed 60/40. All volumes are approximate and assume ideal roadway characteristics.

Source: City of Salinas, *Salinas General Plan*, 2002.

Freeway Mainline Segments

Freeway mainline segments were evaluated using the methods presented in Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002). This method was used for US 101 mainline segments north and south of the US 101/Boronda Road interchange during the PM peak hour. Caltrans' analysis procedure is based on the density of the traffic flow using methods described in the *2000 HCM*. Density is expressed in vehicles per mile per lane (veh/mi/ln). Table 5 presents the range of densities for freeway mainline segment levels of service. Caltrans' level of service standard is LOS C.

TABLE 5
DENSITY-BASED FREEWAY LEVEL OF SERVICE DEFINITIONS

Level of Service	Mainline Density[1]
A	≤ 11.0
B	11.1 to 18.0
C	18.1 to 26.0
D	26.1 to 35.0
E	35.1 to 45.0
F	> 45.0

Note:
[1] Measured in vehicles per mile per lane (veh/mi/ln).
Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

EXISTING INTERSECTION LEVELS OF SERVICE

Existing intersection lane configurations, signal timings, and peak-hour turning movement traffic volumes were used to determine the existing levels of service. The results of the LOS analysis are presented in Table 6. **Appendix B** contains the corresponding calculation sheets.

Measured against the City of Salinas level of service standard, all signalized (LOS D or better) and unsignalized (LOS E or better) study intersections operate at an acceptable level of service during both peak hours under Existing Conditions.

Measured against Caltrans level of service standard, the signalized (LOS C or better) US 101 ramp intersections with Boronda Road operate at an acceptable level of service during both of the peak hours under Existing Conditions.

TABLE 6
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour[1]	Count Date	Intersection Control	Delay[2]	LOS[3]
1. Russell Road / Van Buren Avenue	PM SAT	02/2010 03/2010	Signal	12.9 12.9	B B
2. Russell Road / San Juan Grade Road	PM SAT	02/2010 03/2010	Signal	15.6 11.0	B B
3. San Juan Grade Road / Van Buren Avenue	PM SAT	02/2010 03/2010	Side-Street Stop	12.5 12.4	B B
4. San Juan Grade Road / Northridge Way	PM SAT	02/2010 03/2010	Side-Street Stop	13.2 12.3	B B
5. San Juan Grade Road / Mobile Home Driveway	PM SAT	02/2010 03/2010	Side-Street Stop	12.1 8.5	B A
6. Boronda Road / SB US 101 Ramps	PM SAT	02/2010 03/2010	Signal	12.1 11.1	B B
7. Boronda Road / NB US 101 Ramps	PM SAT	02/2010 03/2010	Signal	13.3 10.9	B[4] B[4]
8. Boronda Road / N. Main Street	PM SAT	02/2010 03/2010	Signal	42.9 46.9	D D
9. East Boronda Road / San Juan Grade Road	PM SAT	02/2010 03/2010	Signal	42.3 38.5	D D
10. East Boronda Road /Driveway 1 (former Home Depot Driveway)	PM SAT	02/2010 03/2010	Side-Street Stop	21.9 18.8	C C
11. East Boronda Road / Dartmouth Way	PM SAT	02/2010 03/2010	Signal	11.0 5.4	B A
12. East Boronda Road /McKinnon Street	PM SAT	02/2010 03/2010	Signal	24.3 25.7	C C

Notes:

[1] PM = evening weekday peak-hour, SAT = Saturday peak hour.

[2] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop intersections using methodology described in the 2000 *Highway Capacity Manual*. For two-way stop controlled unsignalized intersections, total control delay for the worst movement, expressed in seconds per vehicle, is presented. LOS calculations conducted using the Synchro level of service analysis software package.

[3] LOS = Level of service

[4] Observations at the Boronda Road and Northbound US 101 Ramps intersection indicate that the greater lane utilization of the eastbound curb lane queues to the adjacent intersection ramp (US 101 southbound) during the PM and SAT peak hour. This condition can result in calculated operations that are better than those observed in the field.

Bold text indicates unacceptable operations by jurisdiction standards (LOS E or worse in City of Salinas, and LOS D or worse for Caltrans intersections).

Source: Fehr & Peers, October 2010.

EXISTING ROADWAY SEGMENT LEVELS OF SERVICE

The results of the City of Salinas roadway segment analysis are presented in Table 7.

TABLE 7
EXISTING LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	Peak Hour[1]	Count Date	Volume[2]	LOS[3]
East Boronda Road between McKinnon Street and El Dorado Drive	2-Lane Arterial	PM SAT	02/2010 03/2010	1492 **1615**	D **E**
East Boronda Road between El Dorado Drive and Natividad Road	2-Lane Arterial	PM SAT	02/2010 03/2010	1526 1448	D C

Notes:
1 PM = evening weekday peak-hour, SAT = Saturday peak hour.
2 ADT = Average two-way daily traffic.
3 LOS = Level of service.
Bold text indicates unacceptable operations by City of Salinas LOS standards (LOS E or worse).
Source: Fehr & Peers, October 2010.

Measured against the City of Salinas level of service standard, all local roadway segments operate at an acceptable level of service (LOS D or better) under Existing Conditions except East Boronda Road between McKinnon Street and El Dorado Drive during the Saturday midday peak hour.

EXISTING FREEWAY MAINLINE LEVELS OF SERVICE

The results of the US 101 freeway mainline analysis are presented in Tables 8. The corresponding level of service calculation sheets are contained in **Appendix C**.

TABLE 8
EXISTING US 101 FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Count Date[1]	Density[2]	LOS[3, 4]
Southbound	Russell Road to Boronda Road	PM	02/2010	**>45.0**	**F**
	Boronda Road to Laurel Drive	PM	Balanced	**39.5**	**E**
Northbound	Laurel Drive to Boronda Road	PM	Balanced	**38.6**	**E**
	Boronda Road to Russell Road	PM	02/2010	**36.4**	**E**

Notes:
1. Balanced counts derived from Boronda Road ramp volumes and freeway mainline count.
2. Measured in vehicles per mile per lane (veh/mi/ln).
3. LOS = Level of Service.
4. LOS F applies whenever the flow rate exceeds the segment capacity.

Bold text indicates unacceptable operations by Caltrans LOS standards (LOS D or worse).
Source: Fehr & Peers, October 2010.

Measured against the Caltrans level of service standard, all freeway mainline segments operate at an unacceptable level of service (LOS D or worse) under Existing Conditions.

FIELD OBSERVATIONS

Field observations of the study intersections were conducted in February and March 2010 to verify their operations. In general, observations indicated that all of the study intersections are operating at or near the calculated levels of service. Queuing was observed at those signalized intersections with calculated LOS D operations, however, the vehicle queues typically cleared within one cycle. All of the unsignalized intersections were observed to operate acceptably, with side street traffic volumes finding gaps to enter the intersections.

Observations at the Boronda Road and Northbound US 101 Ramps intersection indicate that the greater lane utilization of the eastbound curb lane queues to the adjacent upstream intersection ramp (US 101 southbound) during the PM and SAT peak hours. This condition can result in calculated operations that are better than those observed in the field.

3. PROJECT CONDITIONS

This chapter presents the impacts of the proposed project on the surrounding roadway system. First, the method used to estimate the amount of traffic generated by the project is described. Then, the results of the LOS calculations for Project Conditions are presented. Project Conditions are defined as Existing Conditions plus traffic generated by the proposed project. A comparison of intersection operations under Existing and Project Conditions is presented, and the impacts of the project on the study intersections and freeway system are discussed. Site access and on-site circulation are also addressed in this chapter.

Project conditions were evaluated during the weekday evening (PM) and weekend mid-day peak periods, which is expected to be the worst-case scenario for project trip generation. Therefore, per the City's direction, no quantitative analysis was conducted for the AM peak period. The Saturday mid-day analysis is presented as an informational scenario because this time period occurs once a week; rather, than a typical midweek (e.g., Tuesday through Thursday) PM peak hour that occurs three times a week.

PROJECT TRAFFIC ESTIMATES

The amount of traffic added to the roadway system by the proposed development is estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of added traffic to the roadway network. The second step estimates the direction of travel to and from the project site. The trips are assigned to specific street segments and intersection turning movements during the third step. The results of the process for the proposed project are described in the following sections.

Trip Generation

The amount of traffic added to the surrounding roadway system by the proposed project was estimated by applying the applicable trip generation rates to the development proposal. Trip rates for the shopping center land use identified in *Trip Generation (8th Edition)* by the Institute of Transportation Engineers (2008) were used to estimate project trip generation.

The retail trip generation also accounts for pass-by trips. Pass-by trips are trips to the site made by vehicles already traveling by the site on the adjacent street (i.e., these vehicles make an interim stop between their primary origin and destination). Pass-by trips are included in the analysis of traffic that enters and exits the project site, but are not considered "new" trips added to the street system by the project. For this analysis, a 20 percent pass-by trip reduction was applied to the PM and SAT peak-hour retail trip estimates in accordance with the *Trip Generation Handbook (2nd Edition)* by the Institute of Transportation Engineers (2004) and consultation with City staff.

The trip rates, reductions, and resulting project trip generation estimates are presented in Table 9. The proposed project is estimated to generate 826 net new PM peak-hour trips (405 inbound and 421 outbound) and 1,096 net new SAT mid-day peak-hour trips (570 inbound and 526 outbound).

TABLE 9
PROJECT TRIP GENERATION RATES AND ESTIMATES

Land Use	Size[1]	Daily	PM Peak-Hour			Saturday Mid-day Peak-Hour		
			In	Out	Total	In	Out	Total
Project Trip Rates (per 1,000 s.f.)								
Retail[2]	205.848 k.s.f.	52.75	2.45	2.56	5.01	3.46	3.20	6.66
Project Trip Estimates								
Retail[2]	205.848 k.s.f.	10,858	506	526	1,032	712	658	1,370
20% Pass-by Reduction		*2,172*	*101*	*105*	*206*	*142*	*132*	*274*
Total Net New Trips		**8,686**	**405**	**421**	**826**	**570**	**526**	**1,096**

Notes:

[1] k.s.f. = thousand (1,000) square feet

[2] Shopping center (ITE land use code 820) rate using fitted equation.

Source: *Trip Generation (8th Edition)*, Institute of Transportation Engineers, 2008.

Trip Distribution

The directions of approach and departure for project traffic were estimated based on the existing travel patterns in the area and the relative locations of complementary land uses in the community. The major directions of approach and departure form the trip distribution pattern for the project, as illustrated in Figure 6.

Trip Assignment

The trips generated by the project were assigned to the roadway system based on the directions of approach and departure discussed above. Figure 7 shows the project trips assigned to each turning movement at the study intersections. Project trips were added to existing traffic volumes to establish intersection volumes for Project Conditions, as shown on Figure 8.

Salinas Retail Center TIA

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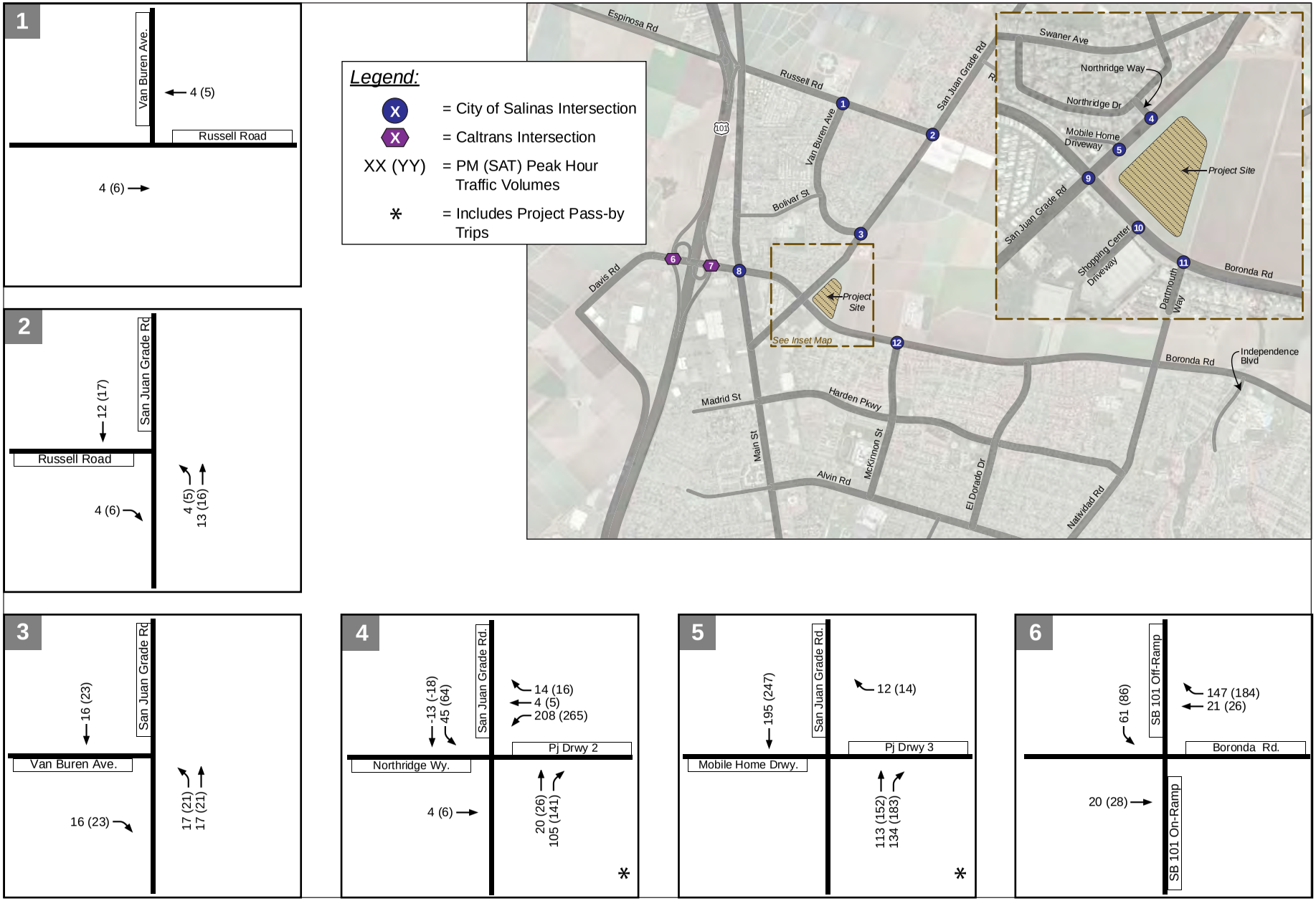
Project Trip Distribution

Figure 6



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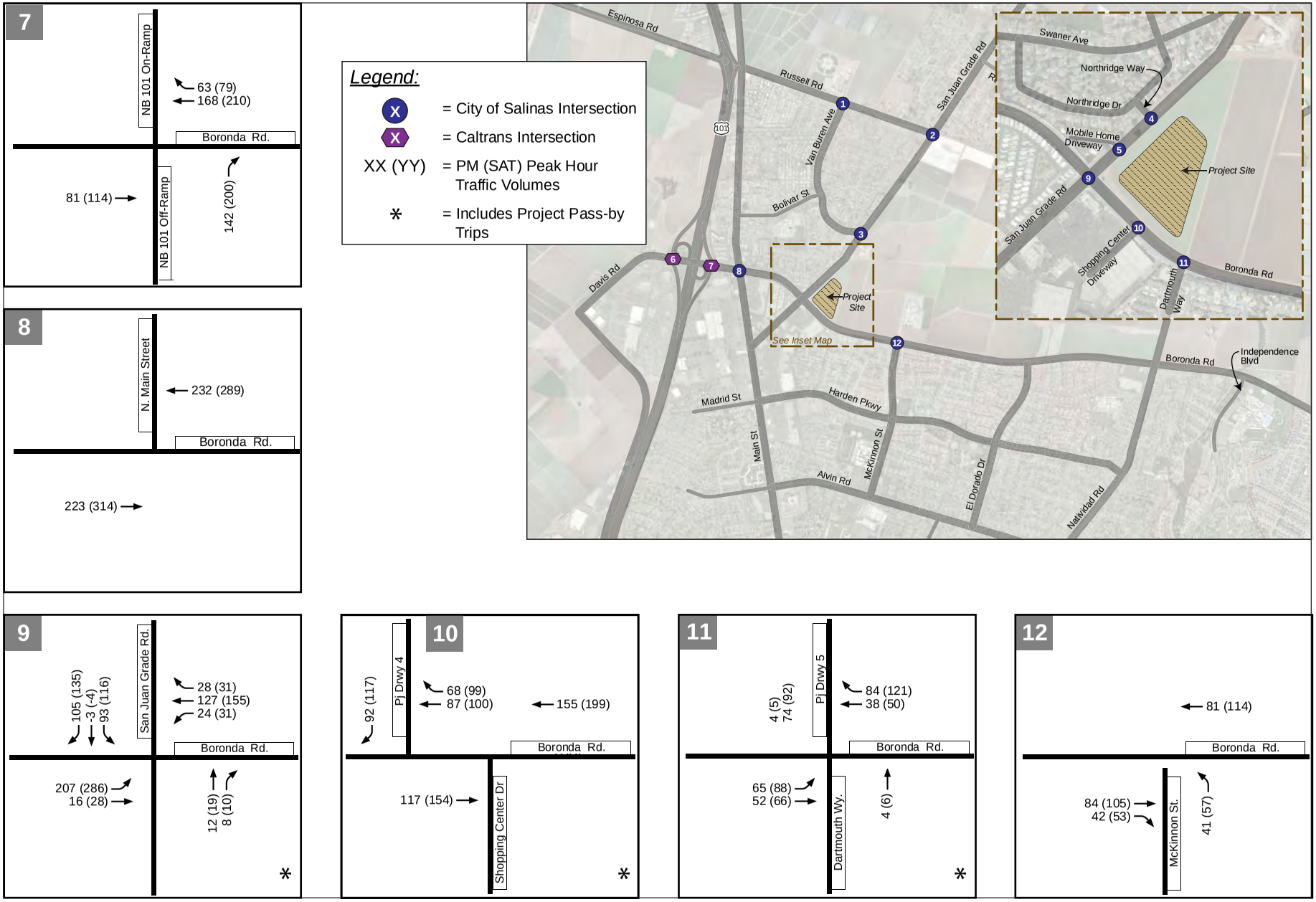
Project Trip Assignment

Figure 7A



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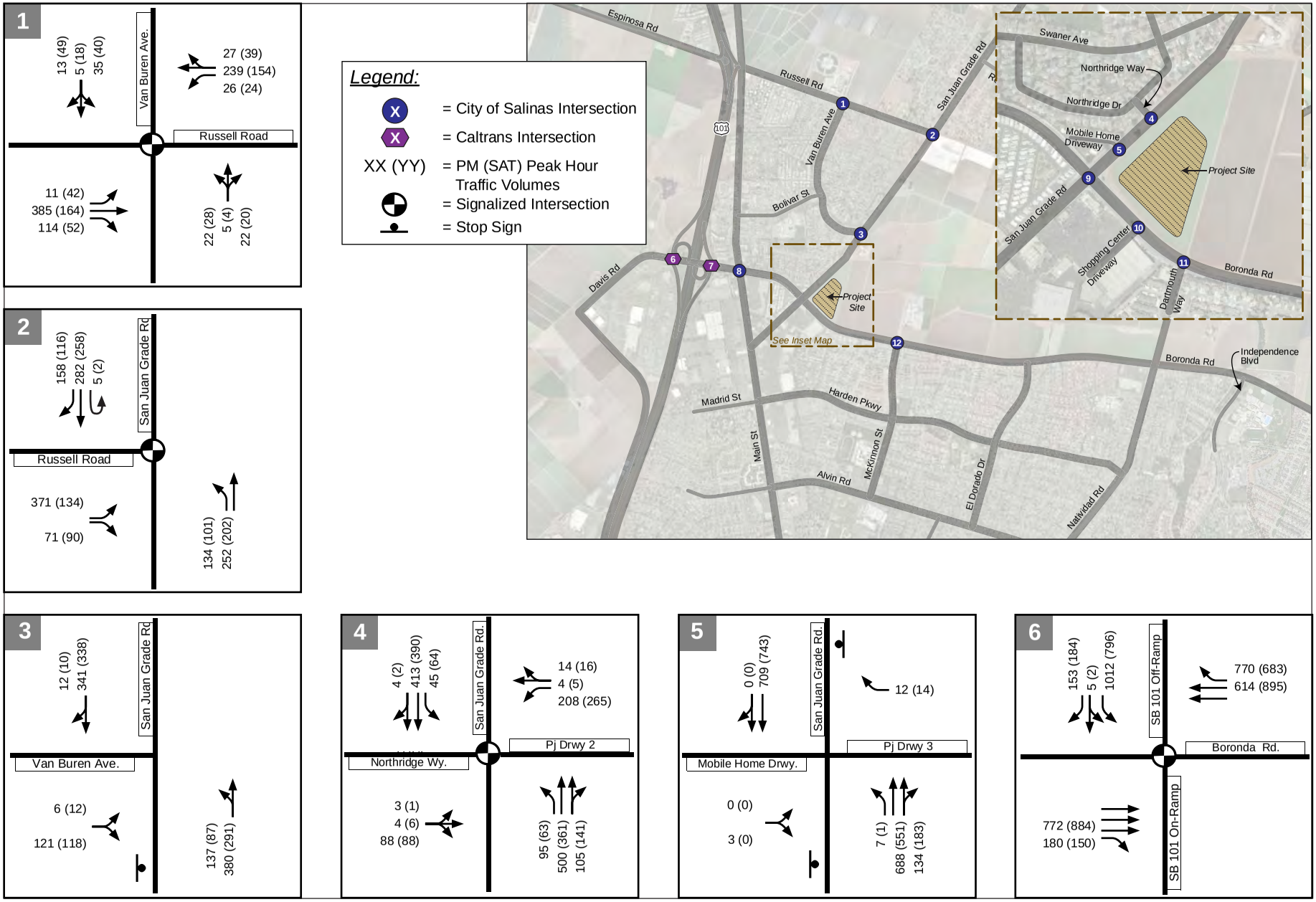
Project Trip Assignment

Figure 7B



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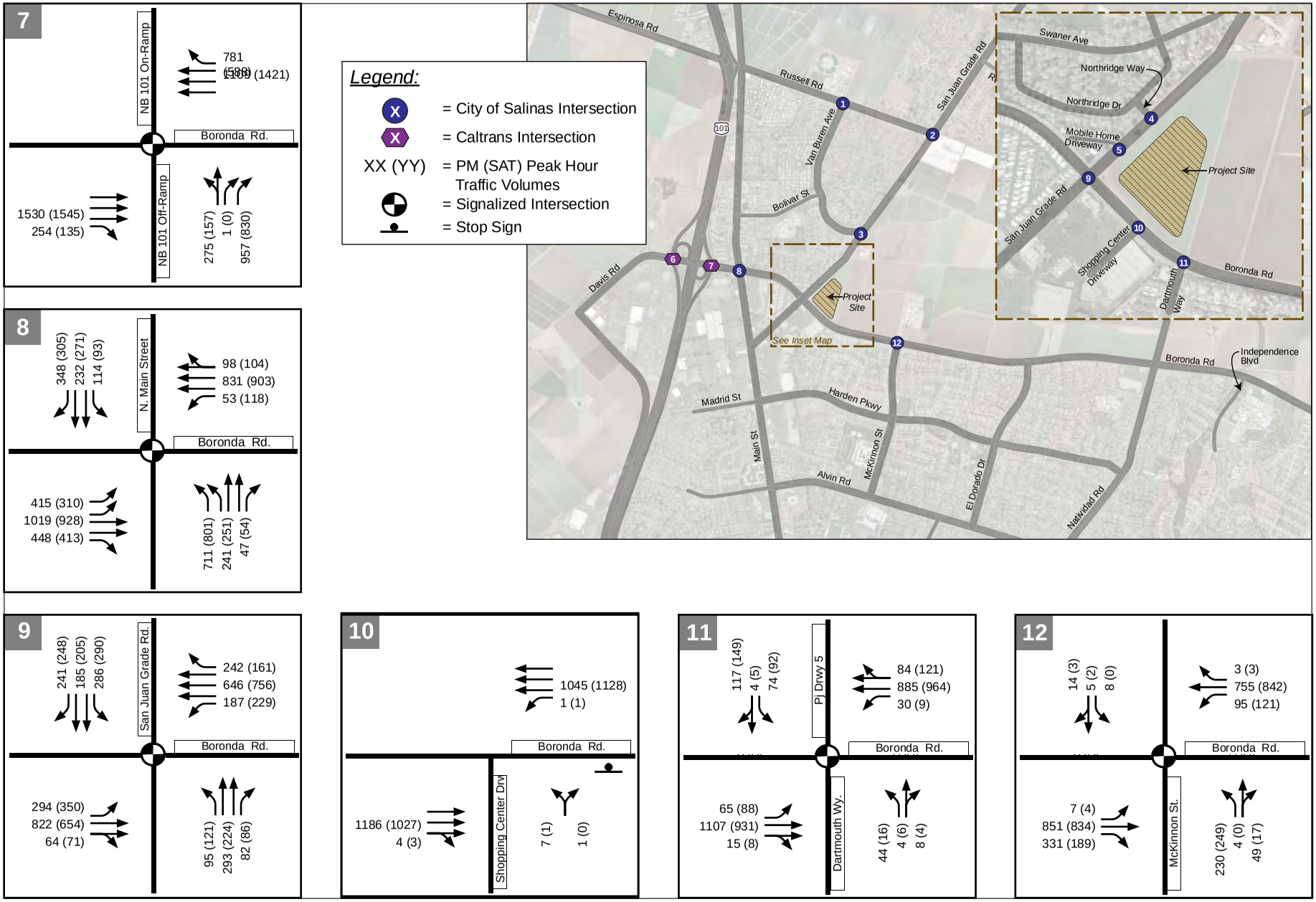
SJ10-1154

Project Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 8A



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Project Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 8B

PROJECT IMPACT CRITERIA

The determination of significance for project impacts is based on applicable policies, regulations, goals, and guidelines defined by the City of Salinas, and Caltrans. The City of Salinas *General Plan* does not include a policy regarding the analysis of an intersection or roadway that is already operating below standard. However, in recent traffic impact studies prepared for the City, the threshold used states that the addition of any new trips to a facility already exceeding the operating standard is considered a significant impact. A similar criterion is applied to County and Caltrans facilities that are already below operating standards. The impacts of the project were evaluated by comparing the results of the level of service calculations under Project Conditions to the results under Existing Conditions. The detailed impact criteria for this study are presented below.

City of Salinas

Intersections

Significant impacts at signalized intersections are defined to occur when:

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

Significant impacts at unsignalized intersections are defined to occur when:

- The addition of project traffic causes intersection operations to degrade to an unacceptable level and satisfy the peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD), or
- The project's access to a major street causes a potentially unsafe situation or requires a new traffic signal based on standard warrant criteria.

Roadways

The LOS standard for City of Salinas roadways is LOS D. Traffic impacts on City facilities are defined to occur when:

- Added project traffic causes roadway segment operations to deteriorate from an acceptable level (LOS D or better) to an unacceptable level (LOS E or worse); or
- Project traffic is added to a roadway segment operating at an unacceptable (LOS E or worse) level.

Pedestrian and Bicycle Facilities

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

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

Transit Facilities

Significant impacts to transit facilities are defined to occur when:

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

Caltrans

Intersections

Significant impacts at signalized intersections are defined to occur when:

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

Mainline Freeway Segments

Significant impacts at signalized intersections are defined to occur when:

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

PROJECT ROADWAY IMPROVEMENTS

Project intersection lane configurations and traffic control devices are assumed to be the same under Existing Conditions for all off-site locations except for the intersections along the project frontage. Along San Juan Grade Road the project frontage will accommodate a 4-lane arterial with median and include two driveways to the main parking lot and one driveway to the "back of house" for the anchor retail store. The main full-access project driveway would align with Northridge Way on San Juan Grade Road. While the San Juan Grade Road and Mobile Home Driveway north of East Boronda Road would maintain left-in-left-out access. Along East Boronda Road the project frontage will accommodate a 6-lane arterial with raised median and include a signalized driveway at East Boronda Road/Dartmouth Way and a right-in-right-out driveway between San Juan Grade Road and Dartmouth Way. Conceptual striping plans are included in **Appendix J,** which illustrate vehicle travel lane widths, storage pocket lengths, bicycle lane widths and treatments, locations of pedestrian curb ramps and crosswalks, median refuge island treatments, and merging transitions along and near the project frontage of East Boronda Road and San Juan Grade Road. The Western Bypass and Alvin Drive Extension are listed in the *City of Salinas Traffic Improvement Program (TIP)* as future improvements, but are not included as near-term roadway improvements. The Western Bypass would be a 4-lane roadway extending from the US 101/Boronda Road interchange to the Davis Road and Blanco Road intersection. This improvement would provide parallel capacity to US 101 south of the Boronda Road interchange. Similarly, the planned Alvin Drive extension to the Western Bypass (see the *2002 Salinas General Plan* and *Traffic Improvement Program*, 2010 update) is a potential roadway that provides parallel capacity to Boronda Road.

PROJECT INTERSECTION LEVELS OF SERVICE

Intersection levels of service were calculated with the new traffic added by the project to evaluate the operating conditions and identify potential impacts to the local roadway system. The results of the intersection level of service calculations for Existing and Project Conditions are presented in Table 10. The level of service calculation sheets are included in the **Appendix B**.

Measured against the City of Salinas level of service standard, all signalized (LOS D or better) and unsignalized (LOS E or better) study intersections operate at an acceptable level of service during one or both of the peak hours under Project Conditions except the East Boronda Road and San Juan Grade Road intersection during the PM and SAT peak hours.

Measured against Caltrans level of service standard, the signalized (LOS C or better) US 101 ramp intersections operate at an acceptable level of service during both of the peak hours under Project Conditions.

TABLE 10
EXISTING AND PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour[1]	Intersection Control/ (Existing/Project)	Existing		Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. Russell Road / Van Buren Avenue	PM SAT	Side-Street Stop	12.9 12.9	B B	13.1 12.9	B B
2. Russell Road / San Juan Grade Road	PM SAT	Signal	15.6 11.0	B B	15.9 11.2	B B
3. San Juan Grade Road / Van Buren Avenue	PM SAT	Side-Street Stop	12.5 12.4	B B	13.1 13.1	B B
4. San Juan Grade Road / Northridge Way	PM SAT	Side-Street Stop/ Signal	13.2 12.3	B B	21.2 21.9	C C
5. San Juan Grade Road / Mobile Home Driveway	PM SAT	Side-Street Stop	12.1 8.5	B A	10.2 10.2	B B
6. Boronda Road / SB US 101 Ramps	PM SAT	Signal	12.1 11.1	B B	14.0 12.8	B B
7. Boronda Road / NB US 101 Ramps	PM SAT	Signal	13.3 10.9	B[4] B[4]	15.6 13.7	B B
8. Boronda Road / N. Main Street	PM SAT	Signal	42.9 46.9	D D	46.2 52.8	D D
9. East Boronda Road / San Juan Grade Road	PM SAT	Signal	42.3 38.5	D D	**58.8** **65.8**	**E** **E**
10. East Boronda Road / Driveway 1	PM SAT	Side-Street Stop	21.9 18.8	C C	9.8 10.6	A B
11. East Boronda Road / Dartmouth Way	PM SAT	Signal	11.0 5.4	B A	25.8 25.1	C C
12. East Boronda Road / McKinnon Street	PM SAT	Signal	24.3 25.7	C C	32.3 37.7	C D

TABLE 10
EXISTING AND PROJECT INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour[1]	Intersection Control/ (Existing/Project)	Existing		Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]

Notes:
1 PM = evening weekday peak-hour, SAT = Saturday peak hour.
2 Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop intersections using methodology described in the 2000 *Highway Capacity Manual*. For two-way stop controlled unsignalized intersections, total control delay for the worst movement, expressed in seconds per vehicle, is presented. LOS calculations conducted using the Synchro level of service analysis software package.
3 LOS = Level of service
4 Observations at the Boronda Road and Northbound US 101 Ramps intersection indicate that the greater lane utilization of the eastbound curb lane queues to the adjacent intersection ramp (US 101 southbound) during the PM and SAT peak hour. This condition can result in calculated operations that are better than those observed in the field.

Significant impacts are highlighted in **bold** text.

Source: Fehr & Peers, October 2010.

PROJECT ROADWAY SEGMENT LEVELS OF SERVICE

The results of the City of Salinas roadway segment analysis are presented in Tables 11. Measured against the City of Salinas level of service standard, East Boronda Roadway between McKinnon Street and Natividad Road operates at an unacceptable level of service (LOS D or better) under Project Conditions.

TABLE 11
EXISTING AND PROJECT LOCAL ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	Peak Hour[1]	Existing		Project	
			Volume[2]	LOS[3]	Volume[2]	LOS[3]
East Boronda Road between McKinnon Street and El Dorado Drive	2-Lane Arterial	PM	1492	D	**1657**	**E**
		SAT	**1615**	**E**	**1834**	**F**
East Boronda Road between El Dorado Drive and Natividad Road	2-Lane Arterial	PM	1526	D	**1691**	**E**
		SAT	1448	C	**1667**	**E**

Notes:
1 PM = evening weekday peak-hour, SAT = Saturday peak hour.
2 Volume = Two-way peak hour traffic.
3 LOS = Level of service.

Significant impacts are highlighted in **bold** text.

Source: Fehr & Peers, October 2010.

PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

The results of the US 101 freeway mainline analysis are presented in Tables 12. The corresponding level of service calculation sheets are contained in **Appendix C**. Measured against the Caltrans level of service standard, all freeway mainline segments operate at an unacceptable level of service (LOS D or better) under Project Conditions.

TABLE 12
EXISTING AND PROJECT US 101 FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Existing		Project	
			Density[2]	LOS[3, 4]	Density[2]	LOS[3, 4]
Southbound	Russell Road to Boronda Road	PM	**>45.0**	**F**	**>45.0**	**F**
	Boronda Road to Laurel Drive	PM	**39.5**	**E**	**42.6**	**E**
Northbound	Laurel Drive to Boronda Road	PM	**38.6**	**E**	**41.7**	**E**
	Boronda Road to Russell Road	PM	**36.4**	**E**	**37.6**	**E**

Notes:
1. Balanced counts derived from Boronda Road ramp volumes and freeway mainline count.
2. Measured in vehicles per mile per lane (veh/mi/ln).
3. LOS = Level of Service.
4. LOS F applies whenever the flow rate exceeds the segment capacity.

Significant impacts are highlighted in **bold** text.
Source: Fehr & Peers, October 2010.

PROJECT SIGNAL WARRANT ANALYSIS

The peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD) was evaluated for the unsignalized study intersections that operate unacceptably under Project Conditions to determine if a traffic signal is warranted. The result of the peak-hour warrant analysis indicates that San Juan Grade Road and Northridge Way intersection satisfies peak hour warrant analysis (see **Appendix D**).

This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration *Manual on Uniform Traffic Control Devices* and associated California MUTCD guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated by an experienced engineer based on field-measured rather than forecast traffic data and a thorough study of traffic and roadway conditions. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The City of Salinas should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants to prioritize and program intersections for signalization.

INTERSECTION IMPACTS AND MITIGATION MEASURES

Based on the City project impact criteria listed above, the proposed project would result in a significant project impact at the East Boronda Road and San Juan Grade Road intersection under Project Conditions with the degradation of intersection operations to an unacceptable level of service during the evening (PM) and midday Saturday (SAT) peak hours. **Appendix F** contains the corresponding mitigation calculation sheets.

East Boronda Road and San Juan Grade Road – Operations at this location are projected to be LOS E with 58.8 seconds of average delay and 65.8 seconds of delay during the PM and SAT peak hours, respectively. This intersection requires a second eastbound left-turn lane to operate acceptably (LOS D or better) during PM and SAT peak hours. This improvement is consistent with the *City of Salinas Traffic Improvement Program (TIP)* Project Number 50 and City of Salinas Public Works Department active

project (No. 9510), which includes two left-turn lanes on all approaches. Thus, payment of the city impact fee will fulfill the project applicants obligations for mitigating this intersection impact to **less-than-significant**. Other secondary impacts will include tree removal, lengthening of crosswalks, and/or modification of signal phasing that could increase the pedestrian crossing distances/times at the intersection.

A recommended storage pocket length of 400 feet is presented in the *East Boronda Road and San Juan Grade Road Intersection Analysis* technical memorandum (see **Appendix I**) for the East Boronda Road and San Juan Grade Road intersection. This left turn storage pocket estimate is based on using the average queue distance (based on average of five (5) SimTraffic micro-simulation runs) plus the deceleration distance at 30 miles per hour (mph). In other words, on average vehicles will be able to decelerate from 30 mph and stop at the back of the average queue for the left turn movement within the length of the storage pocket under Year 2030 Current General Plan Conditions. At 30 mph the Caltrans *Highway Design Manual* (HDM) specifies an approximate deceleration distance of 235 feet and the estimated average storage pocket length is approximately 100 to 200 feet for the southbound left turn lane. Thus, the southbound left turn storage pocket is estimated to be 400 feet.

Maintaining left-in-left out access for the mobile home driveway (intersection 5) would shorten the southbound left-turn lane storage pocket at East Boronda Road and San Juan Grade Road to approximately 150 feet, which will cause southbound left-turn lane vehicles to block southbound through vehicles. Accordingly, this is considered a **significant operational impact** during the PM and SAT peak hours based on SimTraffic queuing analysis of southbound left-turn lane movement at East Boronda Road and San Juan Grade Road intersection. Mitigation of this operational impact requires modification of the San Juan Grade Road and Mobile Home Driveway intersection to right-in-right-out access only. This driveway modification would require a U-turn movement at the signalized intersections on San Juan Grade Road at both Northridge Drive and East Boronda Road. Under Project Conditions fewer than 10 vehicles make a northbound left into the mobile home driveway during the PM or SAT peak hours. And zero vehicles make an eastbound left turn from the mobile home driveway during the PM and SAT peak hours. The City of Salinas should continue to monitor this location and conduct an engineering study to evaluate the need for turn movement restrictions as appropriate to maintain acceptable intersection operations.

ROADWAY IMPACTS AND MITIGATION MEASURES

Based on the impact criteria listed above, the proposed project will have a significant impact on East Boronda Road between McKinnon Street and Natividad Road under Project Conditions.

East Boronda Road between McKinnon Street and Natividad Road – This roadway segment requires widening to a 4-lane arterial to provide acceptable operations (LOS D) during the PM and SAT peak hours. Widening East Boronda Road to 4-lanes is consistent with the Salinas *General Plan Circulation Element* and the Salinas *Traffic Improvement Program (TIP)* Project Number 20. Thus, payment of the city impact fee will fulfill the project applicants obligations for mitigating this intersection impact to **less-than-significant**. City Staff is currently designing the widening of East Boronda Road to have three eastbound lanes and two westbound lanes.

FREEWAY MAINLINE IMPACTS AND MITIGATION MEASURES

The results of the freeway level of service analysis indicate that the proposed project would create a **significant impact** on the following mixed-flow freeway segments during the PM peak hour:

- US 101 between Laurel Drive and Boronda Road
- US 101 between Boronda Road and Russell Road

The widening of US 101 to 6-lanes between the new Russell Road interchange and Harris Road (*City of Salinas Traffic Improvement Program* Project Number 32) would mitigate the project's impact. The TAMC regional project list does not include the widening of US 101 through the City of Salinas in the regional transportation impact fee, nor does the *2010 Monterey County Constrained Regional Transportation Plan*. Unless completely funded with appropriate agreements to implement the feasible roadway improvements discussed above the impacts would be ***significant and unavoidable***. This conclusion is consistent with the significant and unavoidable impacts identified in the *Final Supplement for the Salinas General Plan Final Program Environmental Impact Report* (2007) for these two US 101 mainline segments. As mentioned previously, the proposed project is consistent with land use designations contained in the 2002 General Plan, which were used as a basis for projecting traffic impacts identified in the *Final Supplement for the Salinas General Plan Final Program Environmental Impact Report* (2007). The City made a statement of overriding consideration for these impacts. This conclusion is discussed further in the California Environmental Quality Act (CEQA) documentation for this proposed project.

PEDESTRIAN, BICYCLE, AND TRANSIT IMPACTS AND MITIGATION MEASURES

Pedestrian and Bicycle Impacts

The project is expected to generate some pedestrian demand by patrons and employees that will access nearby bus stops and commercial services on East Boronda Road and San Juan Grade Road. The planned pedestrian and bicycle facilities for the Salinas Retail Center project are shown on Figure 2 of the site plan. Sidewalk will be provided and connect the southern and western edges of the project site. Access to the project site will be connected from the sidewalk via a short pedestrian path near the Lowe's Home Improvement loading area. A pedestrian path from the East Boronda Road sidewalk to the Lowe's main building entrance will provide a direct connection through the parking lot.

As described in the Existing Conditions section, continuous sidewalks do not currently exist along the northern edge of East Boronda Road or eastern edge of San Juan Grade Road. Per City requirements and the site plan, the project is expected to construct sidewalks on the north side of East Boronda Road and on the eastside of San Juan Grade Road along the project frontage. Crosswalks will be provided at the San Juan Grade Road/Northridge Way with signalization and the signalized East Boronda Road/Dartmouth Way intersection. Thus, the existing and proposed pedestrian facilities can reasonably accommodate the increased demand and the newly constructed pedestrian facilities will not conflict with planned facilities; therefore, ***less-than-significant*** pedestrian facility impacts are anticipated.

As shown on the project site plan, bicycle lanes will be provided on East Boronda Road along the southern portion of the project site, and San Juan Grade Road along the western edge of the project site. These designations are consistent with the bicycle path system presented in City of Salinas *General Plan Circulation Element* (September 2002).

Bicycle parking should be provided on-site. Salinas Municipal Code (§37-50.400) requires that the number of bicycle spaces shall be 10 percent of the required auto spaces. The project does not define the number of bicycle parking spaces but is required to provide a minimum of 83 bicycle spaces based on the required number of parking spaces. The existing bicycle facilities can reasonably accommodate the increased demand, and project implementation will not conflict with any planned facility; therefore, ***less-than-significant*** bicycle impacts are anticipated.

Transit Impacts

The project site plan currently proposes two potential locations for bus stops, one of which replaces the existing bus stop on East Boronda Road. No other modifications or enhancements are identified to the existing transit facilities. Nor, does it conflict with the existing transit system or planned transit system.

Based on the project impact criteria listed above, the proposed project will have a ***less-than-significant impact*** on transit facilities.

PROPOSED SITE ACCESS AND ON-SITE CIRCULATION

As proposed, vehicle access into and out of the site would be provided via three driveways on San Juan Grade Road and two driveways on East Boronda Road. The main full-access project driveway would align with Northridge Way on San Juan Grade. While the San Juan Grade Road and Mobile Home Driveway north of East Boronda Road would be limited to right-in/right-out access. A signalized driveway would align with Dartmouth Way on East Boronda Road and a right-in/right-out driveway is proposed between San Juan Grade Road and Dartmouth Way.

Service Vehicle Access

The northern most driveway on San Juan Grade Road will provide access for service vehicles to the back of house for the anchor retail store. Alternatively service vehicles can access the back of house via the East Boronda Road and Dartmouth Way intersection. A 110-foot truck turnaround is provided adjacent to the loading docks for building A1. The path of travel for trucks entering either at East Boronda Road or San Juan Grade Road is acceptable. All trucks are expected to exit the site using the northern most driveway on San Juan Grade Road. The applicant and City should confirm that these paths are feasible and acceptable prior to issuing building permits.

RECOMMENDED SITE PLAN MODIFICATIONS

Recommended modifications to vehicular, pedestrian, and bicycle site access and on-site circulation are presented on Figure 9.

Vehicular Access and Circulation

Recommendation 1 – The site plan shows a four legged uncontrolled junction immediately north of the right-in & right out project driveway on East Boronda Road. It is recommended that the uncontrolled junction be reconfigured by removing the east access to buildings R1 and J1 and removing the west access to buildings R2 and R3. This modification would allow for additional parking spaces.

Recommendation 2 - The egress/ingress driveway that serves as the north leg of East Boronda Road/Dartmouth Way should be reconfigured by removing the inbound left turn lane and extending the outbound left turn lane to provide greater queue storage at the signal. East Boronda Road/Dartmouth Way will be one of the main access gates to the project site and should provide adequate egress storage pocket length to avoid spillback into the parking aisles. Also, the eastbound left-turn pocket (from East Boronda Road to the project driveway) should be at least 200 feet to accommodate the inbound project traffic. This storage pocket length is limited by the nearby westbound left-turn storage pocket (approximately 150 feet) at the unsignalized Walmart driveway (intersection 10).

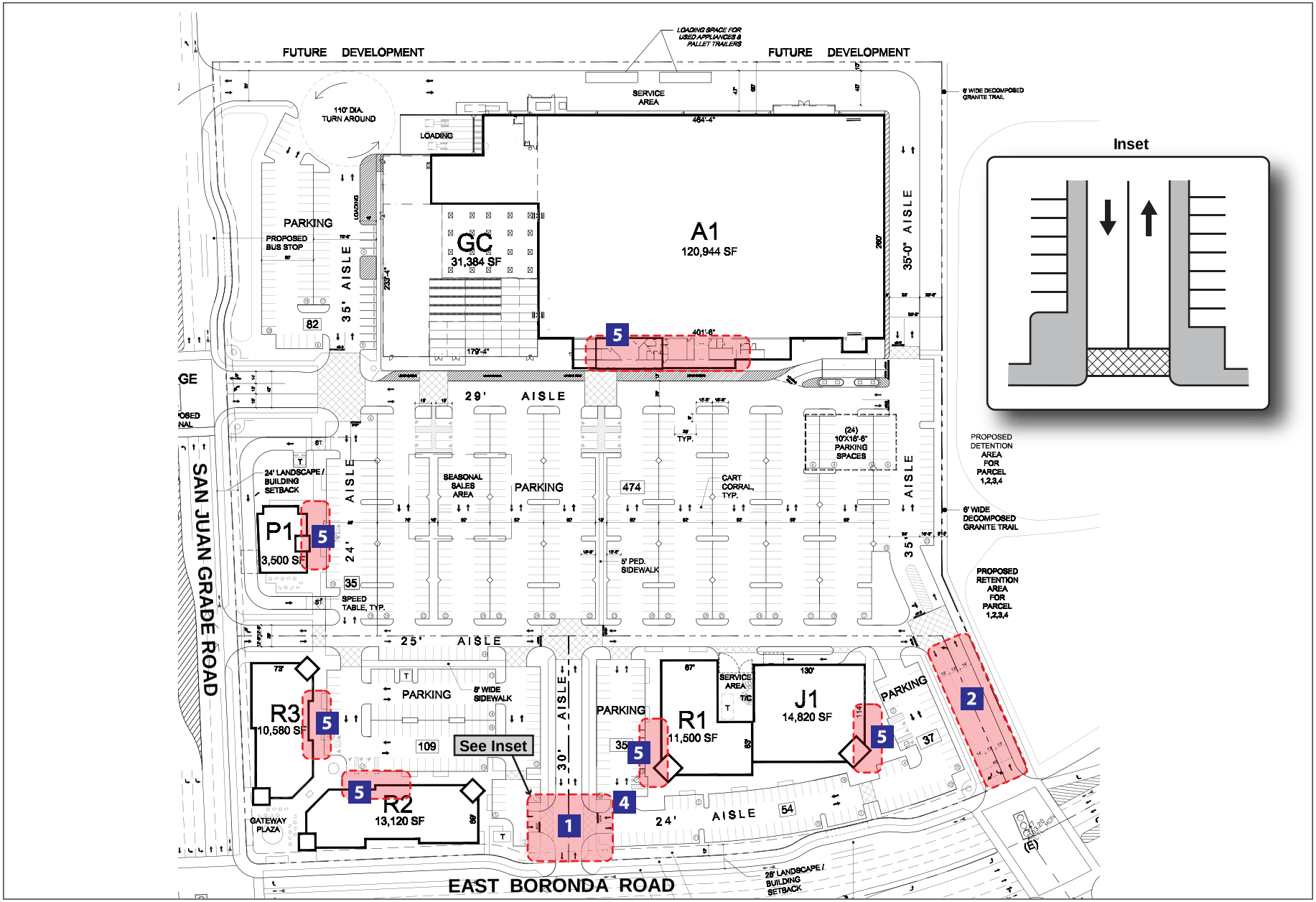
Pedestrian Access and Circulation

Recommendation 3 - All sidewalks both on-site and along the project frontage should be a minimum of eight feet in width.

Recommendation 4 - The pedestrian crossing through the parking lot between the western driveway on Boronda Road and building R1 should have the same treatment similar to the others. Also, the pedestrian crossing near building J1 should have the same treatment similar to the others.

Bicycle Access and Circulation

Recommendation 5 - Bicycle parking should be provided near the entrances of each building (A1, J1, R1, R2, R3, and P1). The bicycle racks and/or lockers on-site should be placed in highly visible locations to encourage bicycling and discourage theft. The bicycle parking should be shown on the site plan.



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Site Plan Recommendations

Figure 9

4. CUMULATIVE CONDITIONS

This chapter discusses the analysis of the two Cumulative scenarios – with and without the proposed project. Cumulative without Project intersection volumes were calculated using traffic from approved but not yet constructed developments, and pending developments in the study area.

CUMULATIVE TRAFFIC VOLUMES

Cumulative Without Project

Cumulative without Project traffic volumes, as shown in Figure 10, were calculated by adding traffic from approved and pending developments located in the City of Salinas and Monterey County to the existing turning movement volumes. Where traffic estimates were not available, traffic was estimated using standard engineering practice for the approved and pending projects listed in **Appendix G**.

Cumulative With Project

The new project trips (see Chapter 3) were added to the Cumulative without Project volumes to represent volumes for Cumulative with Project Conditions as shown on Figure 11.

CUMULATIVE ROADWAY IMPROVEMENTS

No roadway improvements were included under Cumulative Conditions. The Western Bypass and Alvin Drive Extension are listed in the *City of Salinas Traffic Improvement Program (TIP)* as future improvements, but are not included as near-term roadway improvements. The Western Bypass would be a 4-lane roadway extending from the US 101/Boronda Road interchange to the Davis Road and Blanco Road intersection. This improvement would provide parallel capacity to US 101 south of the Boronda Road interchange. Similarly, the planned Alvin Drive extension to the Western Bypass (see the *2002 Salinas General Plan* and *Traffic Improvement Program*, 2010 update) is a potential roadway that provides parallel capacity to Boronda Road.

CUMULATIVE WITHOUT PROJECT LEVELS OF SERVICE

Intersection

Intersection operations were evaluated with level of service calculations under Cumulative without Project Conditions, and the results are summarized in Table 13.

Measured against the City of Salinas level of service standard, all signalized (LOS D or better) and unsignalized (LOS E or better) study intersections operate at an acceptable level of service during one or both of the peak hours under Cumulative without Project Conditions except the East Boronda Road and San Juan Grade Road intersection during the PM and SAT peak hours.

Measured against Caltrans level of service standard, the signalized (LOS C or better) US 101 ramp intersections operate at an acceptable level of service during both of the peak hours under Cumulative without Project Conditions.

TABLE 13
CUMULATIVE INTERSECTION LEVELS OF SERVICE

Intersection	Peak Hour[1]	Intersection Control (Cumulative w/o Project / Cumulative w/ Project)	Cumulative Without Project		Cumulative With Project	
			Delay[2]	LOS[3]	Delay[2]	LOS[3]
1. Russell Road / Van Buren Avenue	PM	Side-Street	13.3	B	13.0	B
	SAT	Stop	12.8	B	12.8	B
2. Russell Road / San Juan Grade Road	PM	Signal	17.9	B	18.3	B
	SAT		10.9	B	11.8	B
3. San Juan Grade Road / Van Buren Avenue	PM	Side-Street	15.4	C	17.7	C
	SAT	Stop	16.2	C	18.8	C
4. San Juan Grade Road / Northridge Way	PM	Side-Street	16.7	C	22.2	C
	SAT	Stop/Signal	15.3	C	23.4	C
5. San Juan Grade Road / Mobile Home Driveway	PM	Side-Street	13.8	B	10.4	B
	SAT	Stop	9.2	A	10.5	B
6. Boronda Road / SB US 101 Ramps	PM	Signal	14.0	B	15.8	B
	SAT		12.7	B	14.9	B
7. Boronda Road / NB US 101 Ramps	PM	Signal	15.5	B	18.4	B
	SAT		13.3	B	16.4	B
8. Boronda Road / N. Main Street	PM	Signal	48.5	D	**59.2**	**E**
	SAT		54.0	D	**95.4**	**F**
9. East Boronda Road / San Juan Grade Road	PM	Signal	**71.2**	**E**	**86.2**	**F**
	SAT		**64.0**	**E**	**113.6**	**F**
10. East Boronda Road / Driveway 1	PM	Side-Street	31.0	D	31.9	D
	SAT	Stop	23.4	C	119.4	F
11. East Boronda Road / Dartmouth Way	PM	Signal	23.9	C	26.8	C
	SAT		6.7	A	26.3	C
12. East Boronda Road / McKinnon Street	PM	Signal	39.1	D	**64.2**	**E**
	SAT		47.0	D	**89.3**	**F**

Notes:

[1] PM = evening weekday peak-hour, SAT = Saturday peak hour.

[2] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop intersections using methodology described in the 2000 *Highway Capacity Manual*. For two-way stop controlled unsignalized intersections, total control delay for the worst movement, expressed in seconds per vehicle, is presented. LOS calculations conducted using the Synchro level of service analysis software package.

[3] LOS = Level of service

[4] Observations at the Boronda Road and Northbound US 101 Ramps intersection indicate that the greater lane utilization of the eastbound curb lane queues to the adjacent intersection ramp (US 101 southbound) during the PM and SAT peak hour. This condition can result in calculated operations that are better than those observed in the field.

Significant impacts are highlighted in **bold** text.

Source: Fehr & Peers, October 2010.

Roadway Segment

The results of the City of Salinas roadway segment analysis are presented in **Tables 14**. Measured against the City of Salinas level of service standard, East Boronda Roadway between McKinnon Street and Natividad Road operates at an unacceptable level of service (LOS D or worse) under Cumulative without Project Conditions.

TABLE 14
CUMULATIVE ROADWAY SEGMENT LEVELS OF SERVICE

Roadway Segment	Roadway Type	Peak Hour[1]	Cumulative Without Project		Cumulative With Project	
			Volume[2]	LOS[3]	Volume[2]	LOS[3]
East Boronda Road between McKinnon Street and El Dorado Drive	2-Lane Arterial	PM	**1818**	**F**	**1983**	**F**
		SAT	**1990**	**F**	**2209**	**F**
East Boronda Road between El Dorado Drive and Natividad Road	2-Lane Arterial	PM	**1852**	**F**	**2017**	**F**
		SAT	**1823**	**F**	**2042**	**F**

Notes:
[1] PM = evening weekday peak-hour, SAT = Saturday peak hour.
[2] Volume = Two-way peak hour traffic.
[3] LOS = Level of service.
Significant cumulative impacts are highlighted in **bold** text.
Source: Fehr & Peers, October 2010.

Freeway Mainline

The results of the US 101 freeway mainline analysis are presented in Tables 15. The corresponding level of service calculation sheets are contained in **Appendix B**. Measured against the Caltrans level of service standard, all freeway mainline segments would operate at an unacceptable level of service (LOS D or worse) under Cumulative without Project Conditions.

TABLE 15
CUMULATIVE US 101 FREEWAY MAINLINE LEVELS OF SERVICE

Travel Direction	Segment	Peak Hour	Cumulative Without Project		Cumulative With Project	
			Density[2]	LOS[3, 4]	Density[2]	LOS[3, 4]
Southbound	Russell Road to Boronda Road	PM	**>45**	**F**	**>45**	**F**
	Boronda Road to Laurel Drive	PM	**>45**	**F**	**>45**	**F**
Northbound	Laurel Drive to Boronda Road	PM	**>45**	**F**	**>45**	**F**
	Boronda Road to Russell Road	PM	**>45**	**F**	**>45**	**F**

Notes:
1. Balanced counts derived from Boronda Road ramp volumes and freeway mainline count.
2. Measured in vehicles per mile per lane (veh/mi/ln).
3. LOS = Level of Service.
4. LOS F applies whenever the flow rate exceeds the segment capacity.

Significant cumulative impacts are highlighted in **bold** text.
Source: Fehr & Peers, October 2010.

CUMULATIVE WITH PROJECT LEVELS OF SERVICE

Intersection

Intersection operations were evaluated with level of service calculations under Cumulative with Project Conditions, and the results are summarized in Table 13.

Measured against the City of Salinas level of service standard, all signalized (LOS D or better) and unsignalized (LOS E or better) study intersections operate at an acceptable level of service during one or both of the peak hours under Cumulative with Project Conditions except the following:

8. Boronda Road and N. Main Street (PM and SAT peak hours)

9. East Boronda Road and San Juan Grade Road (PM and SAT peak hours)

12. East Boronda Road and McKinnon Street (PM and SAT peak hours)

Measured against Caltrans level of service standard, the signalized (LOS C or better) US 101 ramp intersections operate at an acceptable level of service during both of the peak hours under Cumulative with Project Conditions.

Roadway Segment

The results of the City of Salinas roadway segment analysis are presented in Tables 14. Measured against the City of Salinas level of service standard, East Boronda Roadway between McKinnon Street and Natividad Road operates at an unacceptable level of service (LOS D or worse) under Cumulative with Project Conditions.

Freeway Mainline

The results of the US 101 freeway mainline analysis are presented in Tables 15. The corresponding level of service calculation sheets are contained in **Appendix B**. Measured against the Caltrans level of service standard, all freeway mainline segments operate at an unacceptable level of service (LOS D or worse) under Cumulative with Project Conditions.

Signal Warrant Analysis

The peak-hour signal warrant from the *Manual on Uniform Traffic Control Devices* (MUTCD) was evaluated for the unsignalized study intersections that operate unacceptably under Cumulative with Project Conditions to determine if a traffic signal is warranted. The result of the peak-hour warrant analysis indicates that San Juan Grade Road and Northridge Way intersection satisfies peak hour warrant analysis (see **Appendix D**).

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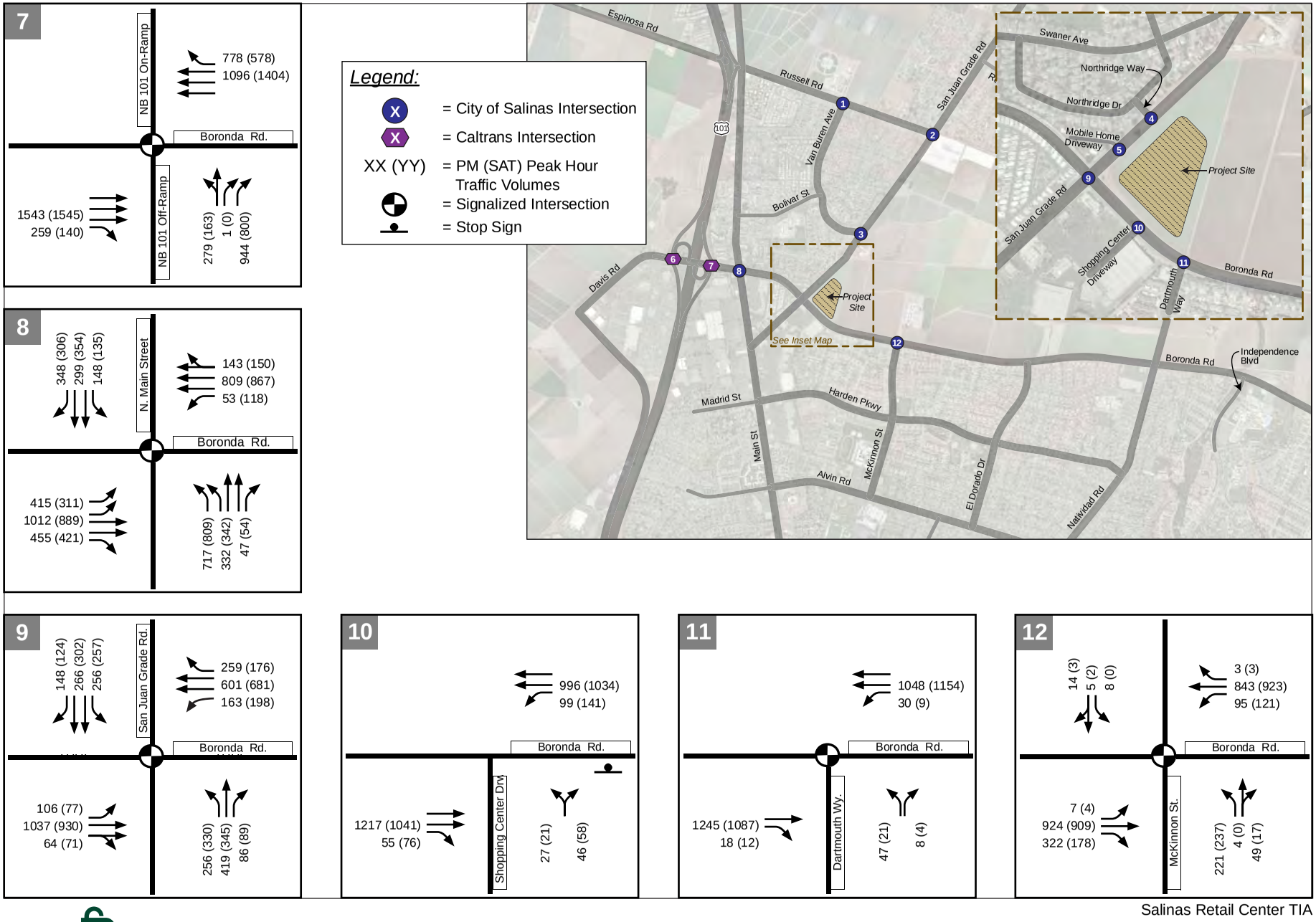
Cumulative Without Project Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 10A



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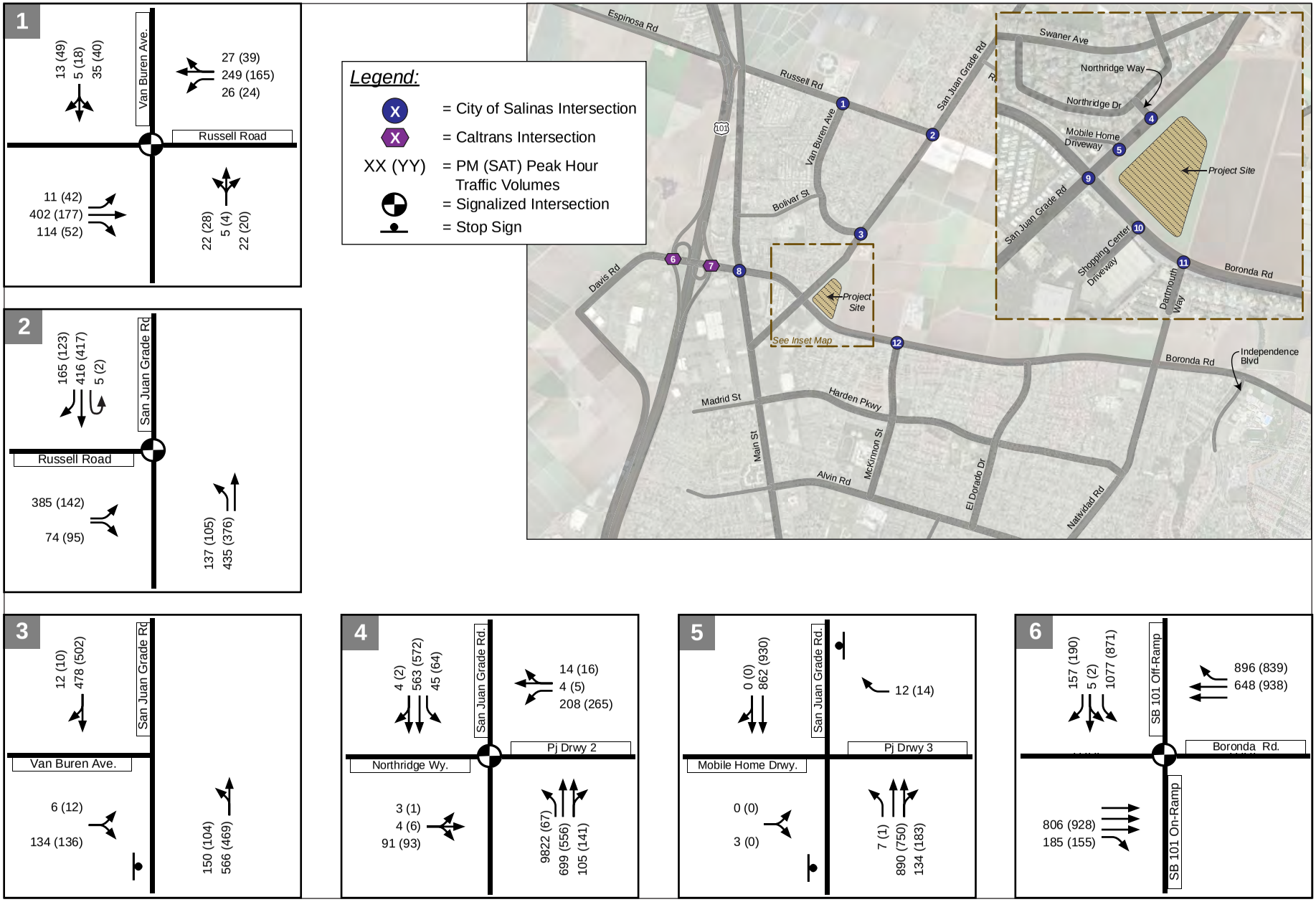
Cumulative Without Project Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 10B



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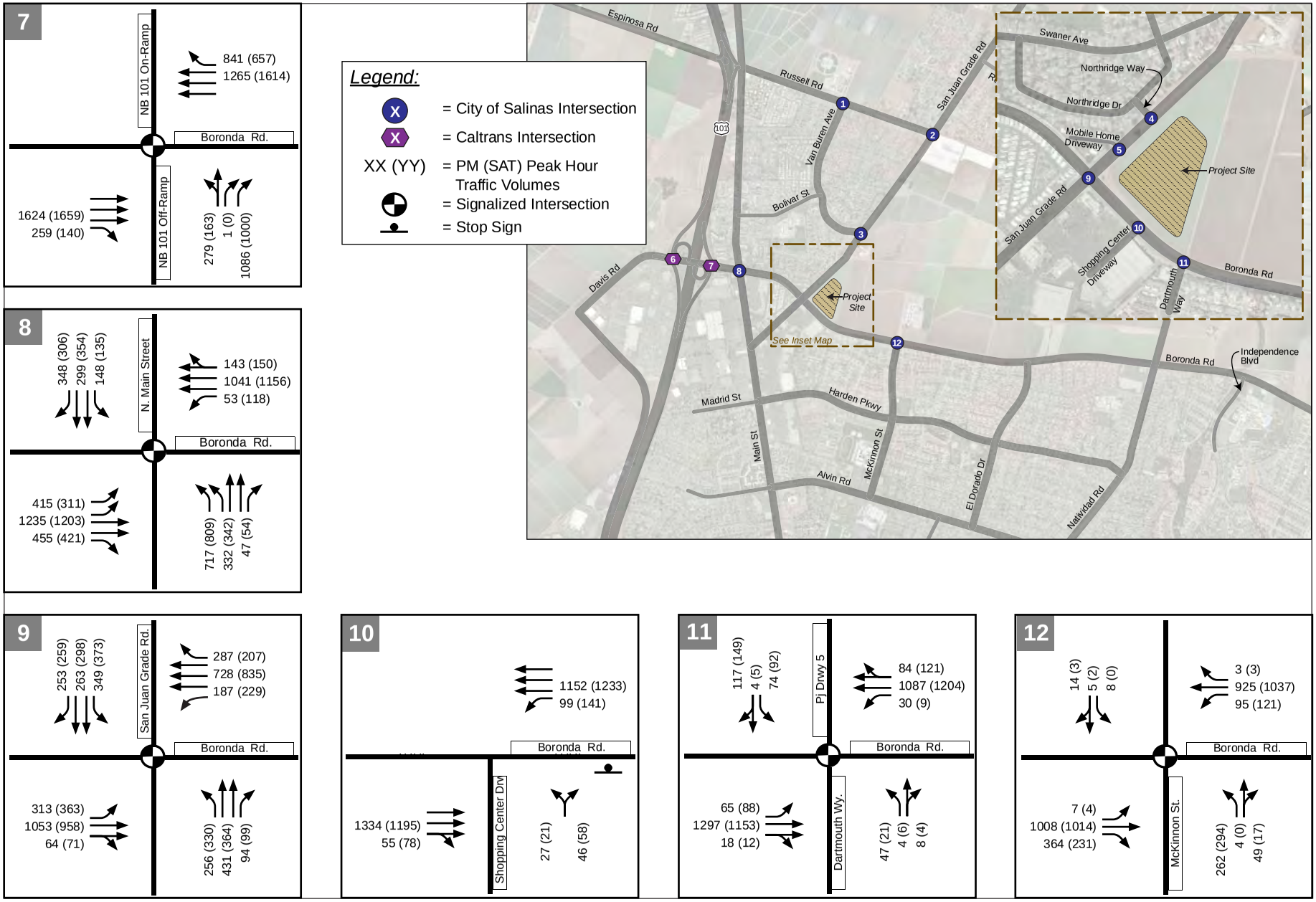
Cumulative With Project Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 11A



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Cumulative With Project Lane Geometries, Traffic Controls and Peak-Hour Intersection Volumes

Figure 11B

CUMULATIVE INTERSECTION IMPACTS AND MITIGATION MEASURES

Based on the City project impact criteria listed above, the following intersections would result in a significant impact under the Cumulative with Project Conditions:

10. Boronda Road and N. Main Street (PM and SAT peak hours)
11. East Boronda Road and San Juan Grade Road (PM and SAT peak hours)
12. East Boronda Road and McKinnon Street (PM and SAT peak hours)

Appendix F contains the corresponding mitigation calculation sheets.

Boronda Road and North Main Street – Operations at this location are projected to be LOS E (59.2 seconds of average delay) and LOS F (95.4 seconds of average delay) during the PM and SAT peak hours, respectively. To operate acceptably (LOS D or better) under the PM peak hour:

- Widen the eastbound approach to include a third eastbound through lane.

Modify the signal timing to include a southbound right-turn overlap phase, which requires prohibition of eastbound u-turns. In addition to the PM peak hour improvements listed above, the SAT peak hour also requires modification of the westbound shared through-right lane into an exclusive through lane and separate right-turn lane. This separate westbound right-turn lane would affect the existing park on the northeast corner and lengthen the pedestrian crossing distance across the east leg of the Boronda Road and North Main Street intersection. Widening intersections and/or roadways for infrequent peak demand creates a vehicle oriented street system that increases the exposure of pedestrians and bicyclist to vehicle traffic. Thus, the Saturday peak hour mitigation is provided for informational purposes because this time period occurs once a week; rather, than a typical mid-week (e.g., Tuesday through Thursday) PM peak hour that occurs three times a week.

Under both the PM and SAT peak hours, additional right-of-way may be needed, which would affect existing parking lots and landscape frontages on each corner. These improvements are not included in the Salinas *Traffic Improvement Program (TIP)*. Thus, payment of the city impact fee will not fulfill the project applicants obligations for mitigating this intersection impact to less-than-significant. The project applicant may either construct the physical improvements and enter into a reimbursement with the City or the City may update the Salinas *Traffic Improvement Program (TIP)* to include these improvements and payment of the updated city impact fee would fulfill the project applicants obligations for mitigating this cumulative intersection impact to less-than-significant. The fair share calculations for this intersection are presented in **Appendix H**. However, unless other funding sources such as contributions from other developers, or city funds are made available, these roadway improvements will not be implemented, and this impact would remain ***significant and unavoidable***. Secondary impacts with widening will include tree removal, lengthening of crosswalks, and/or modification of signal phasing that could increase the crossing distance/time for pedestrians.

East Boronda Road and McKinnon Street – Operations at this location are projected to be LOS E (64.2 sec/veh) and LOS F (89.3 sec/veh) during the PM and SAT peak hours, respectively. To operate acceptably (LOS D or better) and mitigate to ***less-than-significant*** this intersection requires:

- a second through lane in both the eastbound and westbound directions, which is currently being designed by City staff.

This improvement is consistent with the Salinas *General Plan Circulation Element* and the Salinas *Traffic Improvement Program (TIP)* Project Number 20, which widens East Boronda Road to 6-lanes between

San Juan Grade Road and Williams Road. Thus, payment of the city impact fee will fulfill the project applicants obligations for mitigating this intersection impact to **less-than-significant**.

East Boronda Road and San Juan Grade Road – Operations at this location are projected to be LOS F during the PM (86.2 seconds of average delay) and SAT (113.6 seconds of average delay) peak hours. This intersection requires a second left-turn lane on all approaches to mitigate this cumulative impact during PM and SAT peak hours. This improvement is consistent with the *City of Salinas Traffic Improvement Program (TIP)* Project Number 50. Thus, payment of the city impact fee will fulfill the project applicants obligations for mitigating this intersection impact to **less-than-significant**. Secondary impacts with widening will include tree removal, lengthening of crosswalks, and/or modification of signal phasing that could increase the crossing distance/time for pedestrians.

A recommended storage pocket length of 400 feet is presented in the *East Boronda Road and San Juan Grade Road Intersection Analysis* technical memorandum (see **Appendix H**) for the East Boronda Road and San Juan Grade Road intersection. This left turn storage pocket estimate is based on using the average queue distance (based on average of five (5) SimTraffic micro-simulation runs) plus the deceleration distance at 30 miles per hour (mph). In other words, on average vehicles will be able to decelerate from 30 mph and stop at the back of the average queue for the left turn movement within the length of the storage pocket under Year 2030 Current General Plan Conditions. At 30 mph the Caltrans *Highway Design Manual* (HDM) specifies an approximate deceleration distance of 235 feet and the estimated average storage pocket length is approximately 100 to 200 feet for the southbound left turn lane. Thus, the southbound left turn storage pocket is estimated to be 400 feet.

Maintaining left-in-left out access for the mobile home driveway (intersection 5) would shorten the southbound left-turn lane storage pocket at East Boronda Road and San Juan Grade Road to approximately 150 feet, which will cause southbound left-turn lane vehicles to block southbound through vehicles. Accordingly, this is considered a **significant operational impact** during the PM and SAT peak hour. Significant operational impact identified based on SimTraffic queuing analysis of southbound left-turn lane movement at East Boronda Road and San Juan Grade Road intersection. Mitigation of this operational impact requires modification of the San Juan Grade Road and Mobile Home Driveway intersection to right-in-right-out access only. This driveway modification would require a U-turn movement at the signalized intersections on San Juan Grade Road at both Northridge Drive and East Boronda Road. Under Cumulative plus Project Conditions fewer than 10 vehicles make a northbound left into the mobile home driveway during the PM or SAT peak hours. And zero vehicles make an eastbound left turn from the mobile home driveway during the PM and SAT peak hours. The City of Salinas should continue to monitor this location and conduct an engineering study to evaluate the need for turn movement restrictions as appropriate to maintain acceptable intersection operations.

The unsignalized East Boronda Road and Shopping Center Driveway (Walmart) intersection is expected to operate at unacceptable levels during the SAT peak hour. However, this intersection would not meet the Peak Hour Warrant for traffic signal installation during the peak hour. Based on the impact criteria, the proposed project would have a **less-than-significant** impact at this study unsignalized intersection. The City of Salinas should continue to monitor this location and conduct an engineering study to evaluate the need for turn movement restrictions as appropriate to maintain acceptable intersection operations. Under Cumulative plus Project Conditions fewer than 30 vehicles make a northbound left from the shopping center driveway to East Boronda Road during the PM or SAT peak hours.

CUMULATIVE ROADWAY IMPACTS AND MITIGATION MEASURES

Based on the impact criteria listed above, the proposed project will have a significant impact on East Boronda Road between McKinnon Street and Natividad Road under Cumulative with Project Conditions.

East Boronda Road between McKinnon Street and El Dorado Drive – This roadway segment requires widening to a 4-lane arterial to provide acceptable operations (LOS D) during the PM and SAT peak

hours. Widening East Boronda Road to 4-lanes is consistent with the Salinas *General Plan Circulation Element* and the Salinas *Traffic Improvement Program (TIP)* Project Number 20. Thus, payment of the city impact fee will fulfill the project applicants obligations for mitigating this intersection impact to **less-than-significant**.

CUMULATIVE FREEWAY MAINLINE IMPACTS AND MITIGATION MEASURES

The results of the freeway level of service analysis indicate that the proposed project would create a **significant impact** on the following mixed-flow freeway segments during the PM peak hour:

- US 101 between Laurel Drive and Boronda Road
- US 101 between Boronda Road and Russell Road

The widening of US 101 to 6-lanes between the new Russell Road interchange and Harris Road (*City of Salinas Traffic Improvement Program* Project Number 32) would mitigate the project's impact. The TAMC regional project list does not include the widening of US 101 through the City of Salinas in the regional transportation impact fee, nor does the *2010 Monterey County Constrained Regional Transportation Plan*. Unless completely funded with appropriate agreements to implement the feasible roadway improvements discussed above the impacts would be ***significant and unavoidable***. This conclusion is consistent with the significant and unavoidable impacts identified in the *Final Supplement for the Salinas General Plan Final Program Environmental Impact Report* (2007) for these two US 101 mainline segments. As mentioned previously, the proposed project is consistent with land use designations contained in the 2002 General Plan, which were used as a basis for projecting traffic impacts identified in the *Final Supplement for the Salinas General Plan Final Program Environmental Impact Report* (2007). The City made a statement of overriding consideration for these impacts. This conclusion is discussed further in the California Environmental Quality Act (CEQA) documentation for this proposed project.

5. BORONDA ROAD PROGRESSION ANALYSIS

This chapter presents the model calibration and traffic progression estimates on Boronda Road between the US 101 southbound ramps and McKinnon Street during the weekday PM and Saturday midday peak hours under Existing Conditions and Cumulative with Project Conditions and proposed mitigation.

MODEL DEVELOPMENT

Using the *Guidelines for Applying Traffic Microsimulation Modeling Software* (Caltrans, September 2002), the SimTraffic models were validated with respect to traffic volumes, corridor travel times, and queue locations in the Boronda Road corridor near the project site. These models are considered appropriate tools to evaluate the progression on Boronda Road between US 101 and McKinnon Street.

PROGRESSION ANALYSIS

SimTraffic is a stochastic model where different seed numbers generate different driver behaviors (i.e., accepting available gaps for turns, changing lanes, etc.) and system results. Use of a stochastic model allows for the seemingly unpredictable element of individual driver's behavior to be modeled using random scenarios. Multiple runs are needed to account for this variation in the model results and to achieve confidence in the simulated results. Thus, all results presented in this section are the average of five similar model runs out of ten with different seed numbers.

Table 16 compares the Existing travel time estimates to field observations and summarizes the travel time estimates from the SimTraffic model. Existing simulated travel times are similar to existing travel times. With the implementation of the proposed mitigations under the Cumulative With Project, the average travel time increased while the average speed decreased compares to Existing Conditions. Average travel speeds will generally be lower with the proposed mitigations described in Chapter 4 and the increased traffic under Cumulative with Project Conditions compared to Existing Conditions.

TABLE 16
PEAK-HOUR BORONDA ROAD PROGRESSION ANALYSIS

Distance (miles)	Direction	Peak Hour	Field Observed[1]		SimTraffic Model			
					Existing		Cumulative with Project and Proposed Mitigation[1]	
			Average Time (sec)	Average Speed (mph)	Average Time (sec)	Average Speed (mph)	Average Time (sec)	Average Speed (mph)
1.08	WB	PM	212	18.3	261	14.9	362	10.7
		SAT	208	18.7	239	16.3	346	11.2
	EB	PM	285	13.6	325	12.0	334	11.6
		SAT	279	13.9	277	14.0	331	11.7

Notes:
[1] Former Home Depot site was under construction during field observations.
[2] Proposed cumulative mitigation (see Chapter 4) includes: 1) 4-lane East Boronda Road between Dartmouth Way and Natividad Road, 2) dual left turn lanes on all approaches at East Boronda Road/San Juan Grade Road, 3) 3rd eastbound through lane, separate westbound right turn and southbound right-turn overlap phase at intersection of Boronda Road and North Main Street.
Source: Fehr & Peers, October 2010.

APPENDIX A:
EXISTING TRAFFIC COUNTS

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Groups Printed- Vehicles

	VAN BUREN AVE Southbound					RUSSELL RD Westbound					VAN BUREN AVE Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	15	2	4	0	21	4	30	1	0	35	3	0	7	0	10	10	38	10	0	58	124
11:15 AM	6	9	9	0	24	7	39	3	0	49	4	2	8	0	14	10	45	14	0	69	156
11:30 AM	5	1	6	0	12	16	32	1	0	49	9	5	9	0	23	8	44	15	0	67	151
11:45 AM	5	7	16	0	28	12	29	1	0	42	5	1	7	0	13	6	38	13	0	57	140
Total	31	19	35	0	85	39	130	6	0	175	21	8	31	0	60	34	165	52	0	251	571
12:00 PM	5	6	3	0	14	11	31	5	0	47	7	2	1	0	10	7	36	11	0	54	125
12:15 PM	11	3	12	0	26	8	32	3	0	43	3	1	8	0	12	15	42	15	0	72	153
12:30 PM	20	8	14	0	42	10	39	8	0	57	5	1	8	0	14	13	47	7	0	67	180
12:45 PM	13	1	11	0	25	10	44	8	0	62	5	0	11	0	16	17	42	9	0	68	171
Total	49	18	40	0	107	39	146	24	0	209	20	4	28	0	52	52	167	42	0	261	629
Grand Total	80	37	75	0	192	78	276	30	0	384	41	12	59	0	112	86	332	94	0	512	1200
Apprch %	41.7	19.3	39.1	0		20.3	71.9	7.8	0		36.6	10.7	52.7	0		16.8	64.8	18.4	0		
Total %	6.7	3.1	6.2	0	16	6.5	23	2.5	0	32	3.4	1	4.9	0	9.3	7.2	27.7	7.8	0	42.7	

	VAN BUREN AVE Southbound					RUSSELL RD Westbound					VAN BUREN AVE Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	5	6	3	0	14	11	31	5	0	47	7	2	1	0	10	7	36	11	0	54	125
12:15 PM	11	3	12	0	26	8	32	3	0	43	3	1	8	0	12	15	42	15	0	72	153
12:30 PM	20	8	14	0	42	10	39	8	0	57	5	1	8	0	14	13	47	7	0	67	180
12:45 PM	13	1	11	0	25	10	44	8	0	62	5	0	11	0	16	17	42	9	0	68	171
Total Volume	49	18	40	0	107	39	146	24	0	209	20	4	28	0	52	52	167	42	0	261	629
% App. Total	45.8	16.8	37.4	0		18.7	69.9	11.5	0		38.5	7.7	53.8	0		19.9	64	16.1	0		
PHF	.613	.563	.714	.000	.637	.886	.830	.750	.000	.843	.714	.500	.636	.000	.813	.765	.888	.700	.000	.906	.874

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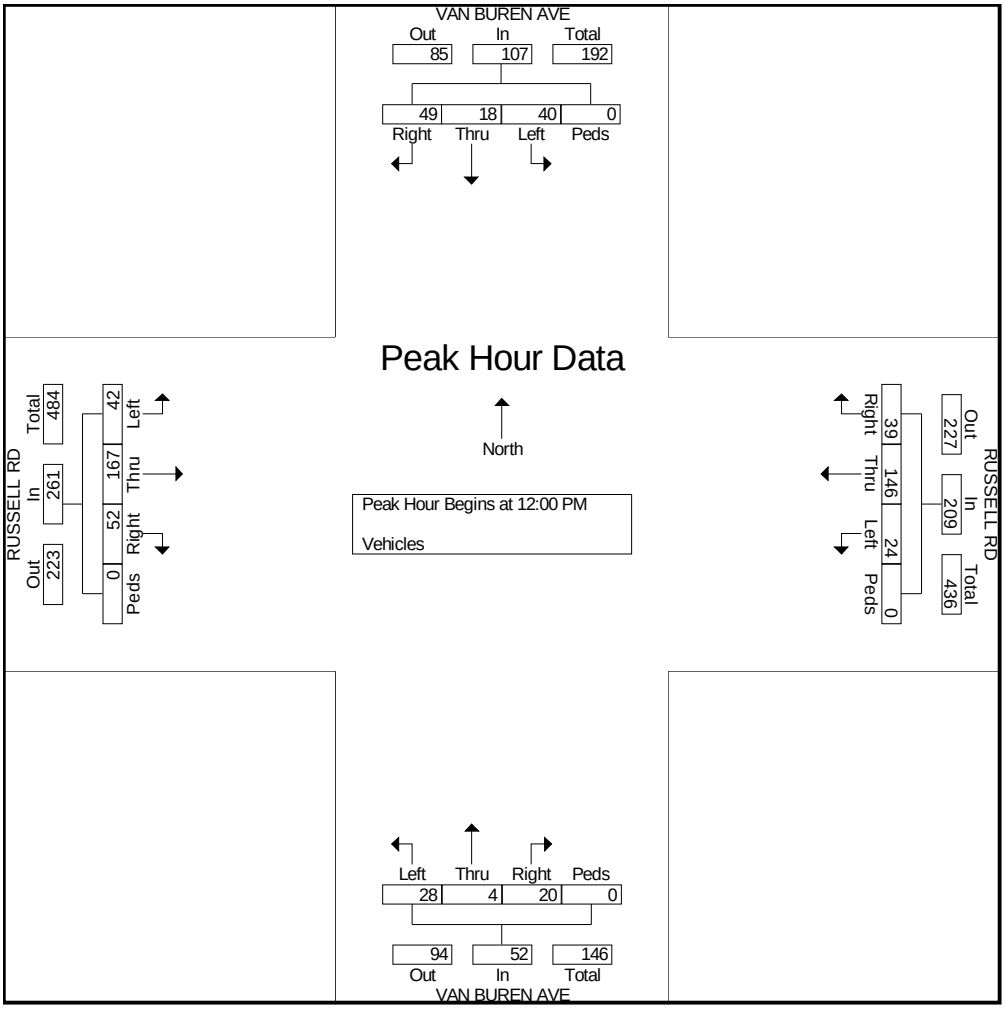

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Groups Printed- Vehicles

	VAN BUREN AVE Southbound					RUSSEL RD Westbound					VAN BUREN AVE Northbound					RUSSEL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	2	2	5	0	9	6	52	7	0	65	2	4	5	0	11	20	71	6	0	97	182
04:15 PM	4	9	10	0	23	13	31	5	0	49	4	6	5	0	15	20	77	3	0	100	187
04:30 PM	3	3	13	0	19	8	34	3	0	45	5	5	8	0	18	27	66	1	0	94	176
04:45 PM	6	1	13	0	20	8	45	4	0	57	7	0	5	0	12	23	68	3	0	94	183
Total	15	15	41	0	71	35	162	19	0	216	18	15	23	0	56	90	282	13	0	385	728
05:00 PM	2	3	10	0	15	8	46	6	0	60	2	2	4	0	8	30	69	2	0	101	184
05:15 PM	3	0	5	0	8	5	36	9	0	50	2	1	7	0	10	38	103	2	0	143	211
05:30 PM	2	1	7	0	10	6	46	7	0	59	11	2	6	0	19	23	82	4	0	109	197
05:45 PM	2	2	9	0	13	9	42	3	0	54	6	1	3	0	10	19	86	3	0	108	185
Total	9	6	31	0	46	28	170	25	0	223	21	6	20	0	47	110	340	11	0	461	777
Grand Total	24	21	72	0	117	63	332	44	0	439	39	21	43	0	103	200	622	24	0	846	1505
Apprch %	20.5	17.9	61.5	0		14.4	75.6	10	0		37.9	20.4	41.7	0		23.6	73.5	2.8	0		
Total %	1.6	1.4	4.8	0	7.8	4.2	22.1	2.9	0	29.2	2.6	1.4	2.9	0	6.8	13.3	41.3	1.6	0	56.2	

	VAN BUREN AVE Southbound					RUSSEL RD Westbound					VAN BUREN AVE Northbound					RUSSEL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	3	10	0	15	8	46	6	0	60	2	2	4	0	8	30	69	2	0	101	184
05:15 PM	3	0	5	0	8	5	36	9	0	50	2	1	7	0	10	38	103	2	0	143	211
05:30 PM	2	1	7	0	10	6	46	7	0	59	11	2	6	0	19	23	82	4	0	109	197
05:45 PM	2	2	9	0	13	9	42	3	0	54	6	1	3	0	10	19	86	3	0	108	185
Total Volume	9	6	31	0	46	28	170	25	0	223	21	6	20	0	47	110	340	11	0	461	777
% App. Total	19.6	13	67.4	0		12.6	76.2	11.2	0		44.7	12.8	42.6	0		23.9	73.8	2.4	0		
PHF	.750	.500	.775	.000	.767	.778	.924	.694	.000	.929	.477	.750	.714	.000	.618	.724	.825	.688	.000	.806	.921

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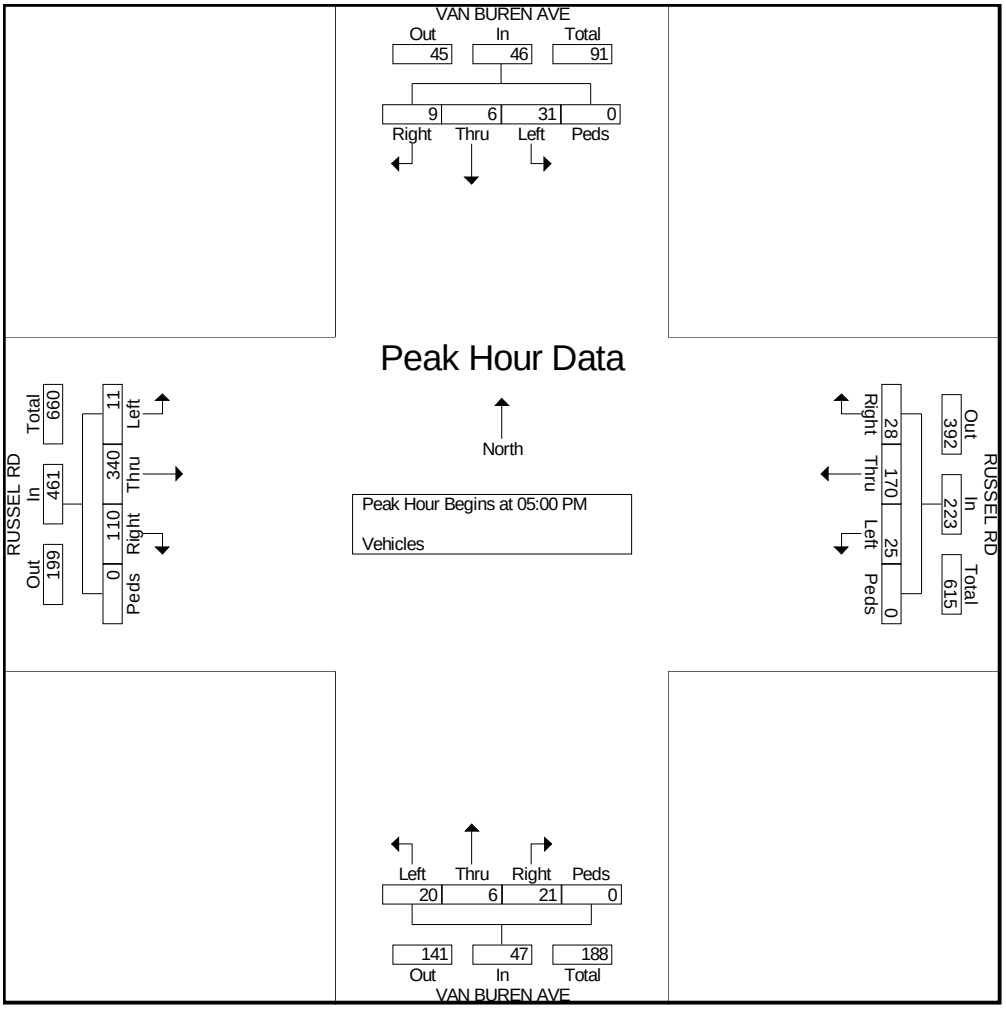

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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	21	57	1	0	79	0	0	0	0	0	0	45	19	0	64	7	0	28	0	35	178
11:15 AM	25	58	1	0	84	0	0	0	0	0	0	37	21	0	58	13	0	37	0	50	192
11:30 AM	29	56	2	0	87	0	0	0	0	0	0	37	32	0	69	24	0	33	0	57	213
11:45 AM	18	55	2	0	75	0	0	0	0	0	0	47	26	0	73	19	0	26	0	45	193
Total	93	226	6	0	325	0	0	0	0	0	0	166	98	0	264	63	0	124	0	187	776
12:00 PM	27	59	0	0	86	0	0	0	0	0	0	60	28	0	88	15	0	25	0	40	214
12:15 PM	23	66	2	0	91	0	0	0	0	0	0	45	22	0	67	19	0	38	0	57	215
12:30 PM	34	62	0	0	96	0	0	0	0	0	0	34	18	0	52	26	0	36	0	62	210
12:45 PM	32	54	0	0	86	0	0	0	0	0	0	49	28	0	77	21	0	30	0	51	214
Total	116	241	2	0	359	0	0	0	0	0	0	188	96	0	284	81	0	129	0	210	853
Grand Total	209	467	8	0	684	0	0	0	0	0	0	354	194	0	548	144	0	253	0	397	1629
Apprch %	30.6	68.3	1.2	0		0	0	0	0		0	64.6	35.4	0		36.3	0	63.7	0		
Total %	12.8	28.7	0.5	0	42	0	0	0	0	0	0	21.7	11.9	0	33.6	8.8	0	15.5	0	24.4	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	27	59	0	0	86	0	0	0	0	0	0	60	28	0	88	15	0	25	0	40	214
12:15 PM	23	66	2	0	91	0	0	0	0	0	0	45	22	0	67	19	0	38	0	57	215
12:30 PM	34	62	0	0	96	0	0	0	0	0	0	34	18	0	52	26	0	36	0	62	210
12:45 PM	32	54	0	0	86	0	0	0	0	0	0	49	28	0	77	21	0	30	0	51	214
Total Volume	116	241	2	0	359	0	0	0	0	0	0	188	96	0	284	81	0	129	0	210	853
% App. Total	32.3	67.1	0.6	0		0	0	0	0		0	66.2	33.8	0		38.6	0	61.4	0		
PHF	.853	.913	.250	.000	.935	.000	.000	.000	.000	.000	.000	.783	.857	.000	.807	.779	.000	.849	.000	.847	.992

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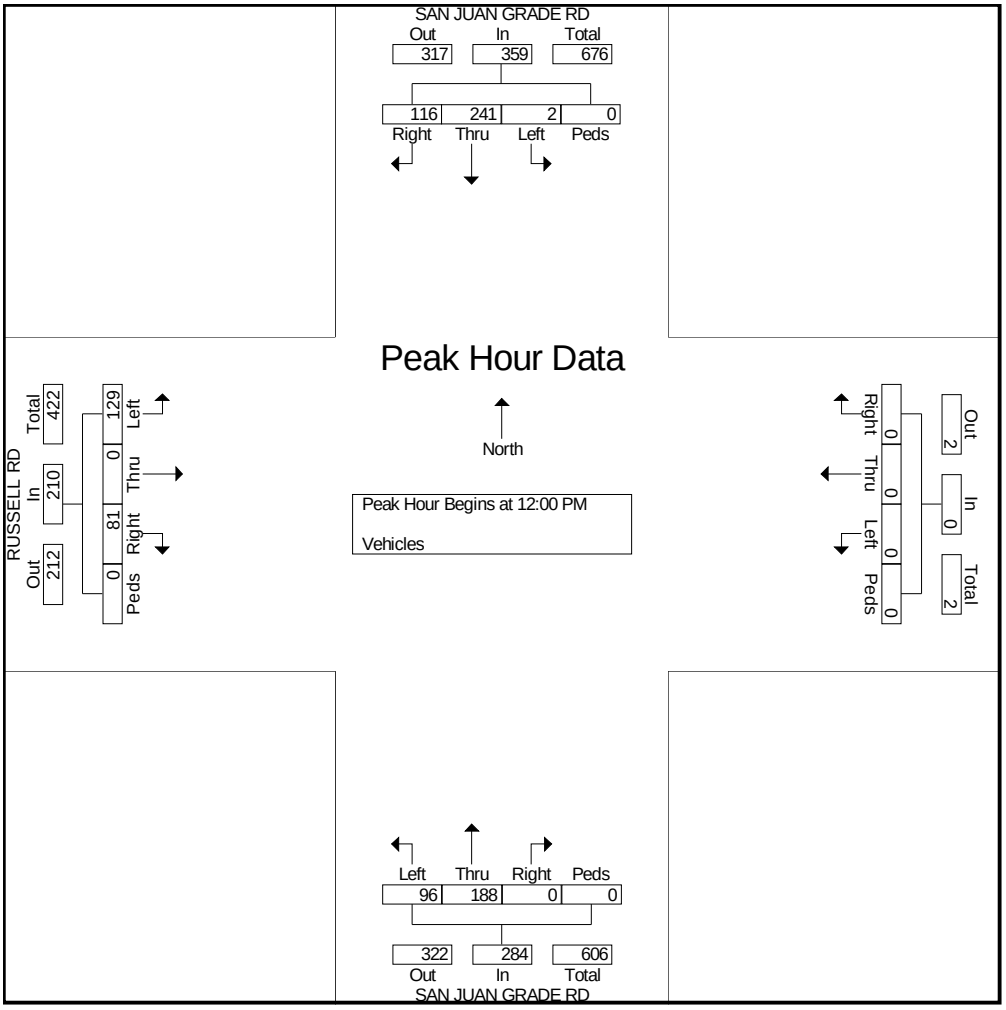

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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	33	56	0	0	89	0	0	0	0	0	0	32	25	0	57	21	0	52	0	73	219
04:15 PM	40	51	1	0	92	0	0	0	0	0	0	35	26	0	61	21	0	66	0	87	240
04:30 PM	26	60	2	0	88	0	0	0	0	0	0	41	26	0	67	29	0	83	0	112	267
04:45 PM	39	83	4	0	126	0	0	0	0	0	0	62	29	0	91	20	0	87	0	107	324
Total	138	250	7	0	395	0	0	0	0	0	0	170	106	0	276	91	0	288	0	379	1050
05:00 PM	39	79	0	0	118	0	0	0	0	0	0	58	27	0	85	17	0	80	0	97	300
05:15 PM	36	71	0	0	107	0	0	0	0	0	0	55	36	0	91	21	0	104	0	125	323
05:30 PM	44	92	1	0	137	2	0	0	0	2	0	74	38	0	112	14	0	100	0	114	365
05:45 PM	50	82	1	0	133	0	0	0	0	0	0	80	20	0	100	25	0	84	0	109	342
Total	169	324	2	0	495	2	0	0	0	2	0	267	121	0	388	77	0	368	0	445	1330
Grand Total	307	574	9	0	890	2	0	0	0	2	0	437	227	0	664	168	0	656	0	824	2380
Apprch %	34.5	64.5	1	0		100	0	0	0		0	65.8	34.2	0		20.4	0	79.6	0		
Total %	12.9	24.1	0.4	0	37.4	0.1	0	0	0	0.1	0	18.4	9.5	0	27.9	7.1	0	27.6	0	34.6	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					RUSSELL RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	39	79	0	0	118	0	0	0	0	0	0	58	27	0	85	17	0	80	0	97	300
05:15 PM	36	71	0	0	107	0	0	0	0	0	0	55	36	0	91	21	0	104	0	125	323
05:30 PM	44	92	1	0	137	2	0	0	0	2	0	74	38	0	112	14	0	100	0	114	365
05:45 PM	50	82	1	0	133	0	0	0	0	0	0	80	20	0	100	25	0	84	0	109	342
Total Volume	169	324	2	0	495	2	0	0	0	2	0	267	121	0	388	77	0	368	0	445	1330
% App. Total	34.1	65.5	0.4	0		100	0	0	0		0	68.8	31.2	0		17.3	0	82.7	0		
PHF	.845	.880	.500	.000	.903	.250	.000	.000	.000	.250	.000	.834	.796	.000	.866	.770	.000	.885	.000	.890	.911

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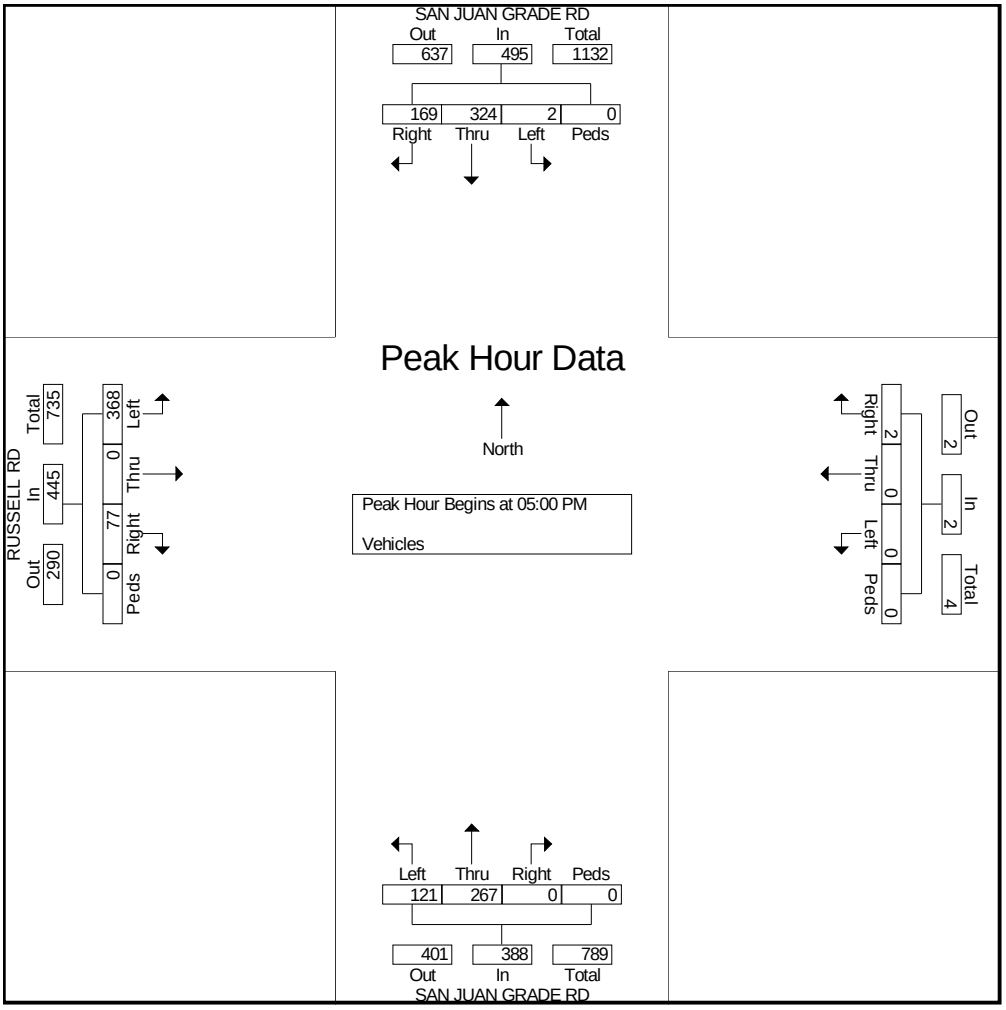

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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	2	59	0	0	61	0	0	0	0	0	0	57	22	0	79	17	0	3	0	20	160
11:15 AM	4	76	0	0	80	0	0	0	0	0	0	57	20	0	77	18	0	1	0	19	176
11:30 AM	5	73	0	0	78	0	0	0	0	0	0	54	17	0	71	21	0	1	0	22	171
11:45 AM	2	74	0	0	76	0	0	0	0	0	0	78	23	0	101	25	0	0	0	25	202
Total	13	282	0	0	295	0	0	0	0	0	0	246	82	0	328	81	0	5	0	86	709
12:00 PM	3	72	0	0	75	0	0	0	0	0	0	84	16	0	100	19	0	3	0	22	197
12:15 PM	4	82	0	0	86	0	0	0	0	0	0	61	20	0	81	21	0	3	0	24	191
12:30 PM	3	79	0	0	82	0	0	0	0	0	0	44	15	0	59	28	0	1	0	29	170
12:45 PM	0	79	0	0	79	0	0	0	0	0	0	72	15	0	87	27	0	5	0	32	198
Total	10	312	0	0	322	0	0	0	0	0	0	261	66	0	327	95	0	12	0	107	756
Grand Total	23	594	0	0	617	0	0	0	0	0	0	507	148	0	655	176	0	17	0	193	1465
Apprch %	3.7	96.3	0	0		0	0	0	0		0	77.4	22.6	0		91.2	0	8.8	0		
Total %	1.6	40.5	0	0	42.1	0	0	0	0	0	0	34.6	10.1	0	44.7	12	0	1.2	0	13.2	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	5	73	0	0	78	0	0	0	0	0	0	54	17	0	71	21	0	1	0	22	171
11:45 AM	2	74	0	0	76	0	0	0	0	0	0	78	23	0	101	25	0	0	0	25	202
12:00 PM	3	72	0	0	75	0	0	0	0	0	0	84	16	0	100	19	0	3	0	22	197
12:15 PM	4	82	0	0	86	0	0	0	0	0	0	61	20	0	81	21	0	3	0	24	191
Total Volume	14	301	0	0	315	0	0	0	0	0	0	277	76	0	353	86	0	7	0	93	761
% App. Total	4.4	95.6	0	0		0	0	0	0		0	78.5	21.5	0		92.5	0	7.5	0		
PHF	.700	.918	.000	.000	.916	.000	.000	.000	.000	.000	.000	.824	.826	.000	.874	.860	.000	.583	.000	.930	.942

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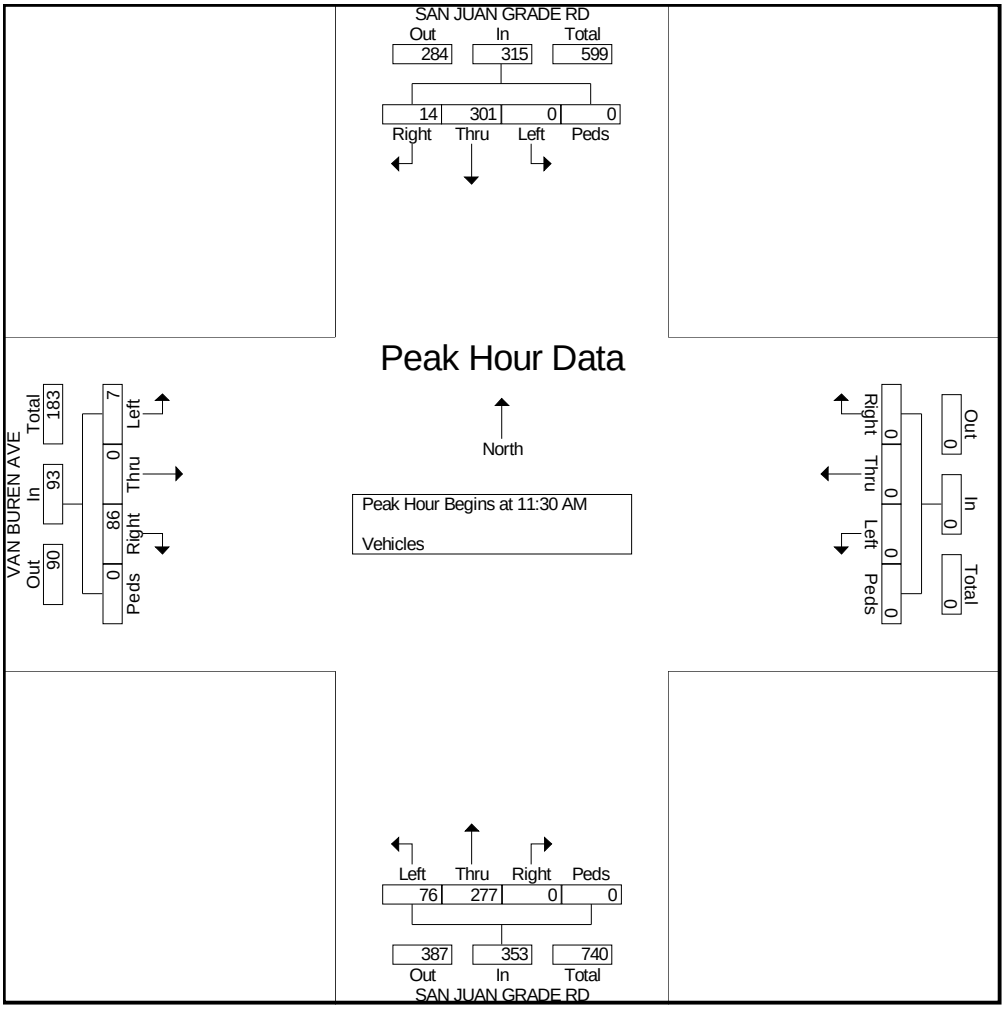

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File Name : 3PM FINAL
Site Code : 00000003
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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	5	84	0	0	89	0	0	0	0	0	0	70	33	0	103	27	0	3	0	30	222
04:15 PM	1	66	0	0	67	0	0	0	0	0	0	65	26	0	91	24	0	4	0	28	186
04:30 PM	4	78	0	0	82	0	0	0	0	0	0	57	17	0	74	23	0	1	0	24	180
04:45 PM	5	93	0	0	98	0	0	0	0	0	0	81	28	0	109	22	0	2	0	24	231
Total	15	321	0	0	336	0	0	0	0	0	0	273	104	0	377	96	0	10	0	106	819
05:00 PM	1	84	0	0	85	0	0	0	0	0	0	76	27	0	103	25	0	0	0	25	213
05:15 PM	5	74	0	0	79	0	0	0	0	0	0	97	37	0	134	31	0	2	0	33	246
05:30 PM	1	97	0	0	98	0	0	0	0	0	0	88	28	0	116	27	0	2	0	29	243
05:45 PM	7	93	0	0	100	0	0	0	0	0	0	89	21	0	110	19	0	1	0	20	230
Total	14	348	0	0	362	0	0	0	0	0	0	350	113	0	463	102	0	5	0	107	932
Grand Total	29	669	0	0	698	0	0	0	0	0	0	623	217	0	840	198	0	15	0	213	1751
Apprch %	4.2	95.8	0	0		0	0	0	0		0	74.2	25.8	0		93	0	7	0		
Total %	1.7	38.2	0	0	39.9	0	0	0	0	0	0	35.6	12.4	0	48	11.3	0	0.9	0	12.2	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					VAN BUREN AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	5	93	0	0	98	0	0	0	0	0	0	81	28	0	109	22	0	2	0	24	231
05:00 PM	1	84	0	0	85	0	0	0	0	0	0	76	27	0	103	25	0	0	0	25	213
05:15 PM	5	74	0	0	79	0	0	0	0	0	0	97	37	0	134	31	0	2	0	33	246
05:30 PM	1	97	0	0	98	0	0	0	0	0	0	88	28	0	116	27	0	2	0	29	243
Total Volume	12	348	0	0	360	0	0	0	0	0	0	342	120	0	462	105	0	6	0	111	933
% App. Total	3.3	96.7	0	0		0	0	0	0		0	74	26	0		94.6	0	5.4	0		
PHF	.600	.897	.000	.000	.918	.000	.000	.000	.000	.000	.000	.881	.811	.000	.862	.847	.000	.750	.000	.841	.948

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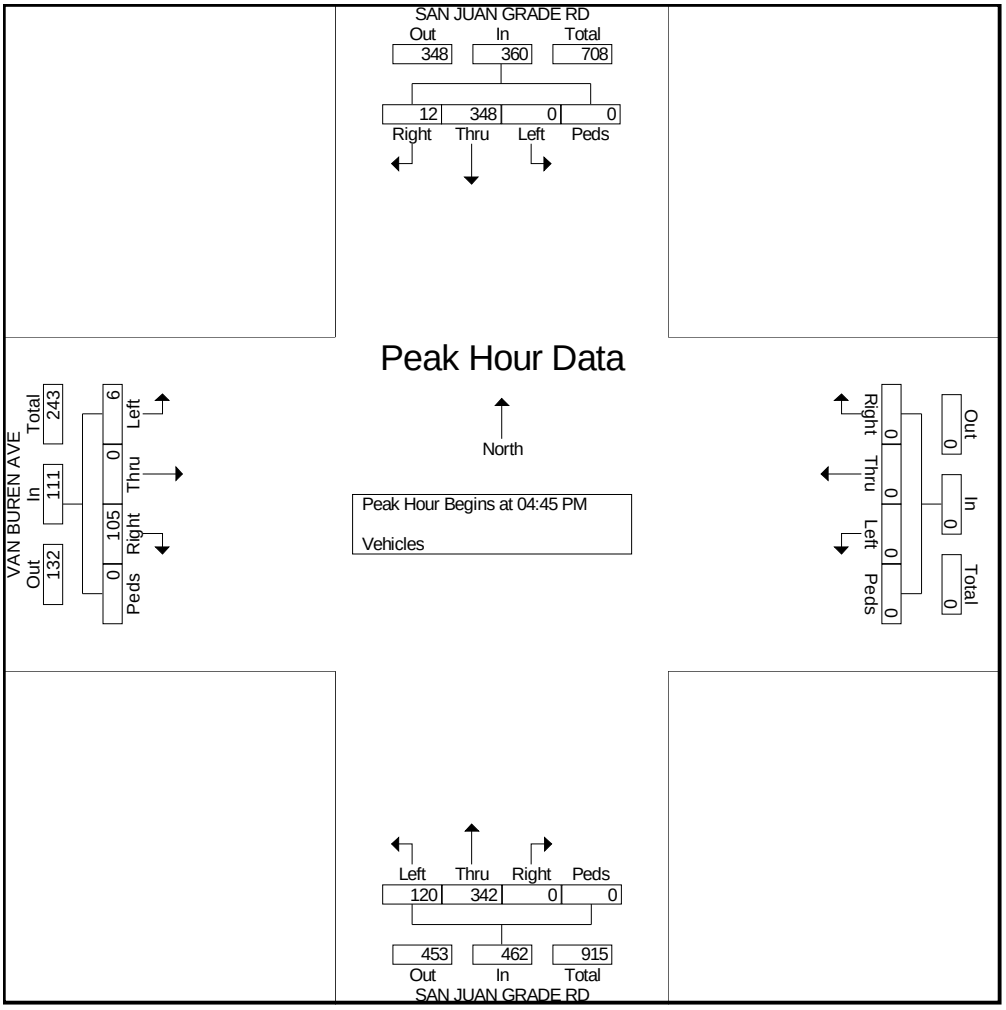

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File Name : 4MID FINAL
Site Code : 00000004
Start Date : 3/13/2010
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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					NORTHRIDGE WY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	89	0	0	89	0	0	0	0	0	0	81	14	0	95	15	0	1	0	16	200
11:15 AM	1	95	0	0	96	0	0	0	0	0	0	78	18	0	96	9	0	0	0	9	201
11:30 AM	2	91	0	0	93	0	0	0	0	0	0	72	20	0	92	20	0	3	0	23	208
11:45 AM	2	97	0	0	99	0	0	0	0	0	0	105	17	0	122	15	0	2	0	17	238
Total	5	372	0	0	377	0	0	0	0	0	0	336	69	0	405	59	0	6	0	65	847
12:00 PM	2	99	0	0	101	0	0	0	0	0	0	90	18	0	108	14	0	0	0	14	223
12:15 PM	0	105	0	0	105	0	0	0	0	0	0	74	14	0	88	25	0	1	0	26	219
12:30 PM	0	100	0	0	100	0	0	0	0	0	0	74	16	0	90	28	0	0	0	28	218
12:45 PM	0	97	0	0	97	0	0	0	0	0	0	81	15	0	96	21	0	0	0	21	214
Total	2	401	0	0	403	0	0	0	0	0	0	319	63	0	382	88	0	1	0	89	874
Grand Total	7	773	0	0	780	0	0	0	0	0	0	655	132	0	787	147	0	7	0	154	1721
Apprch %	0.9	99.1	0	0		0	0	0	0		0	83.2	16.8	0		95.5	0	4.5	0		
Total %	0.4	44.9	0	0	45.3	0	0	0	0	0	0	38.1	7.7	0	45.7	8.5	0	0.4	0	8.9	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					NORTHRIDGE WY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	2	97	0	0	99	0	0	0	0	0	0	105	17	0	122	15	0	2	0	17	238
12:00 PM	2	99	0	0	101	0	0	0	0	0	0	90	18	0	108	14	0	0	0	14	223
12:15 PM	0	105	0	0	105	0	0	0	0	0	0	74	14	0	88	25	0	1	0	26	219
12:30 PM	0	100	0	0	100	0	0	0	0	0	0	74	16	0	90	28	0	0	0	28	218
Total Volume	4	401	0	0	405	0	0	0	0	0	0	343	65	0	408	82	0	3	0	85	898
% App. Total	1	99	0	0		0	0	0	0		0	84.1	15.9	0		96.5	0	3.5	0		
PHF	.500	.955	.000	.000	.964	.000	.000	.000	.000	.000	.000	.817	.903	.000	.836	.732	.000	.375	.000	.759	.943

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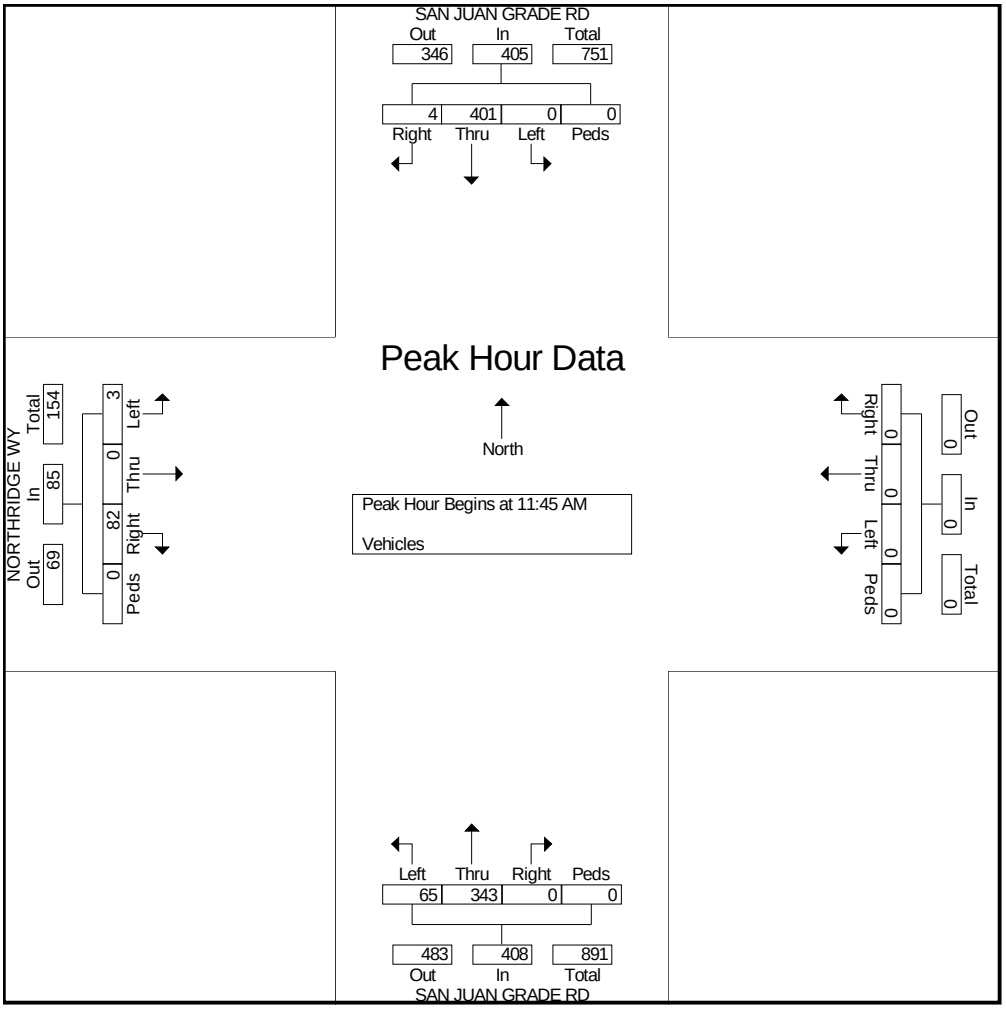

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File Name : 4PM FINAL
Site Code : 00000004
Start Date : 2/25/2010
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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					NORTHRIDGE WY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	106	0	0	107	0	0	0	0	0	0	104	24	0	128	29	0	1	0	30	265
04:15 PM	0	88	0	0	88	0	0	0	0	0	0	84	32	0	116	18	0	1	0	19	223
04:30 PM	1	92	0	0	93	0	0	0	0	0	0	69	17	0	86	23	0	0	0	23	202
04:45 PM	0	119	0	0	119	0	0	0	0	0	0	99	10	0	109	24	0	0	0	24	252
Total	2	405	0	0	407	0	0	0	0	0	0	356	83	0	439	94	0	2	0	96	942
05:00 PM	2	109	0	0	111	0	0	0	0	0	0	106	34	0	140	16	0	0	0	16	267
05:15 PM	0	99	0	0	99	0	0	0	0	0	0	124	18	0	142	17	0	0	0	17	258
05:30 PM	2	112	0	0	114	0	0	0	0	0	0	109	33	0	142	31	0	3	0	34	290
05:45 PM	1	121	0	0	122	0	0	0	0	0	0	112	26	0	138	37	0	3	0	40	300
Total	5	441	0	0	446	0	0	0	0	0	0	451	111	0	562	101	0	6	0	107	1115
Grand Total	7	846	0	0	853	0	0	0	0	0	0	807	194	0	1001	195	0	8	0	203	2057
Apprch %	0.8	99.2	0	0		0	0	0	0		0	80.6	19.4	0		96.1	0	3.9	0		
Total %	0.3	41.1	0	0	41.5	0	0	0	0	0	0	39.2	9.4	0	48.7	9.5	0	0.4	0	9.9	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					NORTHRIDGE WY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	109	0	0	111	0	0	0	0	0	0	106	34	0	140	16	0	0	0	16	267
05:15 PM	0	99	0	0	99	0	0	0	0	0	0	124	18	0	142	17	0	0	0	17	258
05:30 PM	2	112	0	0	114	0	0	0	0	0	0	109	33	0	142	31	0	3	0	34	290
05:45 PM	1	121	0	0	122	0	0	0	0	0	0	112	26	0	138	37	0	3	0	40	300
Total Volume	5	441	0	0	446	0	0	0	0	0	0	451	111	0	562	101	0	6	0	107	1115
% App. Total	1.1	98.9	0	0		0	0	0	0		0	80.2	19.8	0		94.4	0	5.6	0		
PHF	.625	.911	.000	.000	.914	.000	.000	.000	.000	.000	.000	.909	.816	.000	.989	.682	.000	.500	.000	.669	.929

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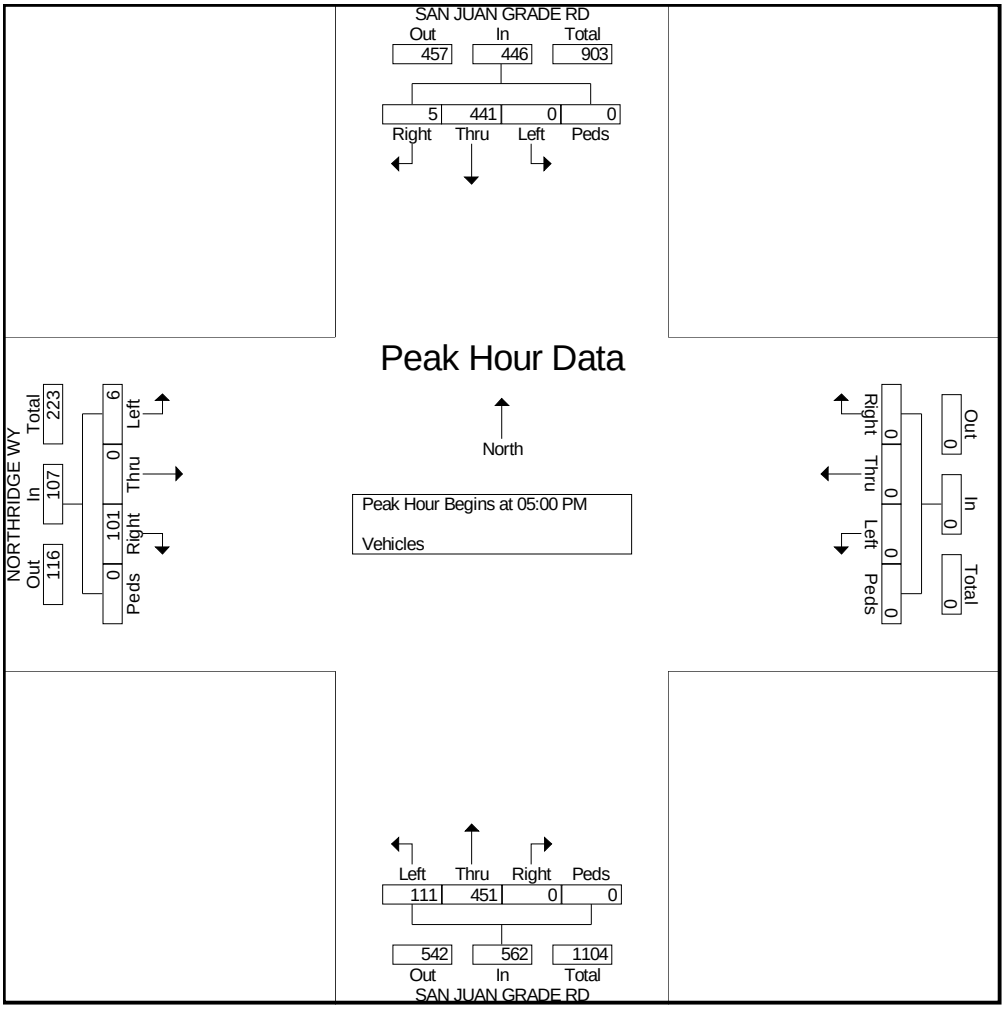

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File Name : 5MID FINAL
Site Code : 00000005
Start Date : 3/13/2010
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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					MOBILE HOME DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	101	0	0	101	0	0	0	0	0	0	96	0	0	96	1	0	0	0	1	198
11:15 AM	0	102	0	0	102	0	0	0	0	0	0	92	2	0	94	0	0	1	0	1	197
11:30 AM	0	93	0	0	93	0	0	0	0	0	0	94	1	0	95	1	0	0	0	1	189
11:45 AM	0	115	0	0	115	0	0	0	0	0	0	119	0	0	119	0	0	0	0	0	234
Total	0	411	0	0	411	0	0	0	0	0	0	401	3	0	404	2	0	1	0	3	818
12:00 PM	0	105	0	0	105	0	0	0	0	0	0	111	0	0	111	0	0	0	0	0	216
12:15 PM	0	123	0	0	123	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	216
12:30 PM	0	136	0	0	136	0	0	0	0	0	0	91	1	0	92	0	0	0	0	0	228
12:45 PM	0	121	0	0	121	0	0	0	0	0	0	98	0	0	98	0	0	0	0	0	219
Total	0	485	0	0	485	0	0	0	0	0	0	393	1	0	394	0	0	0	0	0	879
Grand Total	0	896	0	0	896	0	0	0	0	0	0	794	4	0	798	2	0	1	0	3	1697
Apprch %	0	100	0	0		0	0	0	0		0	99.5	0.5	0		66.7	0	33.3	0		
Total %	0	52.8	0	0	52.8	0	0	0	0	0	0	46.8	0.2	0	47	0.1	0	0.1	0	0.2	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					MOBILE HOME DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	115	0	0	115	0	0	0	0	0	0	119	0	0	119	0	0	0	0	0	234
12:00 PM	0	105	0	0	105	0	0	0	0	0	0	111	0	0	111	0	0	0	0	0	216
12:15 PM	0	123	0	0	123	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	216
12:30 PM	0	136	0	0	136	0	0	0	0	0	0	91	1	0	92	0	0	0	0	0	228
Total Volume	0	479	0	0	479	0	0	0	0	0	0	414	1	0	415	0	0	0	0	0	894
% App. Total	0	100	0	0		0	0	0	0		0	99.8	0.2	0		0	0	0	0		
PHF	.000	.881	.000	.000	.881	.000	.000	.000	.000	.000	.000	.870	.250	.000	.872	.000	.000	.000	.000	.000	.955

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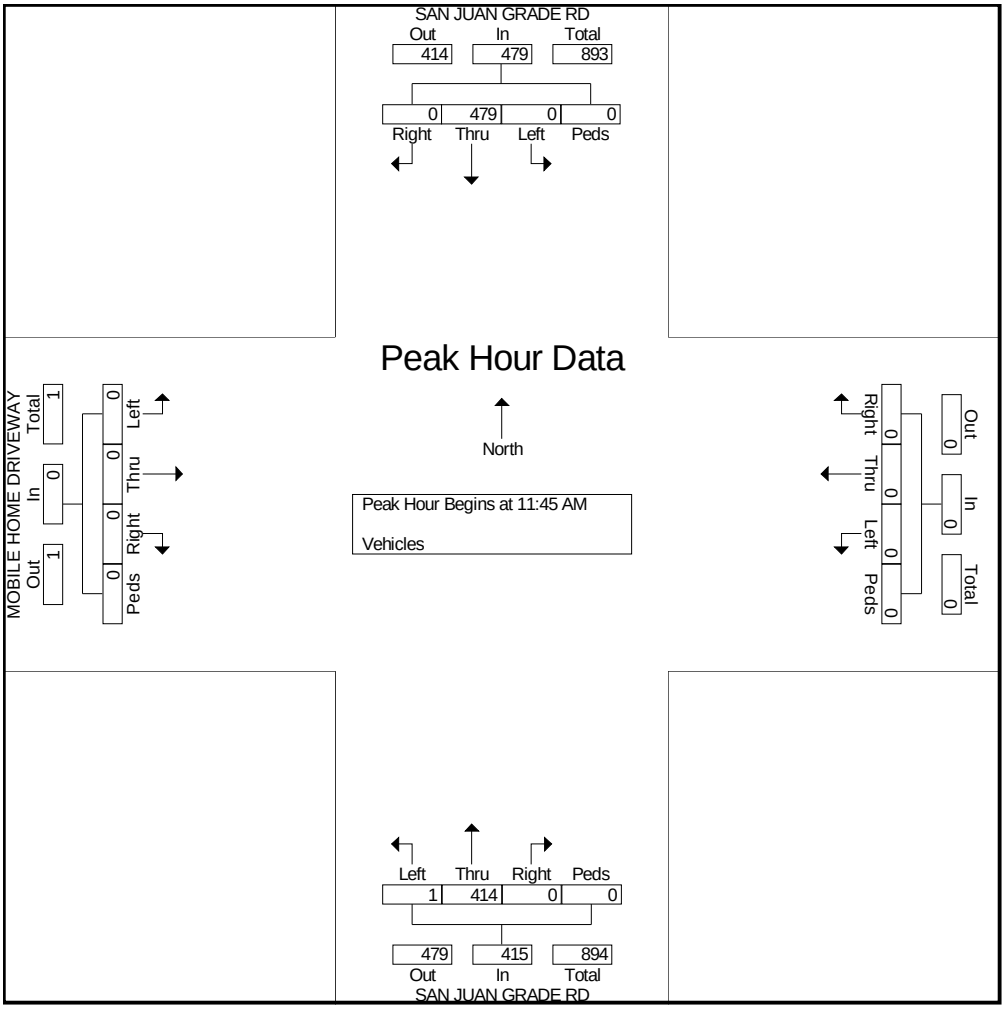

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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					MOBILE HOME DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	131	0	0	131	0	0	0	0	0	0	121	0	0	121	0	0	0	0	0	252
04:15 PM	0	108	0	0	108	0	0	0	0	0	0	117	0	0	117	0	0	0	0	0	225
04:30 PM	0	117	0	0	117	0	0	0	0	0	0	91	0	0	91	0	0	3	0	3	211
04:45 PM	0	145	0	0	145	0	0	0	0	0	0	105	3	0	108	0	0	0	0	0	253
Total	0	501	0	0	501	0	0	0	0	0	0	434	3	0	437	0	0	3	0	3	941
05:00 PM	0	126	0	0	126	0	0	0	0	0	0	141	2	0	143	1	0	0	0	1	270
05:15 PM	0	117	0	0	117	0	0	0	0	0	0	133	2	0	135	0	0	0	0	0	252
05:30 PM	0	137	0	0	137	1	0	0	0	1	0	137	0	0	137	2	0	0	0	2	277
05:45 PM	0	161	0	0	161	0	0	0	0	0	0	141	2	0	143	1	0	0	0	1	305
Total	0	541	0	0	541	1	0	0	0	1	0	552	6	0	558	4	0	0	0	4	1104
Grand Total	0	1042	0	0	1042	1	0	0	0	1	0	986	9	0	995	4	0	3	0	7	2045
Apprch %	0	100	0	0		100	0	0	0		0	99.1	0.9	0		57.1	0	42.9	0		
Total %	0	51	0	0	51	0	0	0	0	0	0	48.2	0.4	0	48.7	0.2	0	0.1	0	0.3	

	SAN JUAN GRADE RD Southbound					Westbound					SAN JUAN GRADE RD Northbound					MOBILE HOME DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	126	0	0	126	0	0	0	0	0	0	141	2	0	143	1	0	0	0	1	270
05:15 PM	0	117	0	0	117	0	0	0	0	0	0	133	2	0	135	0	0	0	0	0	252
05:30 PM	0	137	0	0	137	1	0	0	0	1	0	137	0	0	137	2	0	0	0	2	277
05:45 PM	0	161	0	0	161	0	0	0	0	0	0	141	2	0	143	1	0	0	0	1	305
Total Volume	0	541	0	0	541	1	0	0	0	1	0	552	6	0	558	4	0	0	0	4	1104
% App. Total	0	100	0	0		100	0	0	0		0	98.9	1.1	0		100	0	0	0		
PHF	.000	.840	.000	.000	.840	.250	.000	.000	.000	.250	.000	.979	.750	.000	.976	.500	.000	.000	.000	.500	.905

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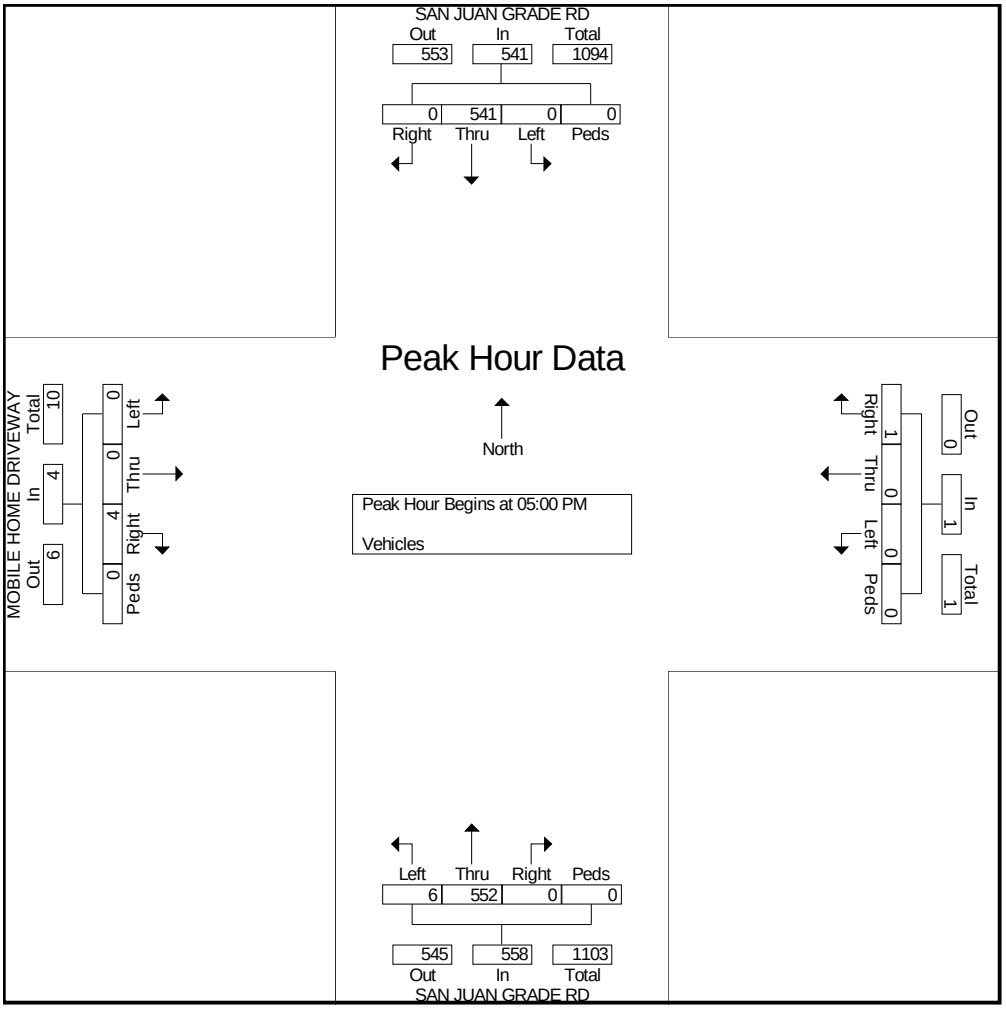

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File Name : 6MID FINAL
Site Code : 00000006
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Groups Printed- Vehicles

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	37	1	152	0	190	135	181	0	0	316	0	0	0	0	0	26	153	0	0	179	685
11:15 AM	44	0	155	0	199	132	214	0	0	346	0	0	0	0	0	30	158	0	0	188	733
11:30 AM	61	2	165	0	228	116	199	0	0	315	0	0	0	0	0	30	198	0	0	228	771
11:45 AM	48	0	155	0	203	129	237	0	0	366	0	0	0	0	0	31	205	0	0	236	805
Total	190	3	627	0	820	512	831	0	0	1343	0	0	0	0	0	117	714	0	0	831	2994
12:00 PM	48	1	175	0	224	145	197	0	0	342	0	0	0	0	0	54	224	0	0	278	844
12:15 PM	40	0	181	0	221	121	222	0	0	343	0	0	0	0	0	36	220	0	0	256	820
12:30 PM	54	1	182	0	237	120	220	0	0	340	0	0	0	0	0	30	222	0	0	252	829
12:45 PM	42	0	196	0	238	113	230	0	0	343	0	0	0	0	0	30	215	0	0	245	826
Total	184	2	734	0	920	499	869	0	0	1368	0	0	0	0	0	150	881	0	0	1031	3319
Grand Total	374	5	1361	0	1740	1011	1700	0	0	2711	0	0	0	0	0	267	1595	0	0	1862	6313
Apprch %	21.5	0.3	78.2	0		37.3	62.7	0	0		0	0	0	0		14.3	85.7	0	0		
Total %	5.9	0.1	21.6	0	27.6	16	26.9	0	0	42.9	0	0	0	0	0	4.2	25.3	0	0	29.5	

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	48	1	175	0	224	145	197	0	0	342	0	0	0	0	0	54	224	0	0	278	844
12:15 PM	40	0	181	0	221	121	222	0	0	343	0	0	0	0	0	36	220	0	0	256	820
12:30 PM	54	1	182	0	237	120	220	0	0	340	0	0	0	0	0	30	222	0	0	252	829
12:45 PM	42	0	196	0	238	113	230	0	0	343	0	0	0	0	0	30	215	0	0	245	826
Total Volume	184	2	734	0	920	499	869	0	0	1368	0	0	0	0	0	150	881	0	0	1031	3319
% App. Total	20	0.2	79.8	0		36.5	63.5	0	0		0	0	0	0		14.5	85.5	0	0		
PHF	.852	.500	.936	.000	.966	.860	.945	.000	.000	.997	.000	.000	.000	.000	.000	.694	.983	.000	.000	.927	.983

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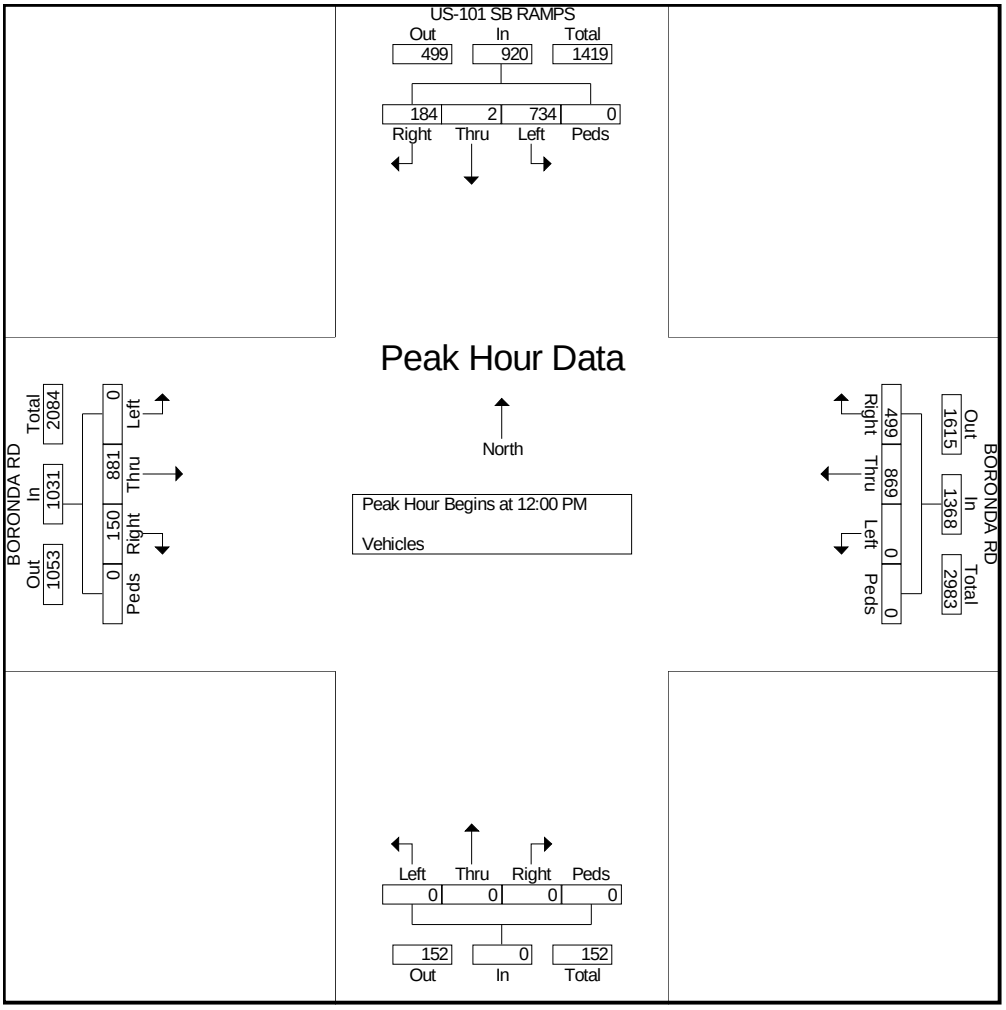

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Groups Printed- Vehicles

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	27	6	183	0	216	138	148	0	0	286	0	0	0	0	0	25	154	0	0	179	681
04:15 PM	33	4	200	0	237	159	173	0	0	332	0	0	0	0	0	28	196	0	0	224	793
04:30 PM	43	2	188	0	233	155	150	0	0	305	0	0	0	0	0	39	186	0	0	225	763
04:45 PM	46	1	227	0	274	160	176	0	0	336	0	0	0	0	0	42	194	0	0	236	846
Total	149	13	798	0	960	612	647	0	0	1259	0	0	0	0	0	134	730	0	0	864	3083
05:00 PM	28	3	243	0	274	158	140	0	0	298	0	0	0	0	0	53	194	0	0	247	819
05:15 PM	33	1	247	0	281	175	153	0	0	328	0	0	0	0	0	56	196	0	0	252	861
05:30 PM	46	0	252	0	298	162	144	0	0	306	0	0	0	0	0	29	193	0	0	222	826
05:45 PM	39	1	223	0	263	159	156	0	0	315	0	0	0	0	0	26	198	0	0	224	802
Total	146	5	965	0	1116	654	593	0	0	1247	0	0	0	0	0	164	781	0	0	945	3308
Grand Total	295	18	1763	0	2076	1266	1240	0	0	2506	0	0	0	0	0	298	1511	0	0	1809	6391
Apprch %	14.2	0.9	84.9	0		50.5	49.5	0	0		0	0	0	0		16.5	83.5	0	0		
Total %	4.6	0.3	27.6	0	32.5	19.8	19.4	0	0	39.2	0	0	0	0	0	4.7	23.6	0	0	28.3	

	US-101 SB RAMPS Southbound					BORONDA RD Westbound					Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	46	1	227	0	274	160	176	0	0	336	0	0	0	0	0	42	194	0	0	236	846
05:00 PM	28	3	243	0	274	158	140	0	0	298	0	0	0	0	0	53	194	0	0	247	819
05:15 PM	33	1	247	0	281	175	153	0	0	328	0	0	0	0	0	56	196	0	0	252	861
05:30 PM	46	0	252	0	298	162	144	0	0	306	0	0	0	0	0	29	193	0	0	222	826
Total Volume	153	5	969	0	1127	655	613	0	0	1268	0	0	0	0	0	180	777	0	0	957	3352
% App. Total	13.6	0.4	86	0		51.7	48.3	0	0		0	0	0	0		18.8	81.2	0	0		
PHF	.832	.417	.961	.000	.945	.936	.871	.000	.000	.943	.000	.000	.000	.000	.000	.804	.991	.000	.000	.949	.973

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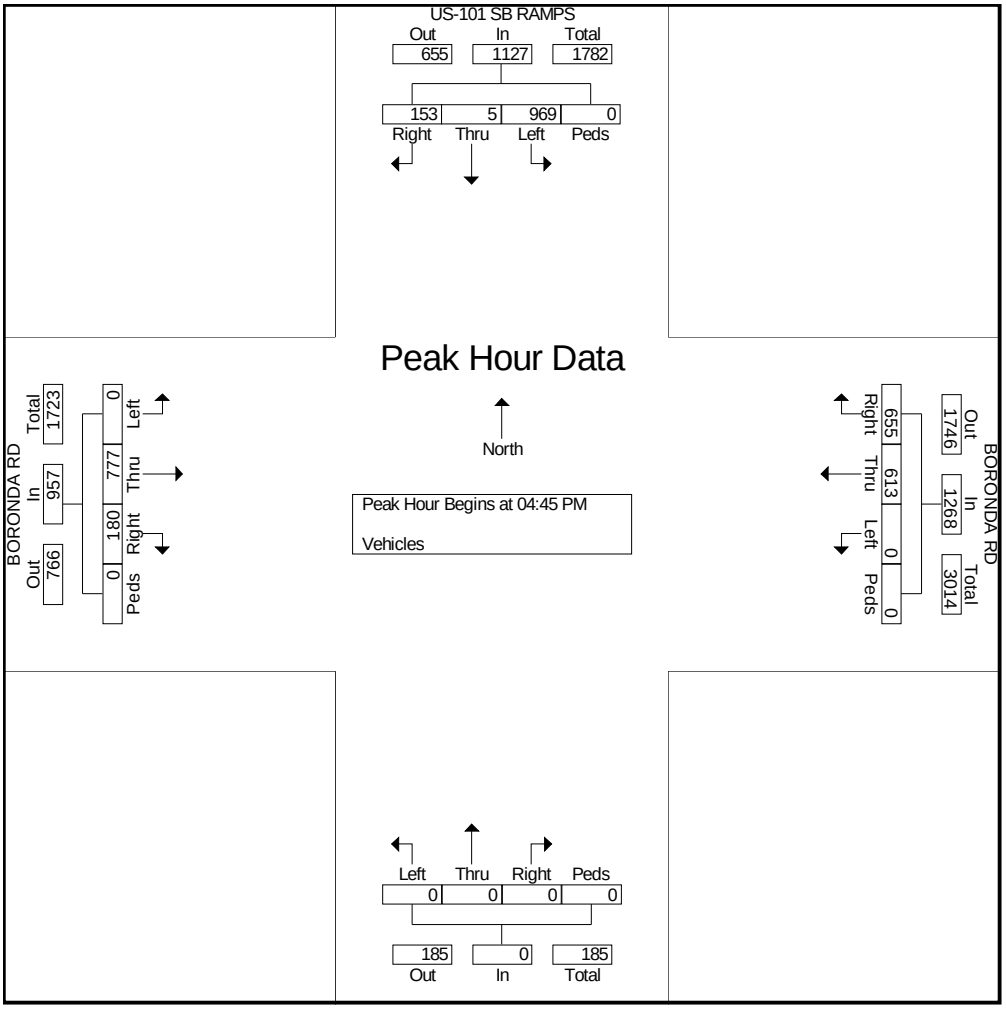

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Groups Printed- Vehicles

	Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	109	274	0	0	383	125	0	33	0	158	24	278	0	0	302	843
11:15 AM	0	0	0	0	0	103	304	0	0	407	151	0	34	0	185	28	264	0	0	292	884
11:30 AM	0	0	0	0	0	93	256	0	0	349	130	0	33	0	163	35	325	0	0	360	872
11:45 AM	0	0	0	0	0	90	304	0	0	394	178	0	38	0	216	36	304	0	0	340	950
Total	0	0	0	0	0	395	1138	0	0	1533	584	0	138	0	722	123	1171	0	0	1294	3549
12:00 PM	0	0	0	0	0	103	290	0	0	393	146	0	39	0	185	32	341	0	0	373	951
12:15 PM	0	0	0	0	0	105	274	0	0	379	166	0	35	0	201	37	353	0	0	390	970
12:30 PM	0	0	0	0	0	127	296	0	0	423	150	0	33	0	183	47	334	0	0	381	987
12:45 PM	0	0	0	0	0	134	298	0	0	432	168	0	50	0	218	19	354	0	0	373	1023
Total	0	0	0	0	0	469	1158	0	0	1627	630	0	157	0	787	135	1382	0	0	1517	3931
Grand Total	0	0	0	0	0	864	2296	0	0	3160	1214	0	295	0	1509	258	2553	0	0	2811	7480
Apprch %	0	0	0	0		27.3	72.7	0	0		80.5	0	19.5	0		9.2	90.8	0	0		
Total %	0	0	0	0	0	11.6	30.7	0	0	42.2	16.2	0	3.9	0	20.2	3.4	34.1	0	0	37.6	

	Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	103	290	0	0	393	146	0	39	0	185	32	341	0	0	373	951
12:15 PM	0	0	0	0	0	105	274	0	0	379	166	0	35	0	201	37	353	0	0	390	970
12:30 PM	0	0	0	0	0	127	296	0	0	423	150	0	33	0	183	47	334	0	0	381	987
12:45 PM	0	0	0	0	0	134	298	0	0	432	168	0	50	0	218	19	354	0	0	373	1023
Total Volume	0	0	0	0	0	469	1158	0	0	1627	630	0	157	0	787	135	1382	0	0	1517	3931
% App. Total																					
PHF	.000	.000	.000	.000	.000	.875	.971	.000	.000	.942	.938	.000	.785	.000	.903	.718	.976	.000	.000	.972	.961

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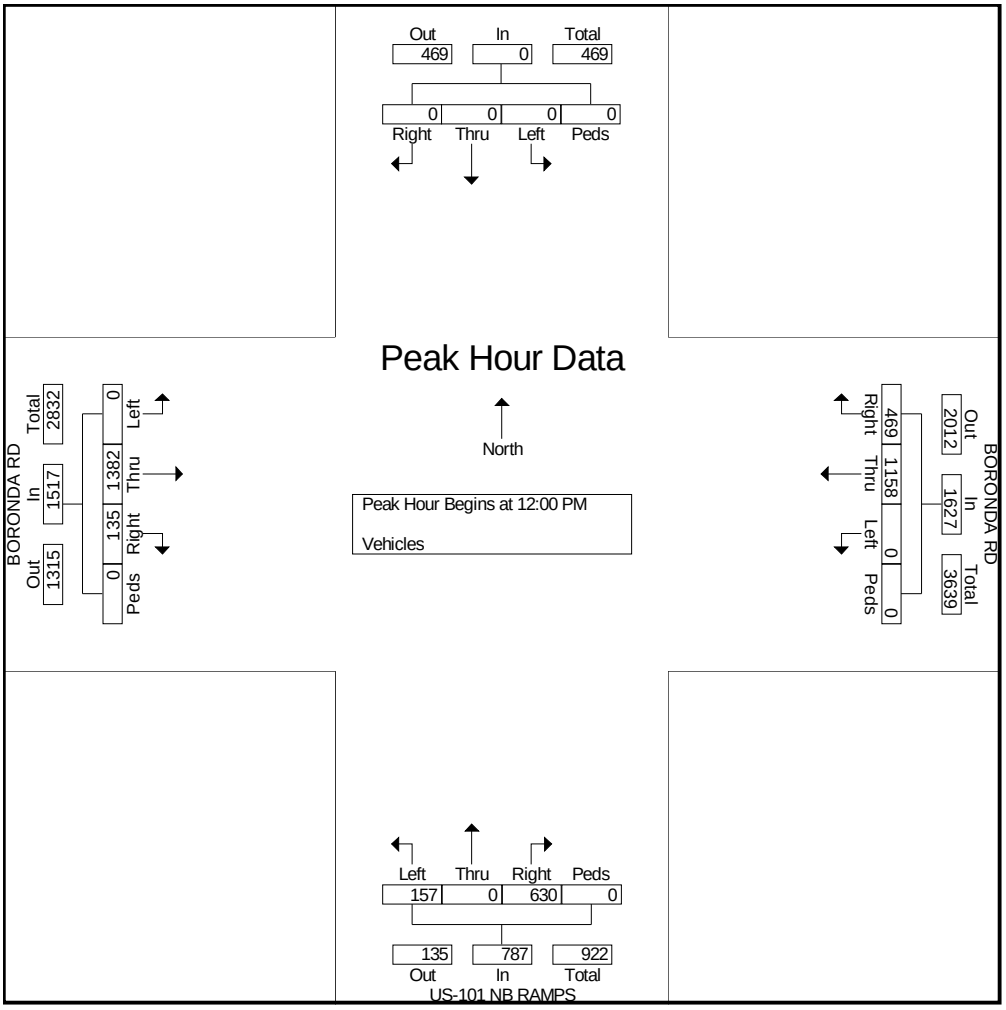

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Groups Printed- Vehicles

	Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	127	186	0	0	313	182	4	55	0	241	56	246	0	0	302	856
04:15 PM	0	0	0	0	0	154	234	0	0	388	157	6	87	0	250	72	315	0	0	387	1025
04:30 PM	0	0	0	0	0	160	235	0	0	395	173	1	74	0	248	68	297	0	0	365	1008
04:45 PM	0	0	0	0	0	160	240	0	0	400	181	0	93	0	274	53	386	0	0	439	1113
Total	0	0	0	0	0	601	895	0	0	1496	693	11	309	0	1013	249	1244	0	0	1493	4002
05:00 PM	0	0	0	0	0	144	228	0	0	372	217	0	46	0	263	74	339	0	0	413	1048
05:15 PM	0	0	0	0	0	209	210	0	0	419	211	0	61	0	272	51	350	0	0	401	1092
05:30 PM	0	0	0	0	0	195	233	0	0	428	206	1	55	0	262	66	374	0	0	440	1130
05:45 PM	0	0	0	0	0	169	250	0	0	419	181	0	49	0	230	56	343	0	0	399	1048
Total	0	0	0	0	0	717	921	0	0	1638	815	1	211	0	1027	247	1406	0	0	1653	4318
Grand Total	0	0	0	0	0	1318	1816	0	0	3134	1508	12	520	0	2040	496	2650	0	0	3146	8320
Apprch %	0	0	0	0		42.1	57.9	0	0		73.9	0.6	25.5	0		15.8	84.2	0	0		
Total %	0	0	0	0	0	15.8	21.8	0	0	37.7	18.1	0.1	6.2	0	24.5	6	31.9	0	0	37.8	

	Southbound					BORONDA RD Westbound					US-101 NB RAMPS Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	160	240	0	0	400	181	0	93	0	274	53	386	0	0	439	1113
05:00 PM	0	0	0	0	0	144	228	0	0	372	217	0	46	0	263	74	339	0	0	413	1048
05:15 PM	0	0	0	0	0	209	210	0	0	419	211	0	61	0	272	51	350	0	0	401	1092
05:30 PM	0	0	0	0	0	195	233	0	0	428	206	1	55	0	262	66	374	0	0	440	1130
Total Volume	0	0	0	0	0	708	911	0	0	1619	815	1	255	0	1071	244	1449	0	0	1693	4383
% App. Total																					
PHF	.000	.000	.000	.000	.000	.847	.949	.000	.000	.946	.939	.250	.685	.000	.977	.824	.938	.000	.000	.962	.970

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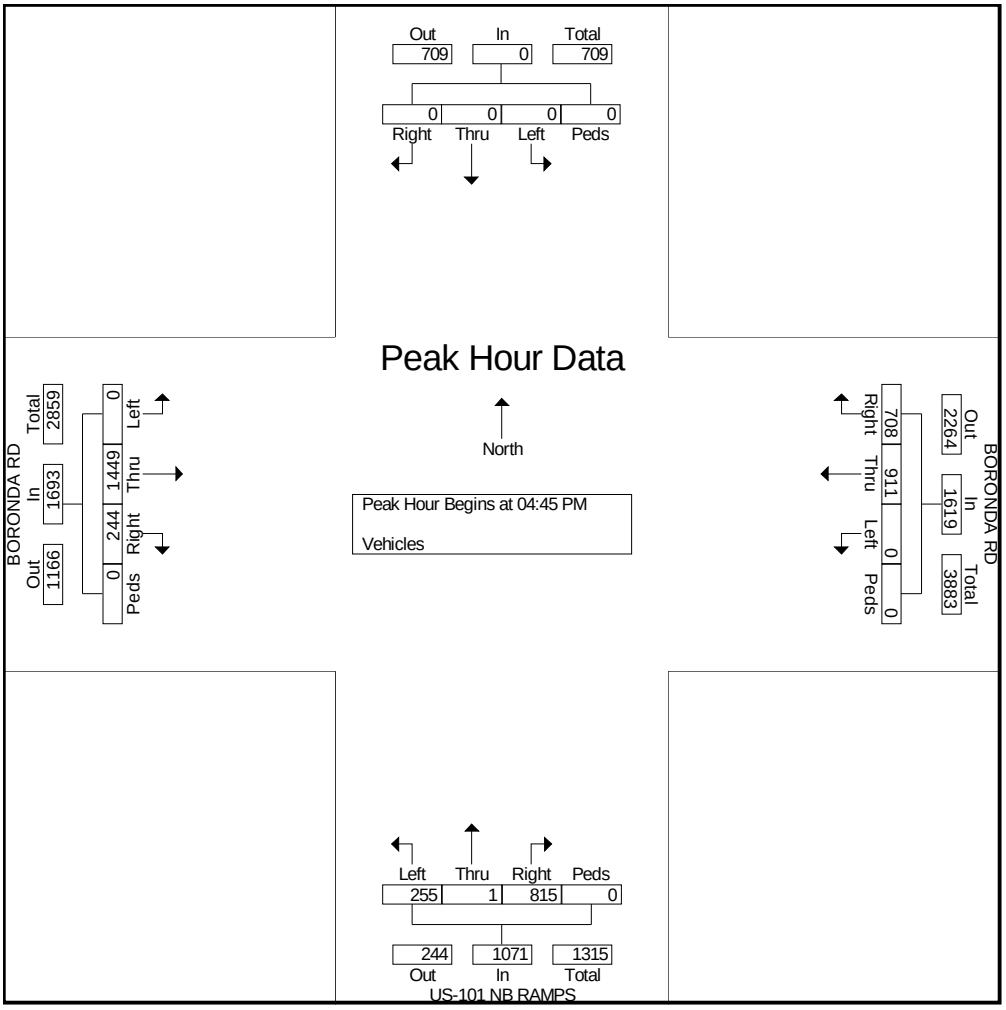

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Groups Printed- Vehicles

	MAIN ST Southbound					BORONDA RD Westbound					MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	64	63	34	0	161	32	151	31	0	214	12	58	159	0	229	98	104	38	0	240	844
11:15 AM	91	68	22	0	181	23	143	23	0	189	9	51	171	0	231	83	108	61	0	252	853
11:30 AM	93	64	19	0	176	19	122	24	0	165	9	43	148	0	200	102	121	49	0	272	813
11:45 AM	90	68	25	0	183	28	146	29	0	203	9	72	187	0	268	109	123	66	0	298	952
Total	338	263	100	0	701	102	562	107	0	771	39	224	665	0	928	392	456	214	0	1062	3462
12:00 PM	73	59	27	0	159	22	150	21	0	193	10	60	197	0	267	100	112	86	0	298	917
12:15 PM	79	65	25	0	169	27	142	25	0	194	9	74	199	0	282	100	143	85	0	328	973
12:30 PM	76	81	24	0	181	26	156	33	0	215	14	61	207	0	282	107	142	77	0	326	1004
12:45 PM	80	66	17	0	163	18	133	26	0	177	21	56	204	0	281	106	143	62	0	311	932
Total	308	271	93	0	672	93	581	105	0	779	54	251	807	0	1112	413	540	310	0	1263	3826
Grand Total	646	534	193	0	1373	195	1143	212	0	1550	93	475	1472	0	2040	805	996	524	0	2325	7288
Apprch %	47.1	38.9	14.1	0		12.6	73.7	13.7	0		4.6	23.3	72.2	0		34.6	42.8	22.5	0		
Total %	8.9	7.3	2.6	0	18.8	2.7	15.7	2.9	0	21.3	1.3	6.5	20.2	0	28	11	13.7	7.2	0	31.9	

	MAIN ST Southbound					BORONDA RD Westbound					MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	90	68	25	0	183	28	146	29	0	203	9	72	187	0	268	109	123	66	0	298	952
12:00 PM	73	59	27	0	159	22	150	21	0	193	10	60	197	0	267	100	112	86	0	298	917
12:15 PM	79	65	25	0	169	27	142	25	0	194	9	74	199	0	282	100	143	85	0	328	973
12:30 PM	76	81	24	0	181	26	156	33	0	215	14	61	207	0	282	107	142	77	0	326	1004
Total Volume	318	273	101	0	692	103	594	108	0	805	42	267	790	0	1099	416	520	314	0	1250	3846
% App. Total	46	39.5	14.6	0		12.8	73.8	13.4	0		3.8	24.3	71.9	0		33.3	41.6	25.1	0		
PHF	.883	.843	.935	.000	.945	.920	.952	.818	.000	.936	.750	.902	.954	.000	.974	.954	.909	.913	.000	.953	.958

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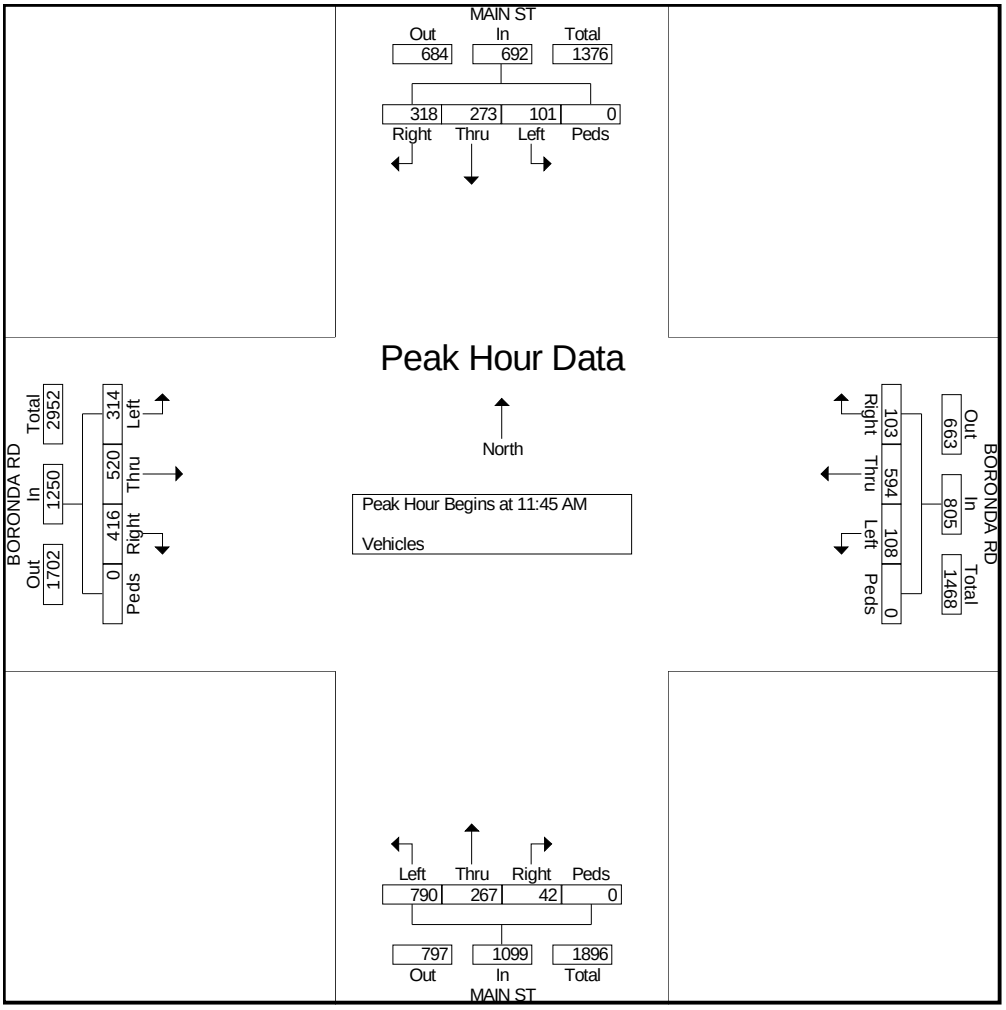

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Groups Printed- Vehicles

	MAIN ST Southbound					BORONDA RD Westbound					MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	75	48	28	0	151	22	143	6	0	171	11	51	163	0	225	82	153	84	0	319	866
04:15 PM	79	46	14	0	139	30	147	22	0	199	8	65	165	0	238	87	160	90	0	337	913
04:30 PM	81	68	17	0	166	16	134	12	0	162	11	73	176	0	260	97	145	87	0	329	917
04:45 PM	65	57	16	0	138	20	152	13	0	185	9	62	164	0	235	84	179	96	0	359	917
Total	300	219	75	0	594	88	576	53	0	717	39	251	668	0	958	350	637	357	0	1344	3613
05:00 PM	85	67	32	0	184	21	129	16	0	166	16	54	169	0	239	113	177	111	0	401	990
05:15 PM	96	61	36	0	193	22	167	14	0	203	12	62	161	0	235	133	192	107	0	432	1063
05:30 PM	92	47	30	0	169	25	122	10	0	157	10	63	192	0	265	118	175	101	0	394	985
05:45 PM	84	40	21	0	145	28	143	13	0	184	6	53	161	0	220	104	180	125	0	409	958
Total	357	215	119	0	691	96	561	53	0	710	44	232	683	0	959	468	724	444	0	1636	3996
Grand Total	657	434	194	0	1285	184	1137	106	0	1427	83	483	1351	0	1917	818	1361	801	0	2980	7609
Apprch %	51.1	33.8	15.1	0		12.9	79.7	7.4	0		4.3	25.2	70.5	0		27.4	45.7	26.9	0		
Total %	8.6	5.7	2.5	0	16.9	2.4	14.9	1.4	0	18.8	1.1	6.3	17.8	0	25.2	10.8	17.9	10.5	0	39.2	

	MAIN ST Southbound					BORONDA RD Westbound					MAIN ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	85	67	32	0	184	21	129	16	0	166	16	54	169	0	239	113	177	111	0	401	990
05:15 PM	96	61	36	0	193	22	167	14	0	203	12	62	161	0	235	133	192	107	0	432	1063
05:30 PM	92	47	30	0	169	25	122	10	0	157	10	63	192	0	265	118	175	101	0	394	985
05:45 PM	84	40	21	0	145	28	143	13	0	184	6	53	161	0	220	104	180	125	0	409	958
Total Volume	357	215	119	0	691	96	561	53	0	710	44	232	683	0	959	468	724	444	0	1636	3996
% App. Total	51.7	31.1	17.2	0		13.5	79	7.5	0		4.6	24.2	71.2	0		28.6	44.3	27.1	0		
PHF	.930	.802	.826	.000	.895	.857	.840	.828	.000	.874	.688	.921	.889	.000	.905	.880	.943	.888	.000	.947	.940

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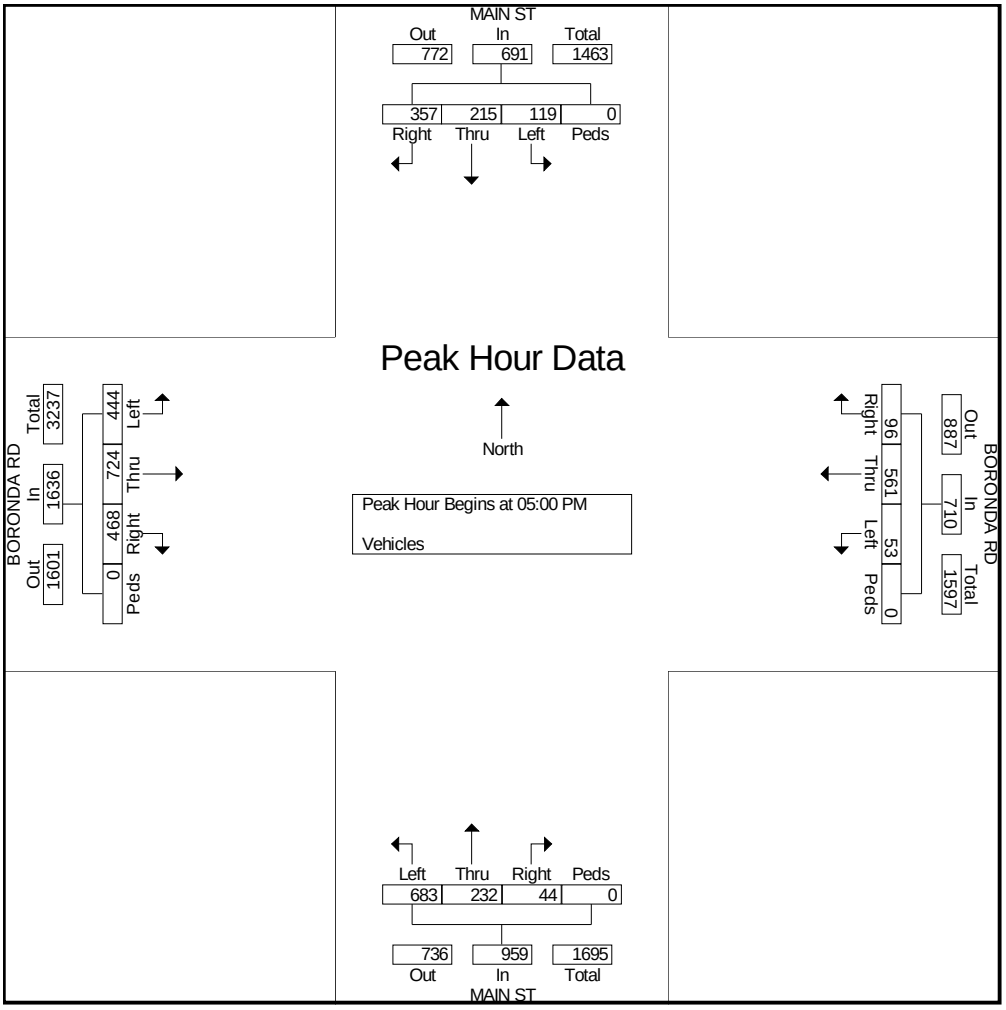

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File Name : 9MID FINAL
Site Code : 00000009
Start Date : 3/13/2010
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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	33	40	40	0	113	25	152	38	0	215	20	49	35	0	104	10	107	27	0	144	576
11:15 AM	27	43	29	0	99	38	152	58	0	248	20	37	30	0	87	14	135	17	0	166	600
11:30 AM	24	44	24	0	92	40	135	35	0	210	14	50	30	0	94	11	128	11	0	150	546
11:45 AM	21	51	33	0	105	28	172	43	0	243	25	63	29	0	117	17	132	17	0	166	631
Total	105	178	126	0	409	131	611	174	0	916	79	199	124	0	402	52	502	72	0	626	2353
12:00 PM	30	41	37	0	108	29	161	45	0	235	23	59	36	0	118	16	142	21	0	179	640
12:15 PM	29	46	44	0	119	33	155	60	0	248	21	42	33	0	96	13	161	10	0	184	647
12:30 PM	37	56	51	0	144	33	150	40	0	223	14	40	27	0	81	21	155	13	0	189	637
12:45 PM	17	58	37	0	112	35	173	53	0	261	18	64	25	0	107	21	168	20	0	209	689
Total	113	201	169	0	483	130	639	198	0	967	76	205	121	0	402	71	626	64	0	761	2613
Grand Total	218	379	295	0	892	261	1250	372	0	1883	155	404	245	0	804	123	1128	136	0	1387	4966
Apprch %	24.4	42.5	33.1	0		13.9	66.4	19.8	0		19.3	50.2	30.5	0		8.9	81.3	9.8	0		
Total %	4.4	7.6	5.9	0	18	5.3	25.2	7.5	0	37.9	3.1	8.1	4.9	0	16.2	2.5	22.7	2.7	0	27.9	

	SAN JUAN GRADE RD Southbound					BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	30	41	37	0	108	29	161	45	0	235	23	59	36	0	118	16	142	21	0	179	640
12:15 PM	29	46	44	0	119	33	155	60	0	248	21	42	33	0	96	13	161	10	0	184	647
12:30 PM	37	56	51	0	144	33	150	40	0	223	14	40	27	0	81	21	155	13	0	189	637
12:45 PM	17	58	37	0	112	35	173	53	0	261	18	64	25	0	107	21	168	20	0	209	689
Total Volume	113	201	169	0	483	130	639	198	0	967	76	205	121	0	402	71	626	64	0	761	2613
% App. Total	23.4	41.6	35	0		13.4	66.1	20.5	0		18.9	51	30.1	0		9.3	82.3	8.4	0		
PHF	.764	.866	.828	.000	.839	.929	.923	.825	.000	.926	.826	.801	.840	.000	.852	.845	.932	.762	.000	.910	.948

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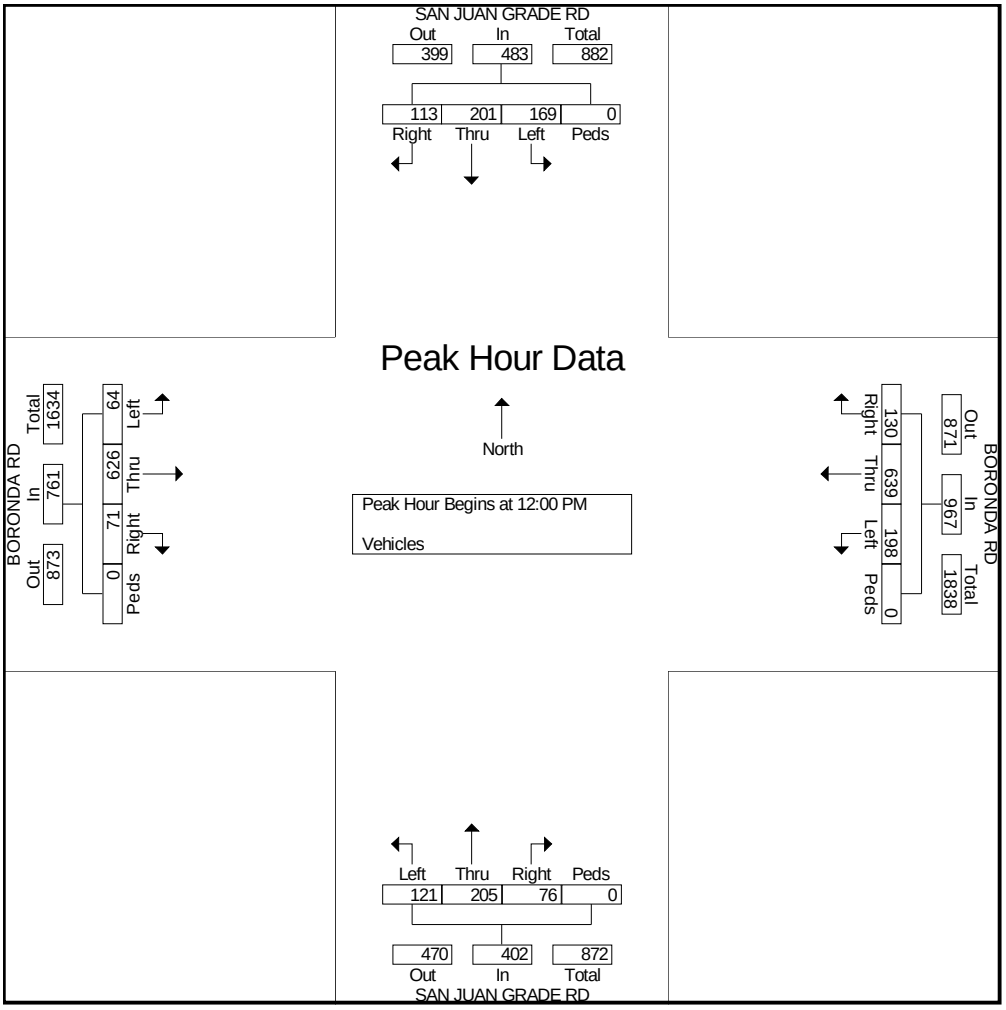

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Groups Printed- Vehicles

	SAN JUAN GRADE RD Southbound					BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	31	27	42	0	100	32	139	40	0	211	16	45	22	0	83	18	165	33	0	216	610
04:15 PM	43	46	48	0	137	41	133	27	0	201	20	57	27	0	104	14	148	30	0	192	634
04:30 PM	39	57	54	0	150	40	127	41	0	208	18	44	19	0	81	17	154	12	0	183	622
04:45 PM	25	36	41	0	102	50	133	43	0	226	19	73	37	0	129	19	178	23	0	220	677
Total	138	166	185	0	489	163	532	151	0	846	73	219	105	0	397	68	645	98	0	811	2543
05:00 PM	31	33	57	0	121	43	139	38	0	220	18	57	22	0	97	12	197	26	0	235	673
05:15 PM	35	44	37	0	116	42	134	41	0	217	17	64	23	0	104	18	226	15	0	259	696
05:30 PM	35	55	48	0	138	59	127	31	0	217	20	54	23	0	97	15	205	23	0	243	695
05:45 PM	31	39	38	0	108	43	130	41	0	214	25	44	23	0	92	12	196	38	0	246	660
Total	132	171	180	0	483	187	530	151	0	868	80	219	91	0	390	57	824	102	0	983	2724
Grand Total	270	337	365	0	972	350	1062	302	0	1714	153	438	196	0	787	125	1469	200	0	1794	5267
Apprch %	27.8	34.7	37.6	0		20.4	62	17.6	0		19.4	55.7	24.9	0		7	81.9	11.1	0		
Total %	5.1	6.4	6.9	0	18.5	6.6	20.2	5.7	0	32.5	2.9	8.3	3.7	0	14.9	2.4	27.9	3.8	0	34.1	

	SAN JUAN GRADE RD Southbound					BORONDA RD Westbound					SAN JUAN GRADE RD Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	25	36	41	0	102	50	133	43	0	226	19	73	37	0	129	19	178	23	0	220	677
05:00 PM	31	33	57	0	121	43	139	38	0	220	18	57	22	0	97	12	197	26	0	235	673
05:15 PM	35	44	37	0	116	42	134	41	0	217	17	64	23	0	104	18	226	15	0	259	696
05:30 PM	35	55	48	0	138	59	127	31	0	217	20	54	23	0	97	15	205	23	0	243	695
Total Volume	126	168	183	0	477	194	533	153	0	880	74	248	105	0	427	64	806	87	0	957	2741
% App. Total	26.4	35.2	38.4	0		22	60.6	17.4	0		17.3	58.1	24.6	0		6.7	84.2	9.1	0		
PHF	.900	.764	.803	.000	.864	.822	.959	.890	.000	.973	.925	.849	.709	.000	.828	.842	.892	.837	.000	.924	.985

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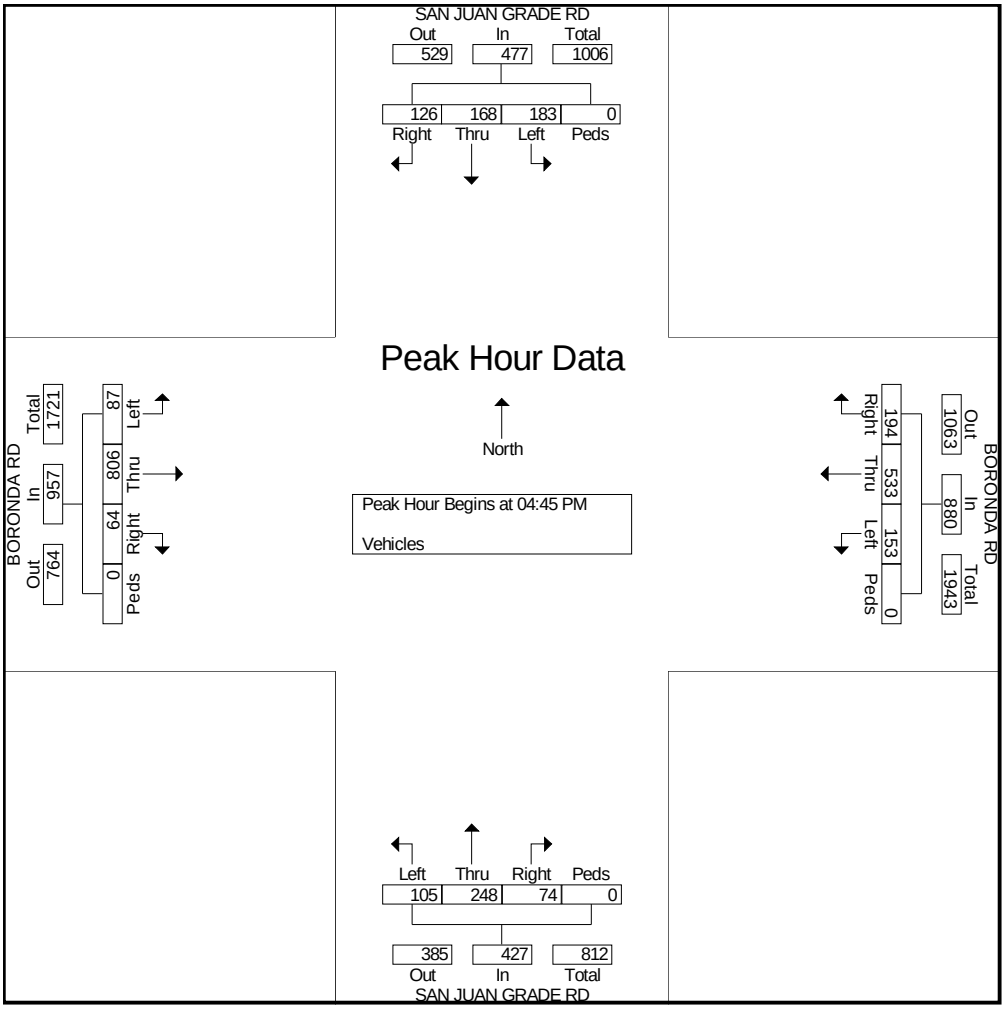

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Groups Printed- Vehicles

	Southbound					BORONDA RD Westbound					HOME DEPOT DRIVEWAY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	217	0	0	217	0	0	0	0	0	1	161	0	0	162	379
11:15 AM	0	0	0	0	0	0	234	1	0	235	0	0	2	0	2	0	201	1	0	202	439
11:30 AM	0	0	0	0	0	0	231	0	0	231	0	0	0	0	0	0	188	2	0	190	421
11:45 AM	0	0	0	0	0	0	249	1	0	250	0	0	1	0	1	0	183	2	0	185	436
Total	0	0	0	0	0	0	931	2	0	933	0	0	3	0	3	1	733	5	0	739	1675
12:00 PM	0	0	0	0	0	0	231	0	0	231	0	0	0	0	0	2	211	1	0	214	445
12:15 PM	0	0	0	0	0	0	236	0	0	236	0	0	0	0	0	0	215	0	0	215	451
12:30 PM	0	0	0	0	0	0	235	1	0	236	0	0	1	0	1	0	230	1	0	231	468
12:45 PM	0	0	0	0	0	0	249	0	0	249	0	0	0	0	0	1	231	2	0	234	483
Total	0	0	0	0	0	0	951	1	0	952	0	0	1	0	1	3	887	4	0	894	1847
Grand Total	0	0	0	0	0	0	1882	3	0	1885	0	0	4	0	4	4	1620	9	0	1633	3522
Apprch %	0	0	0	0		0	99.8	0.2	0		0	0	100	0		0.2	99.2	0.6	0		
Total %	0	0	0	0	0	0	53.4	0.1	0	53.5	0	0	0.1	0	0.1	0.1	46	0.3	0	46.4	

	Southbound					BORONDA RD Westbound					HOME DEPOT DRIVEWAY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	231	0	0	231	0	0	0	0	0	2	211	1	0	214	445
12:15 PM	0	0	0	0	0	0	236	0	0	236	0	0	0	0	0	0	215	0	0	215	451
12:30 PM	0	0	0	0	0	0	235	1	0	236	0	0	1	0	1	0	230	1	0	231	468
12:45 PM	0	0	0	0	0	0	249	0	0	249	0	0	0	0	0	1	231	2	0	234	483
Total Volume	0	0	0	0	0	0	951	1	0	952	0	0	1	0	1	3	887	4	0	894	1847
% App. Total	0	0	0	0		0	99.9	0.1	0		0	0	100	0		0.3	99.2	0.4	0		
PHF	.000	.000	.000	.000	.000	.000	.955	.250	.000	.956	.000	.000	.250	.000	.250	.375	.960	.500	.000	.955	.956

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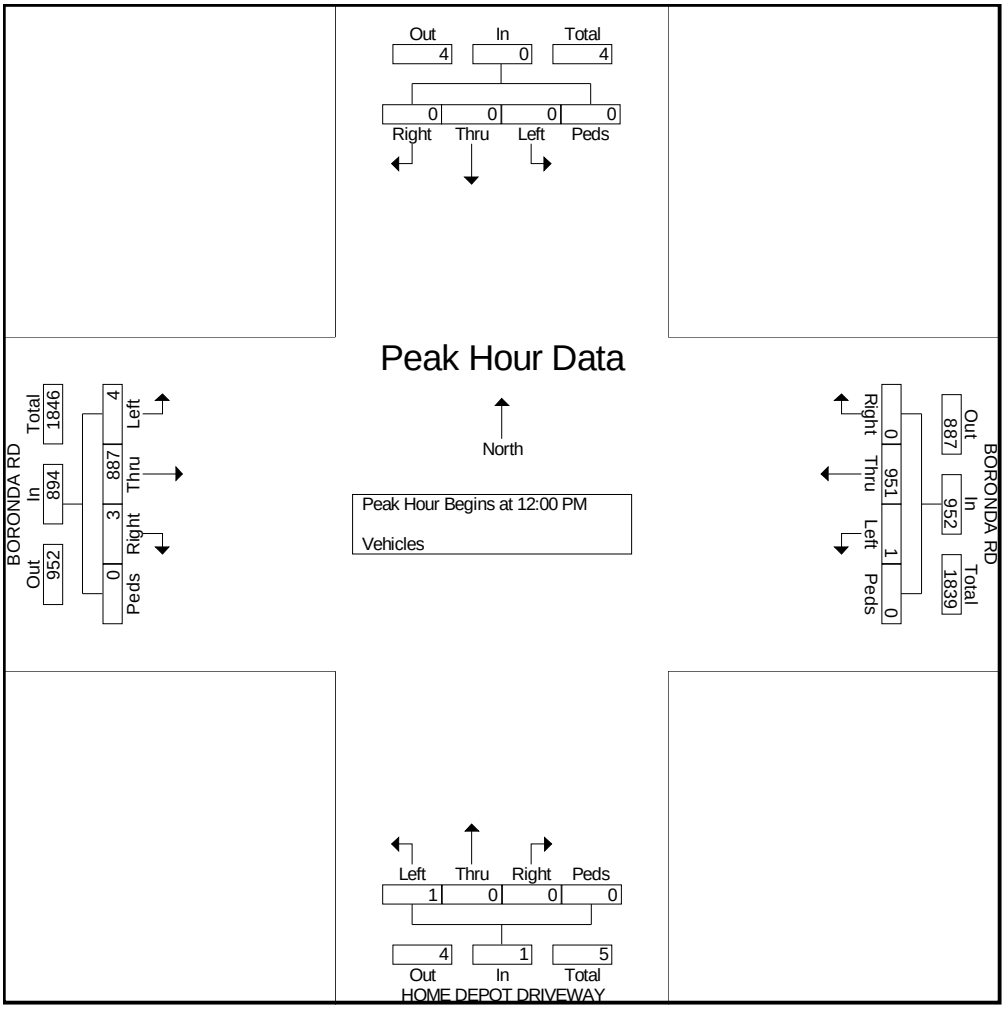

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File Name : 10PM FINAL
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Groups Printed- Vehicles

	Southbound					BORONDA RD Westbound					HOME DEPOT DRIVEWAY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	173	1	0	174	1	0	1	0	2	0	191	0	0	191	367
04:15 PM	0	0	0	0	0	0	216	0	0	216	0	0	0	0	0	0	242	0	0	242	458
04:30 PM	0	0	0	0	0	0	218	1	0	219	0	0	1	0	1	0	225	0	0	225	445
04:45 PM	0	0	0	0	0	0	236	0	0	236	0	0	4	0	4	2	261	0	0	263	503
Total	0	0	0	0	0	0	843	2	0	845	1	0	6	0	7	2	919	0	0	921	1773
05:00 PM	0	0	0	0	0	0	248	1	0	249	0	0	1	0	1	0	286	0	0	286	536
05:15 PM	0	0	0	0	0	0	196	0	0	196	1	0	2	0	3	2	285	0	0	287	486
05:30 PM	0	0	0	0	0	0	216	0	0	216	0	0	0	0	0	0	237	0	0	237	453
05:45 PM	0	0	0	0	0	0	200	0	0	200	0	0	1	0	1	3	226	0	0	229	430
Total	0	0	0	0	0	0	860	1	0	861	1	0	4	0	5	5	1034	0	0	1039	1905
Grand Total	0	0	0	0	0	0	1703	3	0	1706	2	0	10	0	12	7	1953	0	0	1960	3678
Apprch %	0	0	0	0		0	99.8	0.2	0		16.7	0	83.3	0		0.4	99.6	0	0		
Total %	0	0	0	0	0	0	46.3	0.1	0	46.4	0.1	0	0.3	0	0.3	0.2	53.1	0	0	53.3	

	Southbound					BORONDA RD Westbound					HOME DEPOT DRIVEWAY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	236	0	0	236	0	0	4	0	4	2	261	0	0	263	503
05:00 PM	0	0	0	0	0	0	248	1	0	249	0	0	1	0	1	0	286	0	0	286	536
05:15 PM	0	0	0	0	0	0	196	0	0	196	1	0	2	0	3	2	285	0	0	287	486
05:30 PM	0	0	0	0	0	0	216	0	0	216	0	0	0	0	0	0	237	0	0	237	453
Total Volume	0	0	0	0	0	0	896	1	0	897	1	0	7	0	8	4	1069	0	0	1073	1978
% App. Total																					
PHF	.000	.000	.000	.000	.000	.000	.903	.250	.000	.901	.250	.000	.438	.000	.500	.500	.934	.000	.000	.935	.923

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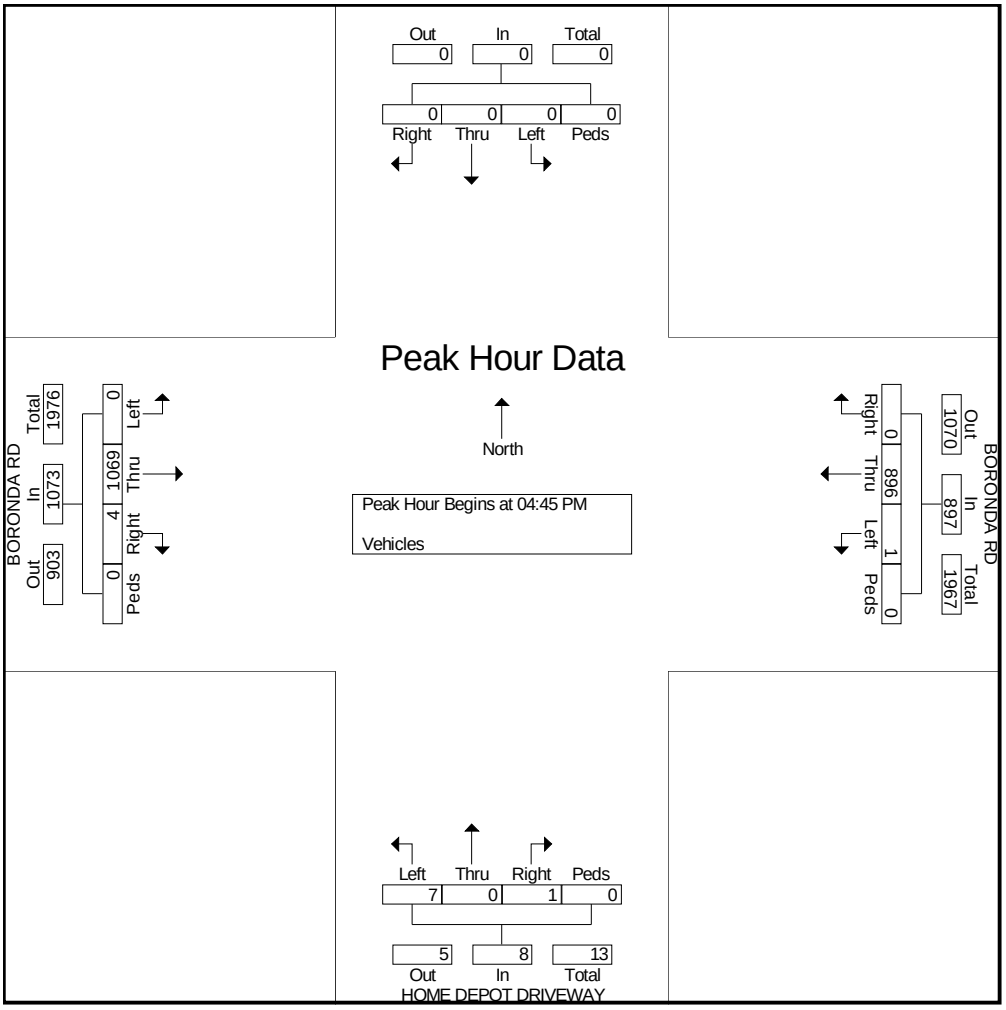

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Site Code : 00000011
Start Date : 3/13/2010
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Groups Printed- Vehicles

	Southbound					BORONDA RD Westbound					DARTMOUTH WY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	0	0	0	0	0	213	3	0	216	0	0	3	0	3	4	151	0	0	155	374
11:15 AM	0	0	0	0	0	0	236	3	0	239	2	0	4	0	6	2	196	0	0	198	443
11:30 AM	0	0	0	0	0	0	231	4	0	235	1	0	5	0	6	6	191	0	0	197	438
11:45 AM	0	0	0	0	0	0	253	3	0	256	0	0	2	0	2	1	187	0	0	188	446
Total	0	0	0	0	0	0	933	13	0	946	3	0	14	0	17	13	725	0	0	738	1701
12:00 PM	0	0	0	0	0	0	226	4	0	230	0	0	3	0	3	2	196	0	0	198	431
12:15 PM	0	0	0	0	0	0	236	2	0	238	2	0	7	0	9	3	221	0	0	224	471
12:30 PM	0	0	0	0	0	0	241	2	0	243	0	0	3	0	3	2	229	0	0	231	477
12:45 PM	0	0	0	0	0	0	236	1	0	237	2	0	3	0	5	1	228	0	0	229	471
Total	0	0	0	0	0	0	939	9	0	948	4	0	16	0	20	8	874	0	0	882	1850
Grand Total	0	0	0	0	0	0	1872	22	0	1894	7	0	30	0	37	21	1599	0	0	1620	3551
Apprch %	0	0	0	0		0	98.8	1.2	0		18.9	0	81.1	0		1.3	98.7	0	0		
Total %	0	0	0	0	0	0	52.7	0.6	0	53.3	0.2	0	0.8	0	1	0.6	45	0	0	45.6	

	Southbound					BORONDA RD Westbound					DARTMOUTH WY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	0	0	0	226	4	0	230	0	0	3	0	3	2	196	0	0	198	431
12:15 PM	0	0	0	0	0	0	236	2	0	238	2	0	7	0	9	3	221	0	0	224	471
12:30 PM	0	0	0	0	0	0	241	2	0	243	0	0	3	0	3	2	229	0	0	231	477
12:45 PM	0	0	0	0	0	0	236	1	0	237	2	0	3	0	5	1	228	0	0	229	471
Total Volume	0	0	0	0	0	0	939	9	0	948	4	0	16	0	20	8	874	0	0	882	1850
% App. Total	0	0	0	0		0	99.1	0.9	0		20	0	80	0		0.9	99.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.974	.563	.000	.975	.500	.000	.571	.000	.556	.667	.954	.000	.000	.955	.970

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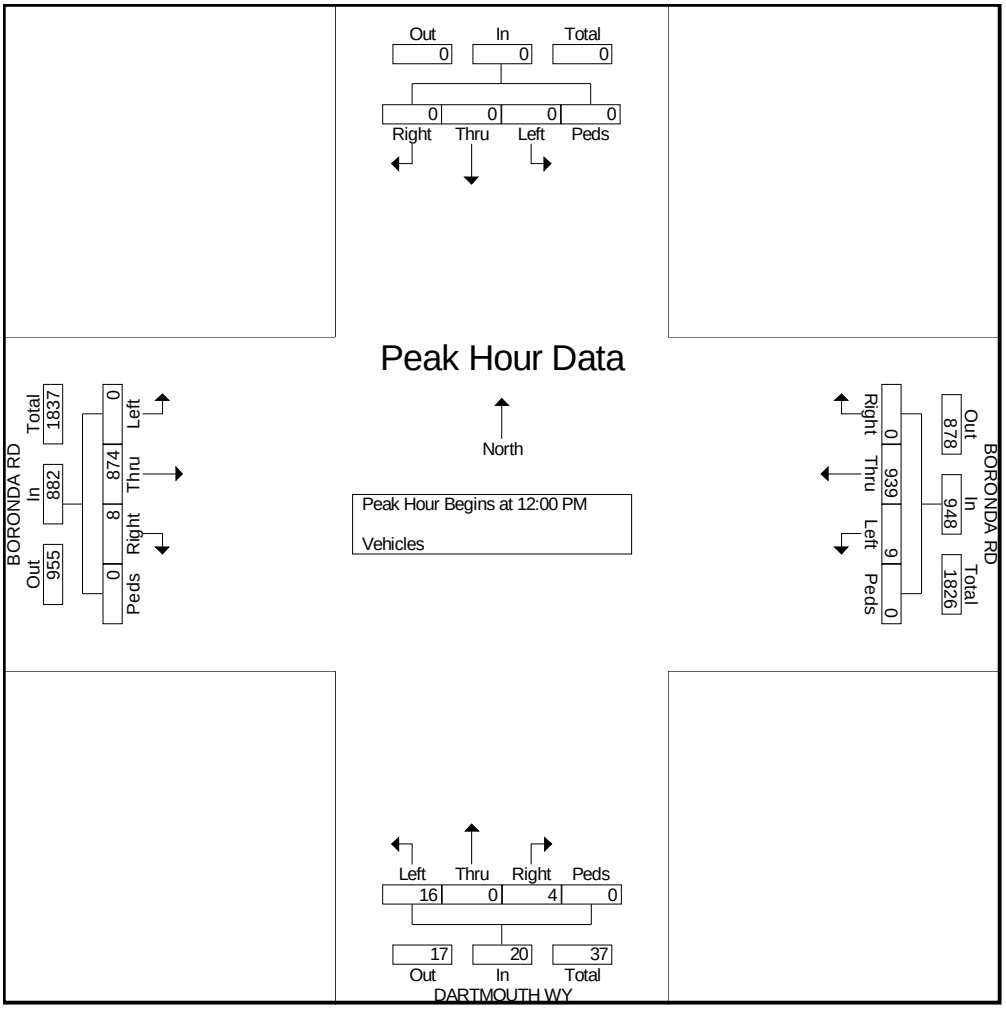

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Groups Printed- Vehicles

	Southbound					BORONDA RD Westbound					DARTMOUUTH WY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	147	3	0	150	3	0	4	0	7	5	174	0	0	179	336
04:15 PM	0	0	0	0	0	0	211	3	0	214	3	0	2	0	5	3	235	0	0	238	457
04:30 PM	0	0	0	0	0	0	215	2	0	217	1	0	6	0	7	5	219	0	0	224	448
04:45 PM	0	0	0	0	0	0	242	12	0	254	2	0	13	0	15	9	284	0	0	293	562
Total	0	0	0	0	0	0	815	20	0	835	9	0	25	0	34	22	912	0	0	934	1803
05:00 PM	0	0	0	0	0	0	221	2	0	223	2	0	12	0	14	3	273	0	0	276	513
05:15 PM	0	0	0	0	0	0	195	10	0	205	3	0	9	0	12	2	277	0	0	279	496
05:30 PM	0	0	0	0	0	0	217	6	0	223	1	0	10	0	11	1	209	0	0	210	444
05:45 PM	0	0	0	0	0	0	199	2	0	201	1	0	12	0	13	11	222	0	0	233	447
Total	0	0	0	0	0	0	832	20	0	852	7	0	43	0	50	17	981	0	0	998	1900
Grand Total	0	0	0	0	0	0	1647	40	0	1687	16	0	68	0	84	39	1893	0	0	1932	3703
Apprch %	0	0	0	0		0	97.6	2.4	0		19	0	81	0		2	98	0	0		
Total %	0	0	0	0	0	0	44.5	1.1	0	45.6	0.4	0	1.8	0	2.3	1.1	51.1	0	0	52.2	

	Southbound					BORONDA RD Westbound					DARTMOUUTH WY Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	215	2	0	217	1	0	6	0	7	5	219	0	0	224	448
04:45 PM	0	0	0	0	0	0	242	12	0	254	2	0	13	0	15	9	284	0	0	293	562
05:00 PM	0	0	0	0	0	0	221	2	0	223	2	0	12	0	14	3	273	0	0	276	513
05:15 PM	0	0	0	0	0	0	195	10	0	205	3	0	9	0	12	2	277	0	0	279	496
Total Volume	0	0	0	0	0	0	873	26	0	899	8	0	40	0	48	19	1053	0	0	1072	2019
% App. Total																					
PHF	.000	.000	.000	.000	.000	.000	.902	.542	.000	.885	.667	.000	.769	.000	.800	.528	.927	.000	.000	.915	.898

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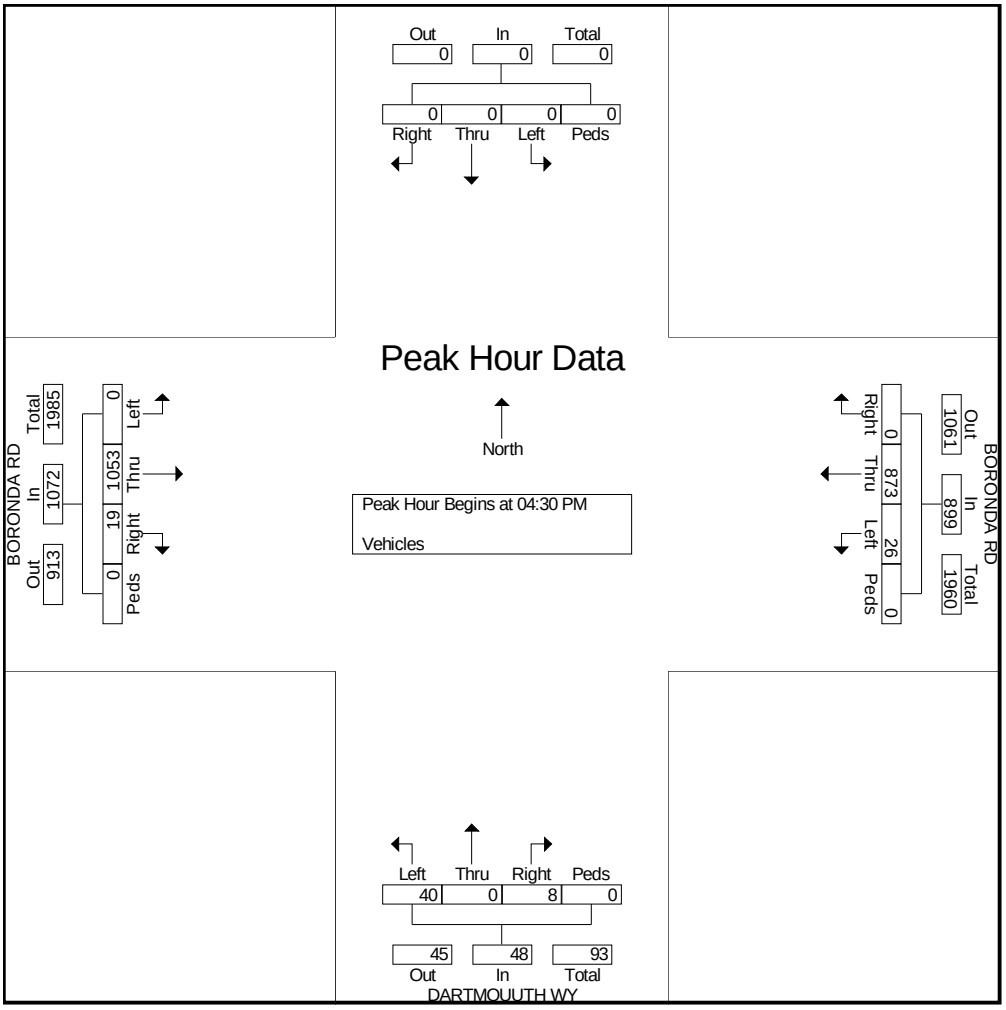

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Groups Printed- Vehicles

	MCKINNON ST Southbound					BORONDA RD Westbound					MCKINNON ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	5	0	0	0	5	0	181	17	0	198	15	1	28	0	44	30	131	5	0	166	413
11:15 AM	0	0	0	0	0	0	194	16	0	210	7	0	37	0	44	32	163	0	0	195	449
11:30 AM	1	0	0	0	1	2	185	25	0	212	7	1	63	0	71	36	150	1	0	187	471
11:45 AM	0	0	0	0	0	0	208	18	0	226	2	0	37	0	39	31	151	0	0	182	447
Total	6	0	0	0	6	2	768	76	0	846	31	2	165	0	198	129	595	6	0	730	1780
12:00 PM	2	1	0	0	3	1	166	33	0	200	6	0	38	0	44	39	165	0	0	204	451
12:15 PM	0	0	0	0	0	0	191	33	0	224	7	0	55	0	62	32	197	1	0	230	516
12:30 PM	0	1	0	0	1	0	188	27	0	215	2	0	52	0	54	37	194	1	0	232	502
12:45 PM	1	0	0	0	1	2	182	28	0	212	2	0	47	0	49	28	191	2	0	221	483
Total	3	2	0	0	5	3	727	121	0	851	17	0	192	0	209	136	747	4	0	887	1952
Grand Total	9	2	0	0	11	5	1495	197	0	1697	48	2	357	0	407	265	1342	10	0	1617	3732
Apprch %	81.8	18.2	0	0		0.3	88.1	11.6	0		11.8	0.5	87.7	0		16.4	83	0.6	0		
Total %	0.2	0.1	0	0	0.3	0.1	40.1	5.3	0	45.5	1.3	0.1	9.6	0	10.9	7.1	36	0.3	0	43.3	

	MCKINNON ST Southbound					BORONDA RD Westbound					MCKINNON ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	2	1	0	0	3	1	166	33	0	200	6	0	38	0	44	39	165	0	0	204	451
12:15 PM	0	0	0	0	0	0	191	33	0	224	7	0	55	0	62	32	197	1	0	230	516
12:30 PM	0	1	0	0	1	0	188	27	0	215	2	0	52	0	54	37	194	1	0	232	502
12:45 PM	1	0	0	0	1	2	182	28	0	212	2	0	47	0	49	28	191	2	0	221	483
Total Volume	3	2	0	0	5	3	727	121	0	851	17	0	192	0	209	136	747	4	0	887	1952
% App. Total	60	40	0	0		0.4	85.4	14.2	0		8.1	0	91.9	0		15.3	84.2	0.5	0		
PHF	.375	.500	.000	.000	.417	.375	.952	.917	.000	.950	.607	.000	.873	.000	.843	.872	.948	.500	.000	.956	.946

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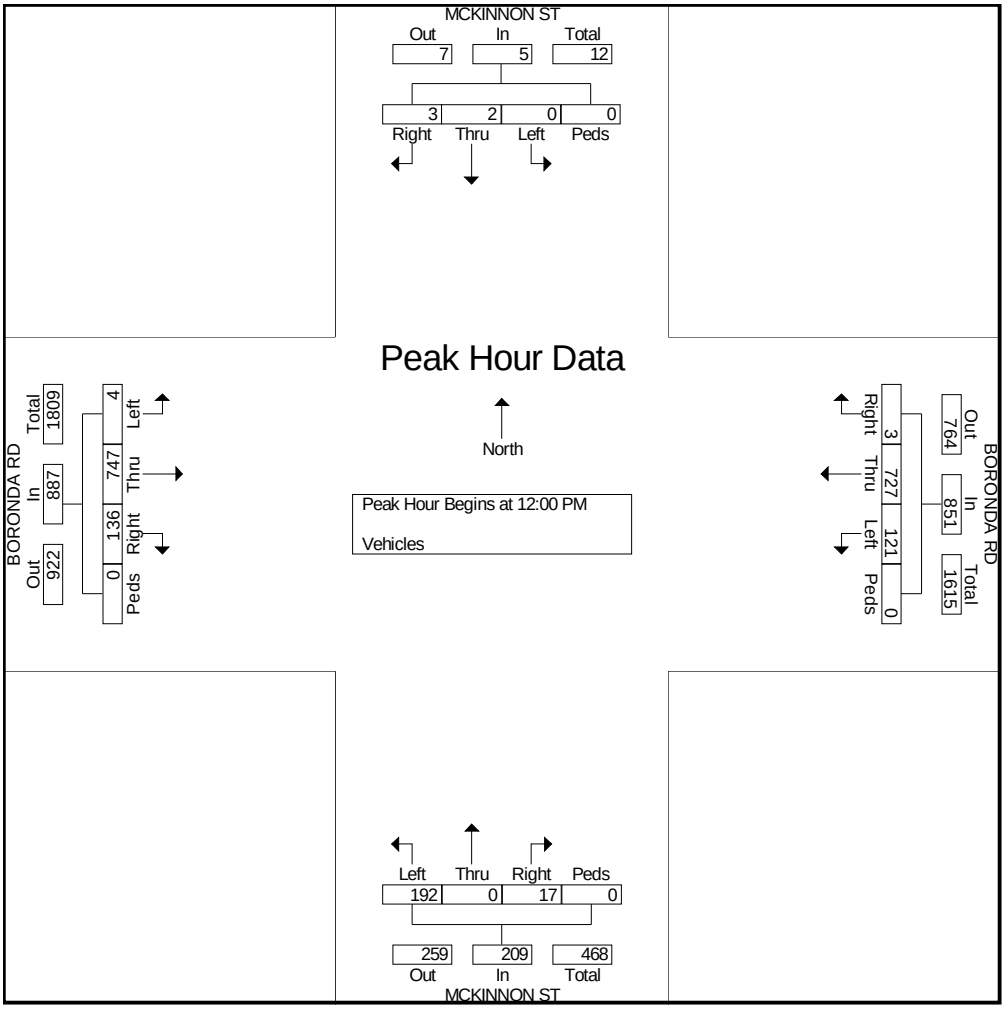

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Groups Printed- Vehicles

	McKINNON ST Southbound					BORONDA RD Westbound					McKINNON ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	17	14	7	0	38	1	128	17	0	146	9	4	41	0	54	45	119	6	0	170	408
04:15 PM	10	0	1	0	11	2	152	26	0	180	14	1	47	0	62	81	155	4	0	240	493
04:30 PM	0	1	2	0	3	3	152	17	0	172	8	0	49	0	57	65	147	5	0	217	449
04:45 PM	7	4	1	0	12	2	173	31	0	206	9	4	56	0	69	55	201	3	0	259	546
Total	34	19	11	0	64	8	605	91	0	704	40	9	193	0	242	246	622	18	0	886	1896
05:00 PM	3	0	5	0	8	1	150	15	0	166	14	0	47	0	61	84	184	3	0	271	506
05:15 PM	1	1	2	0	4	0	145	22	0	167	15	0	39	0	54	79	176	0	0	255	480
05:30 PM	3	0	0	0	3	0	154	27	0	181	11	0	47	0	58	71	154	1	0	226	468
05:45 PM	2	0	1	0	3	0	153	10	0	163	7	1	39	0	47	54	163	0	0	217	430
Total	9	1	8	0	18	1	602	74	0	677	47	1	172	0	220	288	677	4	0	969	1884
Grand Total	43	20	19	0	82	9	1207	165	0	1381	87	10	365	0	462	534	1299	22	0	1855	3780
Apprch %	52.4	24.4	23.2	0		0.7	87.4	11.9	0		18.8	2.2	79	0		28.8	70	1.2	0		
Total %	1.1	0.5	0.5	0	2.2	0.2	31.9	4.4	0	36.5	2.3	0.3	9.7	0	12.2	14.1	34.4	0.6	0	49.1	

	McKINNON ST Southbound					BORONDA RD Westbound					McKINNON ST Northbound					BORONDA RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	7	4	1	0	12	2	173	31	0	206	9	4	56	0	69	55	201	3	0	259	546
05:00 PM	3	0	5	0	8	1	150	15	0	166	14	0	47	0	61	84	184	3	0	271	506
05:15 PM	1	1	2	0	4	0	145	22	0	167	15	0	39	0	54	79	176	0	0	255	480
05:30 PM	3	0	0	0	3	0	154	27	0	181	11	0	47	0	58	71	154	1	0	226	468
Total Volume	14	5	8	0	27	3	622	95	0	720	49	4	189	0	242	289	715	7	0	1011	2000
% App. Total	51.9	18.5	29.6	0		0.4	86.4	13.2	0		20.2	1.7	78.1	0		28.6	70.7	0.7	0		
PHF	.500	.313	.400	.000	.563	.375	.899	.766	.000	.874	.817	.250	.844	.000	.877	.860	.889	.583	.000	.933	.916

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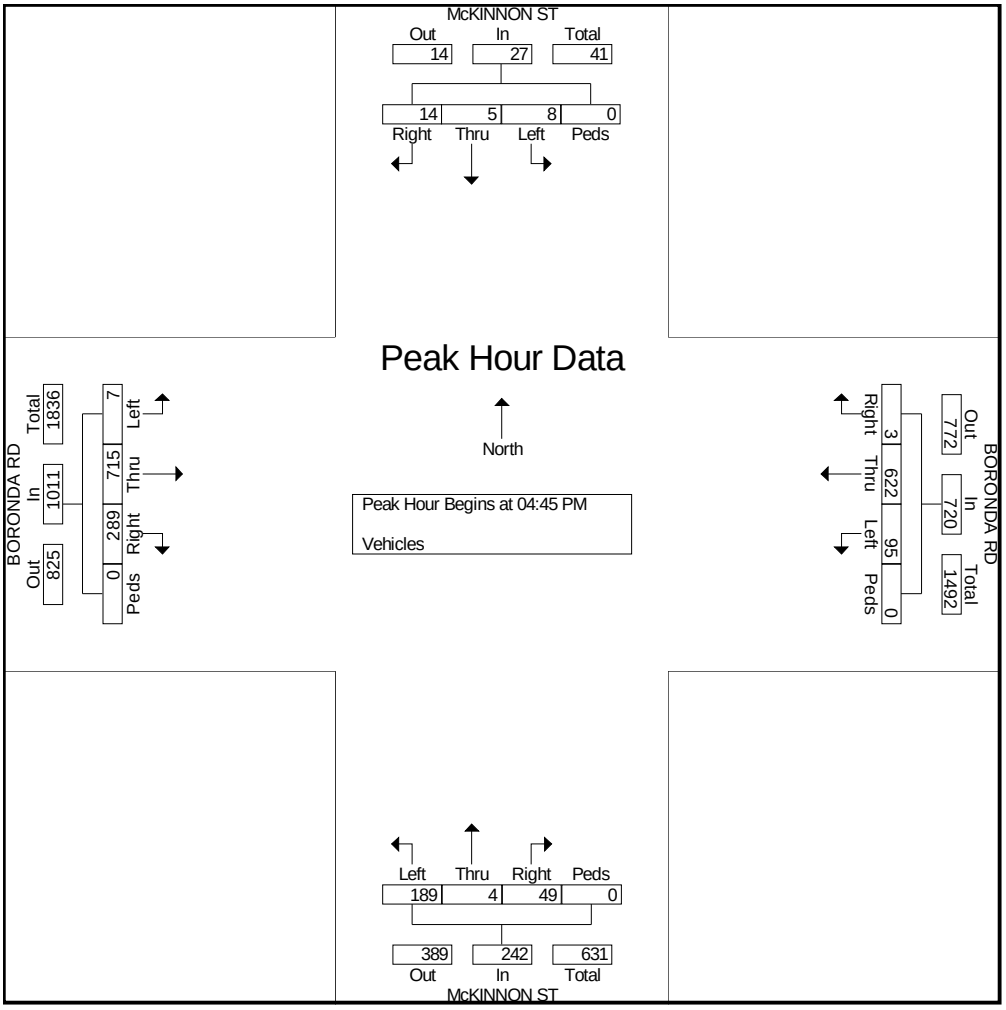

Traffic Data Service
Vehicle Counts

Datasets:

Site: **[1E] EB BORONDA RD BETWEEN EL DORADO & NATIVIDAD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: East (bound)
Separation: All - (Headway)
Name: TDS Standard
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Thursday, February 18, 2010 - Total=4400 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**716**	**681**	**731**	**605**	**554**	**431**	**388**	**178**	**116**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	179	200	145	143	120	129	61	40	25
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	174	159	179	173	147	99	110	42	19	17
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	186	168	181	150	134	107	83	42	29	14
-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	156	175	171	137	130	105	66	33	28	19

*** Friday, February 19, 2010 - Total=9402, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
75	**50**	**22**	**19**	**30**	**88**	**149**	**410**	**463**	**329**	**372**	**478**	**585**	**610**	**679**	**754**	**706**	**776**	**748**	**630**	**525**	**454**	**268**	**182**	
25	13	3	2	3	14	22	64	153	71	85	105	**167**	166	148	199	190	**201**	177	165	143	131	82	53	39
17	16	5	7	5	21	36	79	105	72	97	120	**137**	144	178	200	178	**210**	169	163	136	116	62	60	28
14	16	5	3	7	20	40	113	107	95	95	116	**141**	148	173	165	169	**180**	213	140	125	104	68	36	26
19	5	9	7	15	33	51	154	98	91	95	**137**	140	152	180	190	169	**185**	189	162	121	103	56	33	26

AM Peak 1145 - 1245 (582), AM PHF=0.87 PM Peak 1700 - 1800 (776), PM PHF=0.92

*** Saturday, February 20, 2010 - Total=9185, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
119	**69**	**59**	**36**	**33**	**53**	**95**	**164**	**244**	**371**	**417**	**523**	**674**	**726**	**705**	**757**	**743**	**728**	**668**	**580**	**509**	**441**	**281**	**190**	
39	21	20	9	10	6	9	26	52	93	100	117	**169**	170	189	187	149	**166**	189	170	157	133	90	56	32
28	15	22	10	4	11	25	34	60	73	104	128	**148**	190	176	208	**201**	197	167	138	128	117	75	51	25
26	17	11	10	8	16	33	56	59	97	105	132	**182**	181	158	171	**203**	177	163	134	117	102	58	45	24
26	16	6	7	11	20	28	48	73	108	108	**146**	175	185	182	191	**190**	188	149	138	107	89	58	38	22

AM Peak 1145 - 1245 (645), AM PHF=0.89 PM Peak 1615 - 1715 (760), PM PHF=0.94

*** Sunday, February 21, 2010 - Total=7830, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
103	**72**	**64**	**40**	**35**	**39**	**55**	**160**	**186**	**286**	**350**	**411**	**551**	**582**	**720**	**684**	**653**	**637**	**678**	**591**	**387**	**296**	**155**	**95**	
32	28	16	14	8	8	9	21	46	58	92	89	**117**	160	168	**166**	160	162	166	168	111	99	51	31	12
25	16	16	13	8	5	11	47	35	57	76	114	**123**	125	173	**178**	158	156	177	144	104	62	33	17	15
24	9	13	8	7	9	19	40	44	87	88	98	**142**	140	**177**	167	183	147	174	155	93	77	41	20	11
22	19	19	5	12	17	16	52	61	84	94	**110**	169	157	**202**	173	152	172	161	124	79	58	30	27	16

AM Peak 1145 - 1245 (492), AM PHF=0.87 PM Peak 1430 - 1530 (723), PM PHF=0.89

*** Monday, February 22, 2010 - Total=8751, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
54	**35**	**29**	**24**	**38**	**71**	**142**	**459**	**438**	**369**	**404**	**479**	**570**	**578**	**689**	**670**	**678**	**752**	**669**	**545**	**447**	**321**	**183**	**107**	
12	9	8	4	6	14	15	75	157	77	86	104	**148**	132	147	168	161	**213**	166	157	130	100	54	38	19
15	9	9	8	6	12	36	80	98	89	99	131	**151**	142	175	195	171	**189**	168	135	115	83	49	29	13
11	8	8	4	12	15	42	137	96	105	106	117	**146**	166	184	148	155	**175**	183	134	96	73	43	21	17
16	9	4	8	14	30	49	167	87	98	113	**127**	125	138	183	159	**191**	175	152	119	106	65	37	19	11

AM Peak 1145 - 1245 (572), AM PHF=0.95 PM Peak 1645 - 1745 (768), PM PHF=0.90

*** Tuesday, February 23, 2010 - Total=8094, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
60	**35**	**16**	**16**	**31**	**73**	**170**	**452**	**439**	**294**	**390**	**405**	**548**	**529**	**620**	**644**	**658**	**667**	**606**	**476**	**408**	**294**	**156**	**107**	
19	9	1	2	6	10	25	56	**142**	65	96	88	126	123	164	177	159	**177**	156	139	105	92	42	37	13
13	10	8	7	6	14	35	105	**107**	70	78	97	127	126	157	156	164	**165**	155	108	109	72	36	31	10
17	7	4	1	8	19	64	**111**	101	89	108	106	145	140	146	147	**188**	175	166	114	116	76	48	21	15
11	9	3	6	11	30	46	**180**	89	70	108	114	150	140	153	164	**147**	150	129	115	78	54	30	18	20

AM Peak 0730 - 0830 (540), AM PHF=0.75 PM Peak 1630 - 1730 (677), PM PHF=0.90

*** Wednesday, February 24, 2010 - Total=8441, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
58	**31**	**19**	**16**	**23**	**75**	**134**	**386**	**488**	**338**	**382**	**457**	**535**	**656**	**592**	**638**	**627**	**696**	**630**	**562**	**439**	**364**	**173**	**122**	
13	11	0	5	2	13	16	58	121	84	88	89	**117**	159	142	172	138	168	**169**	152	135	114	49	28	18
10	6	7	2	7	15	31	79	100	84	94	124	**119**	181	141	144	161	**182**	165	129	102	80	54	41	16
15	9	3	4	7	21	42	107	143	91	98	118	**159**	209	151	161	177	**177**	147	154	105	90	32	28	30
20	5	9	5	7	26	45	142	124	79	102	**126**	140	107	158	161	151	**169**	149	127	97	80	38	25	14

AM Peak 1145 - 1245 (521), AM PHF=0.82 PM Peak 1715 - 1815 (697), PM PHF=0.96

*** Thursday, February 25, 2010 - Total=1401 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
78	**34**	**24**	**20**	**32**	**80**	**147**	**452**	**448**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
18	17	7	4	3	19	23	57	138	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	6	9	6	6	11	26	91	104	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	9	5	3	9	19	46	134	111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	2	3	7	14	31	52	170	95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Data Service
Vehicle Counts

Datasets:

Site: **[1W] WB BORONDA RD BETWEEN EL DORADO & NATIVIDAD**
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Speed range: 0 - 100 mph.
Direction: West (bound)
Separation: All - (Headway)
Name: TDS Standard
Scheme: Vehicle classification (Scheme F)
Units: Non metric (ft, mi, ft/s, mph, lb, ton)

*** Thursday, February 18, 2010 - Total=4347 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**813**	**735**	**803**	**673**	**507**	**344**	**235**	**156**	**81**	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	181	175	209	191	142	95	68	59	20	9
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	226	187	198	164	133	82	76	36	27	8
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	226	176	187	177	116	85	54	25	17	12
-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	180	197	209	141	116	82	37	36	17	8

*** Friday, February 19, 2010 - Total=10057, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
37	**24**	**22**	**36**	**94**	**174**	**342**	**513**	**632**	**487**	**532**	**540**	**678**	**623**	**646**	**815**	**694**	**792**	**731**	**567**	**429**	**312**	**233**	**104**	
9	7	7	13	15	45	70	99	**180**	124	127	128	150	174	169	**180**	165	205	221	166	107	78	73	23	20
8	6	4	4	17	37	69	95	**187**	109	139	132	190	151	153	**227**	151	193	189	156	121	86	66	36	16
12	8	8	11	33	41	91	**144**	140	121	130	141	167	159	143	**227**	187	216	169	130	113	75	51	23	15
8	3	3	8	29	51	112	**175**	125	133	136	139	171	139	**181**	181	191	178	152	115	88	73	43	22	19

AM Peak 0730 - 0830 (686), AM PHF=0.92 PM Peak 1445 - 1545 (815), PM PHF=0.90

*** Saturday, February 20, 2010 - Total=9882, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
70	**59**	**44**	**42**	**47**	**120**	**198**	**294**	**380**	**508**	**596**	**680**	**734**	**794**	**740**	**725**	**749**	**731**	**651**	**556**	**439**	**344**	**221**	**160**	
20	13	10	13	14	18	47	51	78	91	140	142	**193**	**196**	191	165	184	168	184	152	122	87	63	43	26
16	16	8	6	6	33	51	68	96	140	142	**194**	178	**209**	168	185	198	190	162	134	117	91	63	42	25
15	16	13	14	12	37	51	71	105	119	147	**160**	172	**177**	172	188	183	170	135	148	120	86	54	46	23
19	14	13	9	15	32	49	104	101	158	167	**184**	191	**212**	209	187	184	203	170	122	80	80	41	29	21

AM Peak 1115 - 1215 (731), AM PHF=0.94 PM Peak 1300 - 1400 (794), PM PHF=0.94

*** Sunday, February 21, 2010 - Total=8412, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
95	**58**	**59**	**35**	**38**	**82**	**83**	**157**	**260**	**354**	**512**	**551**	**752**	**751**	**757**	**724**	**742**	**696**	**561**	**393**	**334**	**214**	**132**	**72**	
26	19	14	10	4	12	18	29	51	74	98	129	**169**	191	**200**	174	166	197	143	100	107	56	39	20	13
25	11	16	11	12	17	19	46	68	78	110	136	**193**	178	**207**	184	184	160	150	111	81	57	41	21	9
23	15	19	8	9	21	25	40	60	101	135	131	**187**	**185**	185	189	209	168	141	93	78	59	29	12	9
21	13	10	6	13	32	21	42	81	101	169	**155**	203	**197**	165	177	183	171	127	89	68	42	23	19	7

AM Peak 1145 - 1245 (704), AM PHF=0.91 PM Peak 1330 - 1430 (789), PM PHF=0.95

*** Monday, February 22, 2010 - Total=9459, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
38	**34**	**25**	**36**	**91**	**181**	**326**	**570**	**618**	**504**	**514**	**522**	**583**	**599**	**597**	**770**	**714**	**766**	**697**	**478**	**364**	**218**	**147**	**67**	
13	8	8	8	18	31	65	103	**175**	108	128	128	131	138	148	164	169	182	**186**	142	107	78	37	24	16
9	8	5	9	15	45	83	99	**167**	101	136	111	131	152	140	204	190	191	**201**	124	85	67	47	14	9
9	13	7	13	25	49	79	**173**	145	130	117	132	188	140	131	217	158	**182**	159	109	83	44	33	10	5
7	5	5	6	33	56	99	**195**	131	165	133	151	133	169	178	185	197	**211**	151	103	89	29	30	19	13

AM Peak 0730 - 0830 (710), AM PHF=0.91 PM Peak 1730 - 1830 (780), PM PHF=0.92

*** Tuesday, February 23, 2010 - Total=8752, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
43	**25**	**18**	**23**	**85**	**203**	**332**	**562**	**655**	**442**	**453**	**483**	**543**	**541**	**521**	**732**	**681**	**721**	**552**	**438**	**302**	**234**	**111**	**52**	
16	8	6	2	13	37	69	99	**173**	113	132	125	132	146	128	159	**172**	150	173	150	89	79	35	19	12
9	6	5	5	27	45	86	115	**208**	106	97	111	137	150	115	**199**	158	209	144	100	68	45	26	14	8
5	7	5	7	23	60	82	**166**	154	103	104	128	153	124	124	**223**	152	180	125	105	74	63	29	9	8
13	4	2	9	22	61	95	**182**	120	120	120	119	121	121	154	**151**	199	182	110	83	71	47	21	10	8

AM Peak 0730 - 0830 (729), AM PHF=0.88 PM Peak 1515 - 1615 (745), PM PHF=0.84

*** Wednesday, February 24, 2010 - Total=9244, 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
36	**18**	**23**	**34**	**73**	**174**	**308**	**508**	**571**	**506**	**468**	**510**	**674**	**595**	**572**	**770**	**623**	**762**	**663**	**502**	**351**	**247**	**151**	**105**	
12	5	6	2	14	30	66	91	127	141	154	105	**176**	158	153	172	159	175	**190**	140	108	61	62	32	11
8	6	6	10	17	47	72	115	142	107	93	141	**137**	124	134	224	162	**205**	173	145	86	75	43	23	14
8	5	7	15	22	40	75	146	145	131	101	124	**176**	137	143	223	153	**173**	170	116	85	51	22	31	15
8	2	4	7	20	57	95	156	157	127	120	**140**	185	176	142	151	149	**209**	130	101	72	60	24	19	10

AM Peak 1145 - 1245 (629), AM PHF=0.89 PM Peak 1715 - 1815 (777), PM PHF=0.93

*** Thursday, February 25, 2010 - Total=2056 (Incomplete) , 15 minute drops**

0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
50	**32**	**33**	**27**	**87**	**183**	**350**	**548**	**647**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
11	12	11	3	11	35	74	108	185	94	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	8	7	4	19	36	91	96	191	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	7	4	11	27	49	99	153	147	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	5	11	9	30	63	86	191	124	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Data Service
Campbell, CA
(408) 377-2988
tdsbay@cs.com

File Name : 11PM US-101 FREEWAY
Site Code : 00000101
Start Date : 2/18/2010
Page No : 1

Groups Printed- Vehicles

	US-101 SOUTHBOUND Southbound					Westbound					US-101 NORTHBOUND Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	534	0	0	534	0	0	0	0	0	0	492	0	0	492	0	0	0	0	0	1026
04:15 PM	0	575	0	0	575	0	0	0	0	0	0	651	0	0	651	0	0	0	0	0	1226
04:30 PM	0	614	0	0	614	0	0	0	0	0	0	624	0	0	624	0	0	0	0	0	1238
04:45 PM	0	799	0	0	799	0	0	0	0	0	0	623	0	0	623	0	0	0	0	0	1422
Total	0	2522	0	0	2522	0	0	0	0	0	0	2390	0	0	2390	0	0	0	0	0	4912
05:00 PM	0	772	0	0	772	0	0	0	0	0	0	817	0	0	817	0	0	0	0	0	1589
05:15 PM	0	816	0	0	816	0	0	0	0	0	0	837	0	0	837	0	0	0	0	0	1653
05:30 PM	0	845	0	0	845	0	0	0	0	0	0	751	0	0	751	0	0	0	0	0	1596
05:45 PM	0	862	0	0	862	0	0	0	0	0	0	588	0	0	588	0	0	0	0	0	1450
Total	0	3295	0	0	3295	0	0	0	0	0	0	2993	0	0	2993	0	0	0	0	0	6288
Grand Total	0	5817	0	0	5817	0	0	0	0	0	0	5383	0	0	5383	0	0	0	0	0	11200
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	51.9	0	0	51.9	0	0	0	0	0	0	48.1	0	0	48.1	0	0	0	0	0	

	US-101 SOUTHBOUND Southbound					Westbound					US-101 NORTHBOUND Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	772	0	0	772	0	0	0	0	0	0	817	0	0	817	0	0	0	0	0	1589
05:15 PM	0	816	0	0	816	0	0	0	0	0	0	837	0	0	837	0	0	0	0	0	1653
05:30 PM	0	845	0	0	845	0	0	0	0	0	0	751	0	0	751	0	0	0	0	0	1596
05:45 PM	0	862	0	0	862	0	0	0	0	0	0	588	0	0	588	0	0	0	0	0	1450
Total Volume	0	3295	0	0	3295	0	0	0	0	0	0	2993	0	0	2993	0	0	0	0	0	6288
% App. Total																					
PHF	.000	.956	.000	.000	.956	.000	.000	.000	.000	.000	.000	.894	.000	.000	.894	.000	.000	.000	.000	.000	.951

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File Name : 11PM US-101 FREEWAY
Site Code : 00000101
Start Date : 2/18/2010
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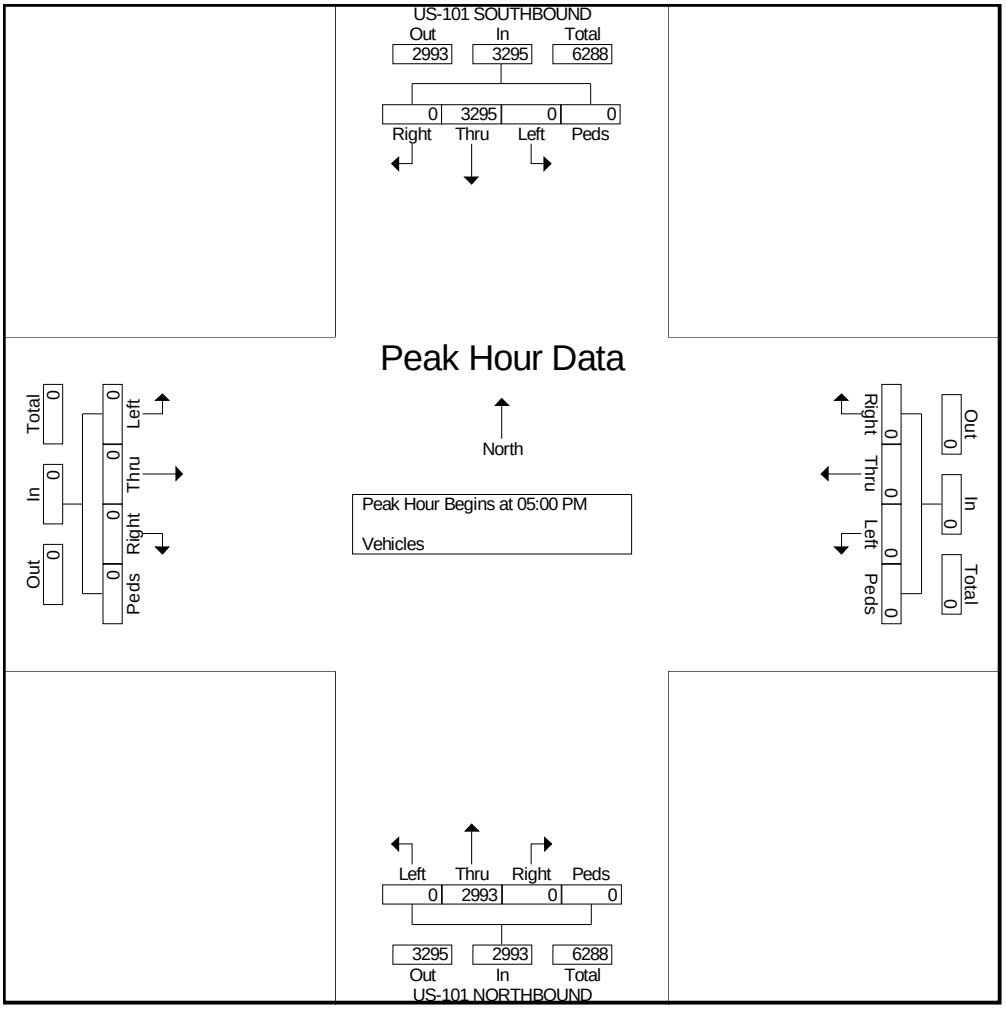
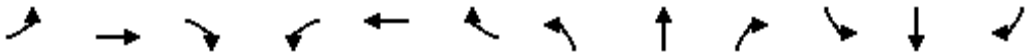


APPENDIX B:
INTERSECTION LEVEL OF SERVICE CALCULATIONS

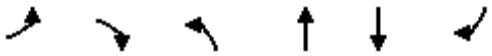


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	381	114	26	235	27	22	5	22	35	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00			1.00			0.99	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.98			0.94			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1757	1863	1522	1761	1826			1706			1731	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87			0.81	
Satd. Flow (perm)	1757	1863	1522	1761	1826			1516			1442	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	405	121	28	250	29	23	5	23	37	5	14
RTOR Reduction (vph)	0	0	77	0	4	0	0	17	0	0	11	0
Lane Group Flow (vph)	12	405	44	28	275	0	0	34	0	0	45	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.5	12.4	12.4	0.6	12.5			8.3			8.3	
Effective Green, g (s)	0.5	12.4	12.4	0.6	12.5			8.3			8.3	
Actuated g/C Ratio	0.01	0.36	0.36	0.02	0.37			0.24			0.24	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	26	677	553	31	669			369			351	
v/s Ratio Prot	0.01	c0.22		c0.02	0.15							
v/s Ratio Perm			0.03					0.02			c0.03	
v/c Ratio	0.46	0.60	0.08	0.90	0.41			0.09			0.13	
Uniform Delay, d1	16.7	8.8	7.1	16.7	8.1			10.0			10.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.7	1.0	0.0	119.0	0.1			0.0			0.1	
Delay (s)	21.3	9.8	7.1	135.8	8.2			10.0			10.1	
Level of Service	C	A	A	F	A			B			B	
Approach Delay (s)		9.4			19.8			10.0			10.1	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	34.1	Sum of lost time (s)	12.8
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	371	67	130	239	5	270	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.83	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1532	1770	1863	1465	1863	1512
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1532	1770	1863	1465	1863	1512
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	395	71	138	254	5	287	168
RTOR Reduction (vph)	0	48	0	0	0	0	117
Lane Group Flow (vph)	395	23	138	254	5	287	51
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	17.0	17.0	6.6	20.8	0.6	15.6	15.6
Effective Green, g (s)	17.0	17.0	6.6	20.8	0.6	15.6	15.6
Actuated g/C Ratio	0.33	0.33	0.13	0.40	0.01	0.30	0.30
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	582	504	226	750	17	562	456
v/s Ratio Prot	c0.22		c0.08	0.14	0.00	c0.15	
v/s Ratio Perm		0.02					0.03
v/c Ratio	0.68	0.05	0.61	0.34	0.29	0.51	0.11
Uniform Delay, d1	15.0	11.8	21.3	10.7	25.3	14.9	13.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.0	3.4	0.1	3.5	0.3	0.0
Delay (s)	17.5	11.8	24.7	10.8	28.8	15.2	13.1
Level of Service	B	B	C	B	C	B	B
Approach Delay (s)	16.6			15.7		14.6	
Approach LOS	B			B		B	

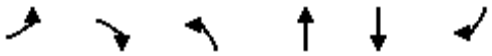
Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	105	120	363	325	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	112	128	386	346	13
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1014	372	369			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1014	372	369			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	83	89			
cM capacity (veh/h)	231	661	1179			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	118	514	359
Volume Left	6	128	0
Volume Right	112	0	13
cSH	601	1179	1700
Volume to Capacity	0.20	0.11	0.21
Queue Length 95th (ft)	18	9	0
Control Delay (s)	12.5	3.0	0.0
Lane LOS	B	A	
Approach Delay (s)	12.5	3.0	0.0
Approach LOS	B		

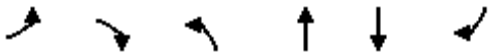
Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	88	95	480	426	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	94	101	511	453	4
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				655		
pX, platoon unblocked	0.85					
vC, conflicting volume	1188	475	467			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1133	475	467			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	84	91			
cM capacity (veh/h)	170	578	1084			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	97	612	457
Volume Left	3	101	0
Volume Right	94	0	4
cSH	536	1084	1700
Volume to Capacity	0.18	0.09	0.27
Queue Length 95th (ft)	16	8	0
Control Delay (s)	13.2	2.4	0.0
Lane LOS	B	A	
Approach Delay (s)	13.2	2.4	0.0
Approach LOS	B		

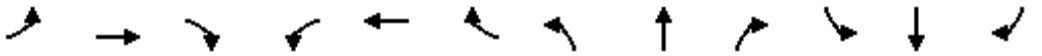
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	3	7	575	514	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	3	7	612	547	0
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				333		
pX, platoon unblocked	0.85					
vC, conflicting volume	1193	567	557			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1139	567	557			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	184	513	1004			

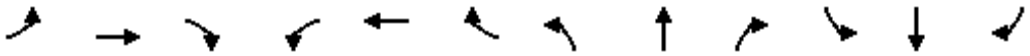
Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	3	7	612	547
Volume Left	0	7	0	0
Volume Right	3	0	0	0
cSH	513	1004	1700	1700
Volume to Capacity	0.01	0.01	0.36	0.32
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	12.1	8.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.1	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		



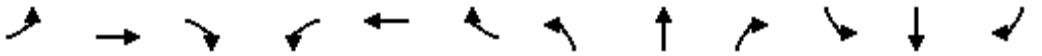
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	↰	↱
Volume (vph)	0	752	180	0	593	623	0	0	0	951	5	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.96				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1513				1681	1686	1554
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1513				1681	1686	1554
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	800	191	0	631	663	0	0	0	1012	5	163
RTOR Reduction (vph)	0	0	0	0	0	418	0	0	0	0	0	87
Lane Group Flow (vph)	0	800	191	0	631	245	0	0	0	506	511	76
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		20.7	56.0		20.7	20.7				24.3	24.3	24.3
Effective Green, g (s)		22.0	56.0		22.0	20.7				26.0	26.0	26.0
Actuated g/C Ratio		0.39	1.00		0.39	0.37				0.46	0.46	0.46
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		1998	1538		1390	559				780	783	722
v/s Ratio Prot		0.16			c0.18					0.30	c0.30	
v/s Ratio Perm			0.12			0.16						0.05
v/c Ratio		0.40	0.12		0.45	0.44				0.65	0.65	0.10
Uniform Delay, d1		12.2	0.0		12.6	13.3				11.5	11.5	8.4
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2		0.2	0.6				1.7	1.8	0.0
Delay (s)		12.4	0.2		12.8	13.8				13.2	13.3	8.5
Level of Service		B	A		B	B				B	B	A
Approach Delay (s)		10.0			13.3			0.0			12.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



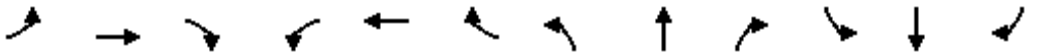
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1449	254	0	941	718	275	1	815	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.95		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1502		5085	1538		1774	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1502		5085	1538		1774	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1541	270	0	1001	764	293	1	867	0	0	0
RTOR Reduction (vph)	0	0	92	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	1541	178	0	1001	764	0	294	865	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		33.8	33.8		48.5	79.0		19.5	35.3			
Effective Green, g (s)		35.1	33.8		49.8	79.0		21.2	37.0			
Actuated g/C Ratio		0.44	0.43		0.63	1.00		0.27	0.47			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2259	643		3205	1538		476	1305			
v/s Ratio Prot		c0.30			0.20			0.17				
v/s Ratio Perm			0.12			0.50			c0.31			
v/c Ratio		0.68	0.28		0.31	0.50		0.62	0.66			
Uniform Delay, d1		17.5	14.7		6.7	0.0		25.3	16.2			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		0.9	0.2		0.1	1.1		2.0	1.2			
Delay (s)		18.4	14.9		6.8	1.1		27.4	17.3			
Level of Service		B	B		A	A		C	B			
Approach Delay (s)		17.9			4.3			19.9			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	79.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	796	448	53	600	98	711	241	47	114	232	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1529	1770	4952		3433	3539	1519	1770	3539	1521
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1529	1770	4952		3433	3539	1519	1770	3539	1521
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	441	847	477	56	638	104	756	256	50	121	247	370
RTOR Reduction (vph)	0	0	230	0	13	0	0	0	43	0	0	264
Lane Group Flow (vph)	441	847	247	56	729	0	756	256	7	121	247	106
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	28.8	46.0	46.0	7.1	24.3		32.7	15.9	15.9	33.5	16.3	16.3
Effective Green, g (s)	29.8	47.5	47.5	8.1	24.3		33.7	17.4	17.4	34.5	17.8	17.8
Actuated g/C Ratio	0.24	0.38	0.38	0.06	0.19		0.27	0.14	0.14	0.28	0.14	0.14
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	820	1348	582	115	965		928	494	212	490	505	217
v/s Ratio Prot	c0.13	c0.24		0.03	c0.15		c0.22	0.07		0.07	c0.07	
v/s Ratio Perm			0.16						0.00			0.07
v/c Ratio	0.54	0.63	0.42	0.49	0.76		0.81	0.52	0.03	0.25	0.49	0.49
Uniform Delay, d1	41.4	31.4	28.5	56.3	47.4		42.6	49.8	46.4	35.0	49.3	49.3
Progression Factor	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.3	1.0	1.2	3.2		5.3	0.6	0.0	0.1	0.4	1.0
Delay (s)	41.8	32.7	29.1	57.5	50.6		47.9	50.3	46.4	35.1	49.7	50.3
Level of Service	D	C	C	E	D		D	D	D	D	D	D
Approach Delay (s)		34.0			51.0			48.4			47.6	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	124.7	Sum of lost time (s)	14.9
Intersection Capacity Utilization	76.1%	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)	87	806	64	163	520	214	95	281	74	193	188	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.97
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)	1770	3493		1770	3539	1506	1770	1863	1533	1770	3539	1532
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)	1770	3493		1770	3539	1506	1770	1863	1533	1770	3539	1532
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	93	857	68	173	553	228	101	299	79	205	200	145
RTOR Reduction (vph)	0	4	0	0	0	154	0	0	62	0	0	107
Lane Group Flow (vph)	93	921	0	173	553	74	101	299	17	205	200	38
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	10.1	34.5		11.2	35.6	35.6	10.9	23.6	23.6	16.4	29.1	29.1
Effective Green, g (s)	10.1	34.5		11.2	35.6	35.6	10.9	23.6	23.6	16.4	29.1	29.1
Actuated g/C Ratio	0.09	0.31		0.10	0.32	0.32	0.10	0.22	0.22	0.15	0.27	0.27
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	163	1099		181	1148	489	176	401	330	265	939	406
v/s Ratio Prot	0.05	c0.26		c0.10	0.16		0.06	c0.16		c0.12	c0.06	
v/s Ratio Perm						0.05			0.01			0.03
v/c Ratio	0.57	0.84		0.96	0.48	0.15	0.57	0.75	0.05	0.77	0.21	0.09
Uniform Delay, d1	47.7	35.0		49.0	29.7	26.3	47.2	40.2	34.2	44.9	31.4	30.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	5.7		53.2	0.3	0.1	2.8	7.4	0.1	12.0	0.1	0.1
Delay (s)	50.7	40.7		102.2	30.0	26.5	50.0	47.6	34.2	56.9	31.5	30.5
Level of Service	D	D		F	C	C	D	D	C	E	C	C
Approach Delay (s)		41.6			42.2			45.9			40.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	30.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1069	4	1	890	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1137	4	1	947	7	1
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			423		
pX, platoon unblocked			0.76		0.79	0.76
vC, conflicting volume			1151		1633	589
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			567		945	0
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		96	100
cM capacity (veh/h)			753		201	808

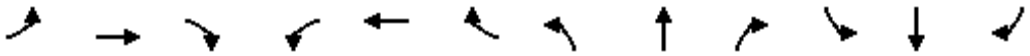
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	569	569	4	1	473	473	9
Volume Left	0	0	0	1	0	0	7
Volume Right	0	0	4	0	0	0	1
cSH	1700	1700	1700	753	1700	1700	222
Volume to Capacity	0.33	0.33	0.00	0.00	0.28	0.28	0.04
Queue Length 95th (ft)	0	0	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	9.8	0.0	0.0	21.9
Lane LOS				A			C
Approach Delay (s)	0.0			0.0			21.9
Approach LOS							C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1055	15	30	847	44	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.96	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1526	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1526	1770	3539	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1122	16	32	901	47	9
RTOR Reduction (vph)	0	3	0	0	0	9
Lane Group Flow (vph)	1122	13	32	901	47	0
Confl. Peds. (#/hr)		10				
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	64.4	64.4	4.5	75.4	4.5	4.5
Effective Green, g (s)	64.4	64.4	4.5	75.4	4.5	4.5
Actuated g/C Ratio	0.70	0.70	0.05	0.82	0.05	0.05
Clearance Time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	1313	1075	87	2919	87	78
v/s Ratio Prot	c0.60		0.02	c0.25	c0.03	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.85	0.01	0.37	0.31	0.54	0.01
Uniform Delay, d1	10.0	4.0	42.1	1.9	42.4	41.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.6	0.0	2.6	0.1	3.6	0.0
Delay (s)	15.7	4.0	44.7	1.9	46.1	41.3
Level of Service	B	A	D	A	D	D
Approach Delay (s)	15.5			3.4	45.3	
Approach LOS	B			A	D	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	91.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



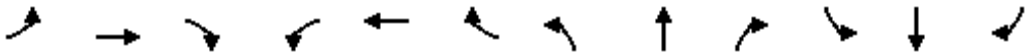
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	767	289	95	674	3	189	4	49	8	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95		1.00	0.95	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1504	1770	1863	1505	1770	1523		1744	1575	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00		0.72	1.00	
Satd. Flow (perm)	1770	1863	1504	1770	1863	1505	1386	1523		1322	1575	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	816	307	101	717	3	201	4	52	9	5	15
RTOR Reduction (vph)	0	0	116	0	0	1	0	42	0	0	12	0
Lane Group Flow (vph)	7	816	191	101	717	2	201	14	0	9	8	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	50.3	50.3	8.3	57.4	57.4	18.8	18.8		18.8	18.8	
Effective Green, g (s)	1.2	50.3	50.3	8.3	57.4	57.4	18.8	18.8		18.8	18.8	
Actuated g/C Ratio	0.01	0.53	0.53	0.09	0.60	0.60	0.20	0.20		0.20	0.20	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	982	793	154	1121	906	273	300		261	310	
v/s Ratio Prot	0.00	c0.44		c0.06	c0.38			0.01			0.01	
v/s Ratio Perm			0.13			0.00	c0.14			0.01		
v/c Ratio	0.32	0.83	0.24	0.66	0.64	0.00	0.74	0.05		0.03	0.03	
Uniform Delay, d1	46.7	19.0	12.2	42.2	12.3	7.6	36.0	31.0		31.0	30.9	
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	8.2	8.1	0.7	9.6	2.8	0.0	9.9	0.1		0.1	0.0	
Delay (s)	54.9	27.1	12.9	51.8	15.1	7.6	45.9	31.1		31.0	30.9	
Level of Service	D	C	B	D	B	A	D	C		C	C	
Approach Delay (s)		23.4			19.6			42.6			31.0	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	24.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	24.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

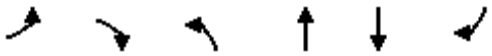


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	158	52	24	149	39	28	4	20	40	18	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.97			0.95			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	1863	1521	1758	1790			1715			1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.82			0.88	
Satd. Flow (perm)	1770	1863	1521	1758	1790			1444			1513	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	168	55	26	159	41	30	4	21	43	19	52
RTOR Reduction (vph)	0	0	37	0	11	0	0	15	0	0	28	0
Lane Group Flow (vph)	45	168	18	26	190	0	0	40	0	0	86	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.6	10.9	10.9	0.6	9.9			8.7			8.7	
Effective Green, g (s)	1.6	10.9	10.9	0.6	9.9			8.7			8.7	
Actuated g/C Ratio	0.05	0.33	0.33	0.02	0.30			0.26			0.26	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	86	615	502	32	537			381			399	
v/s Ratio Prot	c0.03	0.09		0.01	c0.11							
v/s Ratio Perm			0.01					0.03			c0.06	
v/c Ratio	0.52	0.27	0.04	0.81	0.35			0.10			0.22	
Uniform Delay, d1	15.3	8.1	7.5	16.1	9.0			9.2			9.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.6	0.1	0.0	81.6	0.1			0.0			0.1	
Delay (s)	18.0	8.2	7.5	97.7	9.2			9.2			9.6	
Level of Service	B	A	A	F	A			A			A	
Approach Delay (s)		9.7			19.4			9.2			9.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	33.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	134	84	96	186	2	241	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.85	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1536	1770	1863	1508	1863	1522
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1536	1770	1863	1508	1863	1522
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	143	89	102	198	2	256	123
RTOR Reduction (vph)	0	72	0	0	0	0	72
Lane Group Flow (vph)	143	17	102	198	2	256	51
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	7.7	7.7	3.8	19.6	0.5	17.1	17.1
Effective Green, g (s)	7.7	7.7	3.8	19.6	0.5	17.1	17.1
Actuated g/C Ratio	0.19	0.19	0.09	0.48	0.01	0.42	0.42
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	332	288	164	888	18	775	633
v/s Ratio Prot	c0.08		c0.06	c0.11	0.00	c0.14	
v/s Ratio Perm		0.01					0.03
v/c Ratio	0.43	0.06	0.62	0.22	0.11	0.33	0.08
Uniform Delay, d1	14.8	13.7	18.0	6.3	20.1	8.1	7.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	5.2	0.0	1.0	0.1	0.0
Delay (s)	15.1	13.8	23.1	6.3	21.1	8.2	7.3
Level of Service	B	B	C	A	C	A	A
Approach Delay (s)	14.6			12.1		8.0	
Approach LOS	B			B		A	

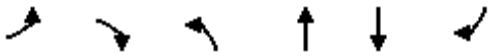
Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	41.1	Sum of lost time (s)	18.3
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	95	66	270	315	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	101	70	287	335	11
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	788	360	356			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	788	360	356			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	85	94			
cM capacity (veh/h)	332	671	1192			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	114	357	346
Volume Left	13	70	0
Volume Right	101	0	11
cSH	602	1192	1700
Volume to Capacity	0.19	0.06	0.20
Queue Length 95th (ft)	17	5	0
Control Delay (s)	12.4	2.1	0.0
Lane LOS	B	A	
Approach Delay (s)	12.4	2.1	0.0
Approach LOS	B		

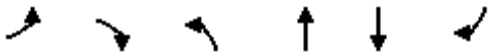
Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	88	63	335	408	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1	94	67	356	434	2
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				655		
pX, platoon unblocked	0.90					
vC, conflicting volume	946	455	446			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	882	455	446			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	84	94			
cM capacity (veh/h)	262	594	1103			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	95	423	436
Volume Left	1	67	0
Volume Right	94	0	2
cSH	585	1103	1700
Volume to Capacity	0.16	0.06	0.26
Queue Length 95th (ft)	14	5	0
Control Delay (s)	12.3	1.9	0.0
Lane LOS	B	A	
Approach Delay (s)	12.3	1.9	0.0
Approach LOS	B		

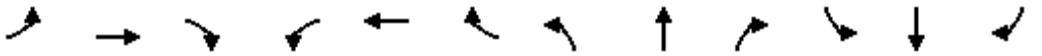
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	1	398	496	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	1	423	528	0
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				333		
pX, platoon unblocked	0.89					
vC, conflicting volume	973	548	538			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	911	548	538			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	267	526	1021			

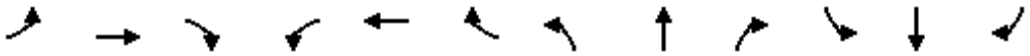
Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	1	423	528
Volume Left	0	1	0	0
Volume Right	0	0	0	0
cSH	1700	1021	1700	1700
Volume to Capacity	0.00	0.00	0.25	0.31
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	8.5	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	856	150	0	869	499	0	0	0	710	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.96				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1515				1681	1686	1552
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1515				1681	1686	1552
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	911	160	0	924	531	0	0	0	755	2	196
RTOR Reduction (vph)	0	0	0	0	0	295	0	0	0	0	0	44
Lane Group Flow (vph)	0	911	160	0	924	236	0	0	0	377	380	152
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		25.2	56.8		25.2	25.2				20.6	20.6	20.6
Effective Green, g (s)		26.5	56.8		26.5	25.2				22.3	22.3	22.3
Actuated g/C Ratio		0.47	1.00		0.47	0.44				0.39	0.39	0.39
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2372	1538		1651	672				660	662	609
v/s Ratio Prot		0.18			c0.26					0.22	c0.23	
v/s Ratio Perm			0.10			0.16						0.10
v/c Ratio		0.38	0.10		0.56	0.35				0.57	0.57	0.25
Uniform Delay, d1		9.8	0.0		10.9	10.4				13.5	13.5	11.6
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.4	0.3				1.0	1.0	0.2
Delay (s)		10.0	0.1		11.4	10.7				14.5	14.5	11.8
Level of Service		A	A		B	B				B	B	B
Approach Delay (s)		8.5			11.1			0.0			13.9	
Approach LOS		A			B			A			B	

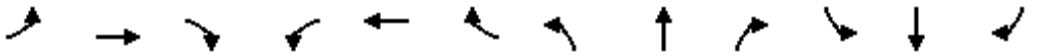
Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	56.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱		↰	↱↱			
Volume (vph)	0	1431	135	0	1211	509	157	0	630	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.95		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1507		5085	1538		1770	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1507		5085	1538		1770	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1522	144	0	1288	541	167	0	670	0	0	0
RTOR Reduction (vph)	0	0	49	0	0	0	0	0	3	0	0	0
Lane Group Flow (vph)	0	1522	95	0	1288	541	0	167	667	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		29.8	29.8		40.6	68.4		16.8	28.7			
Effective Green, g (s)		31.1	29.8		41.9	68.4		18.5	30.4			
Actuated g/C Ratio		0.45	0.44		0.61	1.00		0.27	0.44			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2312	657		3115	1538		479	1239			
v/s Ratio Prot		c0.30			0.25			0.09				
v/s Ratio Perm			0.06			0.35			c0.24			
v/c Ratio		0.66	0.15		0.41	0.35		0.35	0.54			
Uniform Delay, d1		14.5	11.6		6.9	0.0		20.1	13.9			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		0.7	0.1		0.1	0.6		0.3	0.4			
Delay (s)		15.2	11.7		7.0	0.6		20.4	14.2			
Level of Service		B	B		A	A		C	B			
Approach Delay (s)		14.9			5.1			15.5			0.0	
Approach LOS		B			A			B			A	

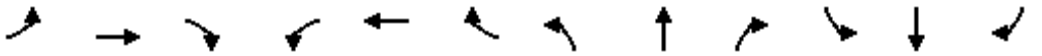
Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	614	413	118	614	104	801	251	54	93	271	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1525	1770	4947		3433	3539	1519	1770	3539	1525
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1525	1770	4947		3433	3539	1519	1770	3539	1525
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	330	653	439	126	653	111	852	267	57	99	288	324
RTOR Reduction (vph)	0	0	272	0	14	0	0	0	49	0	0	156
Lane Group Flow (vph)	330	653	167	126	750	0	852	267	8	99	288	168
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	22.3	33.8	33.8	13.3	24.8		37.5	16.3	16.3	41.1	19.5	19.5
Effective Green, g (s)	23.3	35.3	35.3	14.3	24.8		38.5	17.8	17.8	42.1	21.0	21.0
Actuated g/C Ratio	0.18	0.28	0.28	0.11	0.20		0.30	0.14	0.14	0.33	0.17	0.17
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	631	986	425	200	968		1043	497	213	588	587	253
v/s Ratio Prot	0.10	c0.18		c0.07	c0.15		c0.25	0.08		0.06	0.08	
v/s Ratio Perm			0.11						0.01			c0.11
v/c Ratio	0.52	0.66	0.39	0.63	0.78		0.82	0.54	0.04	0.17	0.49	0.66
Uniform Delay, d1	46.7	40.4	37.0	53.7	48.3		40.8	50.6	47.0	29.9	48.0	49.5
Progression Factor	1.00	1.00	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.1	1.2	4.7	3.7		4.8	0.7	0.0	0.0	0.4	5.5
Delay (s)	47.1	42.6	37.6	58.4	52.0		45.6	51.4	47.1	30.0	48.4	55.0
Level of Service	D	D	D	E	D		D	D	D	C	D	E
Approach Delay (s)		42.1			52.9			47.0			48.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	46.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	126.7	Sum of lost time (s)	19.1
Intersection Capacity Utilization	76.7%	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)	64	626	71	198	602	130	121	205	76	174	209	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.97
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)	1770	3475		1770	3539	1510	1770	1863	1533	1770	3539	1531
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)	1770	3475		1770	3539	1510	1770	1863	1533	1770	3539	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	68	666	76	211	640	138	129	218	81	185	222	120
RTOR Reduction (vph)	0	6	0	0	0	92	0	0	66	0	0	94
Lane Group Flow (vph)	68	736	0	211	640	46	129	218	15	185	222	26
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	7.1	28.2		11.4	32.5	32.5	11.9	18.4	18.4	14.6	21.1	21.1
Effective Green, g (s)	7.1	28.2		11.4	32.5	32.5	11.9	18.4	18.4	14.6	21.1	21.1
Actuated g/C Ratio	0.07	0.29		0.12	0.34	0.34	0.12	0.19	0.19	0.15	0.22	0.22
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	130	1014		209	1191	508	218	355	292	268	773	334
v/s Ratio Prot	0.04	c0.21		c0.12	c0.18		0.07	c0.12		c0.10	c0.06	
v/s Ratio Perm						0.03			0.01			0.02
v/c Ratio	0.52	0.73		1.01	0.54	0.09	0.59	0.61	0.05	0.69	0.29	0.08
Uniform Delay, d1	43.1	30.7		42.6	26.0	21.9	40.1	35.8	32.0	38.9	31.5	30.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	2.6		64.7	0.5	0.1	2.9	3.1	0.1	6.1	0.2	0.1
Delay (s)	44.9	33.3		107.3	26.4	22.0	42.9	39.0	32.0	44.9	31.7	30.1
Level of Service	D	C		F	C	C	D	D	C	D	C	C
Approach Delay (s)		34.3			43.1			38.9			36.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	38.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	96.6	Sum of lost time (s)	36.0
Intersection Capacity Utilization	78.5%	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)	873	3	1	929	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	929	3	1	988	1	0
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			423		
pX, platoon unblocked			0.82		0.86	0.82
vC, conflicting volume			942		1445	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			494		821	0
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	100
cM capacity (veh/h)			867		262	874

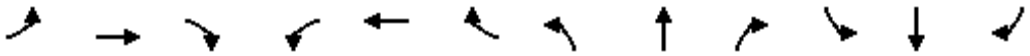
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	464	464	3	1	494	494	1
Volume Left	0	0	0	1	0	0	1
Volume Right	0	0	3	0	0	0	0
cSH	1700	1700	1700	867	1700	1700	262
Volume to Capacity	0.27	0.27	0.00	0.00	0.29	0.29	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	9.2	0.0	0.0	18.8
Lane LOS				A			C
Approach Delay (s)	0.0			0.0			18.8
Approach LOS							C

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	865	8	9	914	16	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1533	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1533	1770	3539	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	920	9	10	972	17	4
RTOR Reduction (vph)	0	2	0	0	0	4
Lane Group Flow (vph)	920	7	10	972	17	0
Confl. Peds. (#/hr)		10				
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	47.6	47.6	0.9	55.0	1.9	1.9
Effective Green, g (s)	47.6	47.6	0.9	55.0	1.9	1.9
Actuated g/C Ratio	0.70	0.70	0.01	0.80	0.03	0.03
Clearance Time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	1296	1067	23	2846	49	44
v/s Ratio Prot	c0.49		0.01	c0.27	c0.01	
v/s Ratio Perm		0.00				0.00
v/c Ratio	0.71	0.01	0.43	0.34	0.35	0.00
Uniform Delay, d1	6.3	3.2	33.5	1.8	32.6	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.0	12.6	0.1	1.6	0.0
Delay (s)	8.1	3.2	46.1	1.9	34.2	32.3
Level of Service	A	A	D	A	C	C
Approach Delay (s)	8.0			2.3	33.8	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	5.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



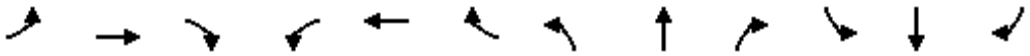
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	729	136	121	728	3	192	0	17	0	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95			0.96	
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	1.00	0.85	1.00	0.85			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1503	1770	1863	1504	1770	1497			1630	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.75	1.00			1.00	
Satd. Flow (perm)	1770	1863	1503	1770	1863	1504	1405	1497			1630	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	776	145	129	774	3	204	0	18	0	2	3
RTOR Reduction (vph)	0	0	59	0	0	1	0	14	0	0	2	0
Lane Group Flow (vph)	4	776	86	129	774	2	204	4	0	0	3	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.7	49.7	10.9	59.4	59.4	19.0	19.0			19.0	
Effective Green, g (s)	1.2	49.7	49.7	10.9	59.4	59.4	19.0	19.0			19.0	
Actuated g/C Ratio	0.01	0.51	0.51	0.11	0.61	0.61	0.19	0.19			0.19	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	22	949	765	198	1134	915	274	291			317	
v/s Ratio Prot	0.00	c0.42		c0.07	c0.42			0.00			0.00	
v/s Ratio Perm			0.06			0.00	c0.15					
v/c Ratio	0.18	0.82	0.11	0.65	0.68	0.00	0.74	0.01			0.01	
Uniform Delay, d1	47.7	20.1	12.5	41.5	12.8	7.5	37.0	31.7			31.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	4.0	7.8	0.3	7.5	3.3	0.0	10.5	0.0			0.0	
Delay (s)	51.7	27.9	12.8	49.0	16.1	7.5	47.5	31.7			31.7	
Level of Service	D	C	B	D	B	A	D	C			C	
Approach Delay (s)		25.6			20.8			46.2			31.7	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	97.6	Sum of lost time (s)	24.5
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

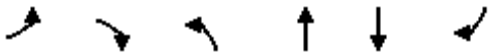


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	385	114	26	239	27	22	5	22	35	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00			1.00			0.99	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.98			0.94			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1757	1863	1522	1761	1826			1706			1731	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87			0.81	
Satd. Flow (perm)	1757	1863	1522	1761	1826			1516			1443	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	410	121	28	254	29	23	5	23	37	5	14
RTOR Reduction (vph)	0	0	78	0	5	0	0	17	0	0	11	0
Lane Group Flow (vph)	12	410	43	28	279	0	0	34	0	0	45	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.5	11.9	11.9	0.6	12.0			8.3			8.3	
Effective Green, g (s)	0.5	11.9	11.9	0.6	12.0			8.3			8.3	
Actuated g/C Ratio	0.01	0.35	0.35	0.02	0.36			0.25			0.25	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	26	660	539	31	652			374			356	
v/s Ratio Prot	0.01	c0.22		c0.02	0.15							
v/s Ratio Perm			0.03					0.02			c0.03	
v/c Ratio	0.46	0.62	0.08	0.90	0.43			0.09			0.13	
Uniform Delay, d1	16.4	9.0	7.2	16.5	8.2			9.7			9.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.7	1.3	0.0	119.0	0.2			0.0			0.1	
Delay (s)	21.1	10.3	7.2	135.5	8.4			9.8			9.9	
Level of Service	C	B	A	F	A			A			A	
Approach Delay (s)		9.9			19.8			9.8			9.9	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	13.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	12.8
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	371	71	134	252	5	282	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.83	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1531	1770	1863	1465	1863	1512
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1531	1770	1863	1465	1863	1512
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	395	76	143	268	5	300	168
RTOR Reduction (vph)	0	51	0	0	0	0	116
Lane Group Flow (vph)	395	25	143	268	5	300	52
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	17.2	17.2	6.8	21.6	0.6	16.2	16.2
Effective Green, g (s)	17.2	17.2	6.8	21.6	0.6	16.2	16.2
Actuated g/C Ratio	0.33	0.33	0.13	0.41	0.01	0.31	0.31
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	578	500	228	764	17	573	465
v/s Ratio Prot	c0.22		c0.08	0.14	0.00	c0.16	
v/s Ratio Perm		0.02					0.03
v/c Ratio	0.68	0.05	0.63	0.35	0.29	0.52	0.11
Uniform Delay, d1	15.4	12.2	21.7	10.7	25.8	15.1	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.0	3.8	0.1	3.5	0.4	0.0
Delay (s)	18.1	12.2	25.6	10.8	29.3	15.5	13.1
Level of Service	B	B	C	B	C	B	B
Approach Delay (s)	17.1			16.0		14.8	
Approach LOS	B			B		B	

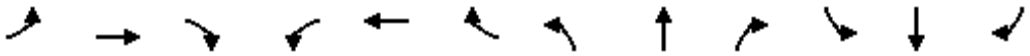
Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	12.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	121	137	380	341	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	129	146	404	363	13
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1267		
pX, platoon unblocked	0.76					
vC, conflicting volume	1085	389	386			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	954	389	386			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	80	87			
cM capacity (veh/h)	187	647	1162			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	135	550	376
Volume Left	6	146	0
Volume Right	129	0	13
cSH	579	1162	1700
Volume to Capacity	0.23	0.13	0.22
Queue Length 95th (ft)	22	11	0
Control Delay (s)	13.1	3.3	0.0
Lane LOS	B	A	
Approach Delay (s)	13.1	3.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	4	88	208	4	14	95	500	105	45	413	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.87		1.00	0.88		1.00	0.97		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1626		1770	1642		1770	3447		1770	3533	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1626		1770	1642		1770	3447		1770	3533	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	3	4	94	221	4	15	101	532	112	48	439	4
RTOR Reduction (vph)	0	84	0	0	12	0	0	16	0	0	1	0
Lane Group Flow (vph)	0	17	0	221	7	0	101	628	0	48	442	0
Confl. Peds. (#/hr)							10					10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.0		14.5	14.5		6.8	21.6		2.6	17.4	
Effective Green, g (s)		7.0		14.5	14.5		6.8	21.6		2.6	17.4	
Actuated g/C Ratio		0.11		0.23	0.23		0.11	0.34		0.04	0.27	
Clearance Time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		179		403	374		189	1169		72	965	
v/s Ratio Prot		c0.01		c0.12	0.00		c0.06	c0.18		0.03	0.13	
v/s Ratio Perm												
v/c Ratio		0.10		0.55	0.02		0.53	0.54		0.67	0.46	
Uniform Delay, d1		25.5		21.7	19.1		27.0	17.0		30.1	19.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2		1.5	0.0		2.9	0.5		20.9	0.3	
Delay (s)		25.7		23.2	19.1		29.8	17.5		51.0	19.6	
Level of Service		C		C	B		C	B		D	B	
Approach Delay (s)		25.7			22.9			19.2			22.7	
Approach LOS		C			C			B			C	

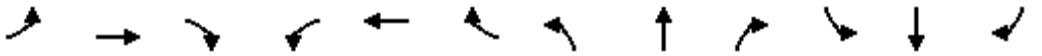
Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	0	0	12	7	688	134	0	709	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	3	0	0	13	7	732	143	0	754	0
Pedestrians		10						10			10	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								333			322	
pX, platoon unblocked	0.94	0.94	0.90	0.94	0.94	0.92	0.90			0.92		
vC, conflicting volume	1168	1654	397	1208	1582	447	764			874		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	689	1205	118	732	1129	237	524			699		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	99			100		
cM capacity (veh/h)	297	169	808	283	187	700	929			825		

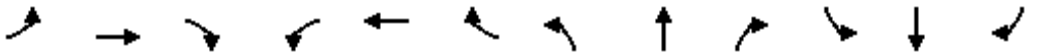
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	3	13	7	488	387	503	251
Volume Left	0	0	7	0	0	0	0
Volume Right	3	13	0	0	143	0	0
cSH	808	700	929	1700	1700	1700	1700
Volume to Capacity	0.00	0.02	0.01	0.29	0.23	0.30	0.15
Queue Length 95th (ft)	0	1	1	0	0	0	0
Control Delay (s)	9.5	10.2	8.9	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	9.5	10.2	0.1			0.0	
Approach LOS	A	B					

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	40.0%	ICU Level of Service	A	
Analysis Period (min)	15			



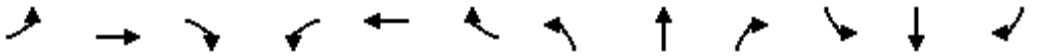
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	↰	↱
Volume (vph)	0	772	180	0	614	770	0	0	0	1012	5	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.95				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1511				1681	1686	1554
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1511				1681	1686	1554
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	821	191	0	653	819	0	0	0	1077	5	163
RTOR Reduction (vph)	0	0	0	0	0	503	0	0	0	0	0	86
Lane Group Flow (vph)	0	821	191	0	653	316	0	0	0	538	544	77
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		24.7	64.0		24.7	24.7				28.3	28.3	28.3
Effective Green, g (s)		26.0	64.0		26.0	24.7				30.0	30.0	30.0
Actuated g/C Ratio		0.41	1.00		0.41	0.39				0.47	0.47	0.47
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2066	1538		1438	583				788	790	728
v/s Ratio Prot		0.16			0.18					0.32	c0.32	
v/s Ratio Perm			0.12			c0.21						0.05
v/c Ratio		0.40	0.12		0.45	0.54				0.68	0.69	0.11
Uniform Delay, d1		13.5	0.0		13.8	15.3				13.3	13.3	9.5
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2		0.2	1.0				2.2	2.3	0.0
Delay (s)		13.6	0.2		14.1	16.3				15.5	15.6	9.6
Level of Service		B	A		B	B				B	B	A
Approach Delay (s)		11.0			15.3			0.0			14.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	9.3
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



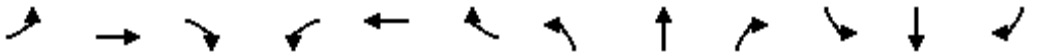
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1530	254	0	1109	781	275	1	957	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.95		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1497		5085	1538		1774	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1497		5085	1538		1774	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1628	270	0	1180	831	293	1	1018	0	0	0
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	1628	181	0	1180	831	0	294	1016	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		36.7	36.7		57.6	89.0		20.4	42.4			
Effective Green, g (s)		38.0	36.7		58.9	89.0		22.1	44.1			
Actuated g/C Ratio		0.43	0.41		0.66	1.00		0.25	0.50			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2171	617		3365	1538		441	1381			
v/s Ratio Prot		c0.32			0.23			0.17				
v/s Ratio Perm			0.12			0.54			c0.36			
v/c Ratio		0.75	0.29		0.35	0.54		0.67	0.74			
Uniform Delay, d1		21.5	17.5		6.6	0.0		30.1	17.8			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		1.5	0.3		0.1	1.4		3.4	2.0			
Delay (s)		23.0	17.8		6.7	1.4		33.5	19.8			
Level of Service		C	B		A	A		C	B			
Approach Delay (s)		22.2			4.5			22.9			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	1019	448	53	831	98	711	241	47	114	232	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1528	1770	4986		3433	3539	1516	1770	3539	1519
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1528	1770	4986		3433	3539	1516	1770	3539	1519
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	441	1084	477	56	884	104	756	256	50	121	247	370
RTOR Reduction (vph)	0	0	170	0	8	0	0	0	43	0	0	265
Lane Group Flow (vph)	441	1084	307	56	980	0	756	256	7	121	247	105
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	28.4	53.9	53.9	7.3	32.8		33.1	16.0	16.0	34.0	16.5	16.5
Effective Green, g (s)	29.4	55.4	55.4	8.3	32.8		34.1	17.5	17.5	35.0	18.0	18.0
Actuated g/C Ratio	0.22	0.42	0.42	0.06	0.25		0.26	0.13	0.13	0.26	0.13	0.13
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	757	1470	635	110	1226		878	464	199	464	478	205
v/s Ratio Prot	c0.13	c0.31		0.03	0.20		c0.22	0.07		0.07	c0.07	
v/s Ratio Perm			0.20						0.00			0.07
v/c Ratio	0.58	0.74	0.48	0.51	0.80		0.86	0.55	0.03	0.26	0.52	0.51
Uniform Delay, d1	46.5	32.9	28.5	60.6	47.2		47.4	54.3	50.6	39.0	53.7	53.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	2.3	1.1	1.3	3.6		8.4	1.0	0.0	0.1	0.6	1.3
Delay (s)	47.3	35.2	29.6	61.9	50.8		55.8	55.3	50.6	39.1	54.2	55.0
Level of Service	D	D	C	E	D		E	E	D	D	D	D
Approach Delay (s)		36.5			51.4			55.4			52.1	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	133.4	Sum of lost time (s)	13.4
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



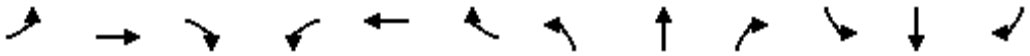
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	294	822	64	187	646	242	95	293	82	286	185	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	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	0.97	1.00	1.00	0.97	1.00	1.00	0.97
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)	1770	3494		1770	5085	1537	1770	3539	1529	1770	3539	1531
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)	1770	3494		1770	5085	1537	1770	3539	1529	1770	3539	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	313	874	68	199	687	257	101	312	87	304	197	256
RTOR Reduction (vph)	0	4	0	0	0	182	0	0	73	0	0	195
Lane Group Flow (vph)	313	938	0	199	687	75	101	312	14	304	197	61
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.2	33.6		11.2	30.6	30.6	10.6	17.1	17.1	18.3	24.8	24.8
Effective Green, g (s)	14.2	33.6		11.2	30.6	30.6	10.6	17.1	17.1	18.3	24.8	24.8
Actuated g/C Ratio	0.14	0.32		0.11	0.29	0.29	0.10	0.16	0.16	0.18	0.24	0.24
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	241	1127		190	1493	451	180	581	251	311	842	364
v/s Ratio Prot	c0.18	c0.27		0.11	0.14		0.06	c0.09		c0.17	0.06	
v/s Ratio Perm						0.05			0.01			0.04
v/c Ratio	1.30	0.83		1.05	0.46	0.17	0.56	0.54	0.06	0.98	0.23	0.17
Uniform Delay, d1	45.0	32.7		46.5	30.1	27.3	44.6	39.9	36.7	42.7	32.0	31.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	161.5	5.4		78.3	0.2	0.2	2.4	1.0	0.1	44.3	0.1	0.2
Delay (s)	206.5	38.1		124.8	30.3	27.5	47.0	40.9	36.8	87.0	32.2	31.7
Level of Service	F	D		F	C	C	D	D	D	F	C	C
Approach Delay (s)		80.1			46.1			41.4			54.0	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM Average Control Delay	58.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	104.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1186	4	1	1045	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1262	4	1	1112	7	1
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			422		
pX, platoon unblocked			0.82		0.90	0.82
vC, conflicting volume			1276		1657	443
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			580		132	0
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	100
cM capacity (veh/h)			806		752	875

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	505	505	257	1	371	371	371	9
Volume Left	0	0	0	1	0	0	0	7
Volume Right	0	0	4	0	0	0	0	1
cSH	1700	1700	1700	806	1700	1700	1700	765
Volume to Capacity	0.30	0.30	0.15	0.00	0.22	0.22	0.22	0.01
Queue Length 95th (ft)	0	0	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	9.5	0.0	0.0	0.0	9.8
Lane LOS				A				A
Approach Delay (s)	0.0			0.0				9.8
Approach LOS								A

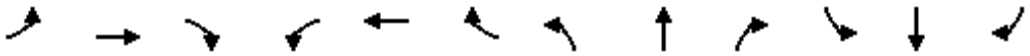
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1107	15	30	885	84	44	4	8	74	4	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3530		1770	3493		1770	1669		1770	1592	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3530		1770	3493		1770	1669		1770	1592	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	69	1178	16	32	941	89	47	4	9	79	4	124
RTOR Reduction (vph)	0	1	0	0	5	0	0	8	0	0	106	0
Lane Group Flow (vph)	69	1193	0	32	1025	0	47	5	0	79	22	0
Confl. Peds. (#/hr)			10									
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	6.9	46.5		3.8	43.4		11.5	11.5		14.7	14.7	
Effective Green, g (s)	6.9	46.5		3.8	43.4		11.5	11.5		14.7	14.7	
Actuated g/C Ratio	0.07	0.47		0.04	0.44		0.12	0.12		0.15	0.15	
Clearance Time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	123	1650		68	1524		205	193		261	235	
v/s Ratio Prot	c0.04	c0.34		0.02	0.29		c0.03	0.00		c0.04	0.01	
v/s Ratio Perm												
v/c Ratio	0.56	0.72		0.47	0.67		0.23	0.03		0.30	0.09	
Uniform Delay, d1	44.8	21.3		46.9	22.4		40.0	39.0		37.8	36.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	1.6		5.1	1.2		0.6	0.1		0.7	0.2	
Delay (s)	50.6	22.9		51.9	23.6		40.5	39.1		38.5	36.8	
Level of Service	D	C		D	C		D	D		D	D	
Approach Delay (s)		24.4			24.4			40.2			37.5	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	99.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



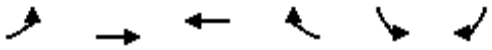
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	851	331	95	755	3	230	4	49	8	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95		1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1503	1770	1863	1504	1770	1525		1743	1581	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00		0.72	1.00	
Satd. Flow (perm)	1770	1863	1503	1770	1863	1504	1386	1525		1322	1581	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	905	352	101	803	3	245	4	52	9	5	15
RTOR Reduction (vph)	0	0	125	0	0	1	0	40	0	0	12	0
Lane Group Flow (vph)	7	905	227	101	803	2	245	16	0	9	8	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.5	49.5	8.3	56.6	56.6	21.7	21.7		21.7	21.7	
Effective Green, g (s)	1.2	49.5	49.5	8.3	56.6	56.6	21.7	21.7		21.7	21.7	
Actuated g/C Ratio	0.01	0.51	0.51	0.09	0.58	0.58	0.22	0.22		0.22	0.22	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	946	763	151	1081	873	308	339		294	352	
v/s Ratio Prot	0.00	c0.49		c0.06	c0.43			0.01			0.01	
v/s Ratio Perm			0.15			0.00	c0.18			0.01		
v/c Ratio	0.32	0.96	0.30	0.67	0.74	0.00	0.80	0.05		0.03	0.02	
Uniform Delay, d1	47.7	23.0	13.9	43.3	15.1	8.6	35.8	29.8		29.7	29.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.2	20.5	1.0	10.7	4.6	0.0	13.2	0.1		0.0	0.0	
Delay (s)	55.9	43.5	14.9	54.0	19.7	8.6	49.0	29.8		29.7	29.6	
Level of Service	E	D	B	D	B	A	D	C		C	C	
Approach Delay (s)		35.6			23.5			45.5			29.7	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	32.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	24.5
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1190	984	68	0	91
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1266	1047	72	0	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		396	535			
pX, platoon unblocked	0.85				0.88	0.85
vC, conflicting volume	1119				1505	385
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	531				0	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	90
cM capacity (veh/h)	880				903	924

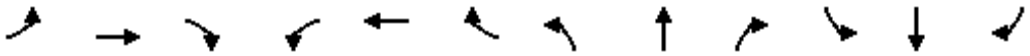
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	422	422	422	419	419	282	97
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	72	97
cSH	1700	1700	1700	1700	1700	1700	924
Volume to Capacity	0.25	0.25	0.25	0.25	0.25	0.17	0.10
Queue Length 95th (ft)	0	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.4
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.4
Approach LOS							A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	517	0	0	462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	550	0	0	491
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			333			
pX, platoon unblocked	0.87	0.87			0.87	
vC, conflicting volume	796	275			550	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	478	0			196	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	451	948			1201	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	367	183	0	246	246
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.22	0.11	0.00	0.14	0.14
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

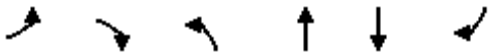


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	164	52	24	154	39	28	4	20	40	18	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.97			0.95			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	1863	1521	1758	1791			1715			1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.82			0.88	
Satd. Flow (perm)	1770	1863	1521	1758	1791			1444			1513	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	174	55	26	164	41	30	4	21	43	19	52
RTOR Reduction (vph)	0	0	37	0	11	0	0	15	0	0	28	0
Lane Group Flow (vph)	45	174	18	26	195	0	0	40	0	0	86	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.6	10.9	10.9	0.6	9.9			8.7			8.7	
Effective Green, g (s)	1.6	10.9	10.9	0.6	9.9			8.7			8.7	
Actuated g/C Ratio	0.05	0.33	0.33	0.02	0.30			0.26			0.26	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	86	615	502	32	537			381			399	
v/s Ratio Prot	c0.03	0.09		0.01	c0.11							
v/s Ratio Perm			0.01					0.03			c0.06	
v/c Ratio	0.52	0.28	0.04	0.81	0.36			0.10			0.22	
Uniform Delay, d1	15.3	8.2	7.5	16.1	9.1			9.2			9.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.6	0.1	0.0	81.6	0.2			0.0			0.1	
Delay (s)	18.0	8.3	7.5	97.7	9.2			9.2			9.6	
Level of Service	B	A	A	F	A			A			A	
Approach Delay (s)		9.7			19.2			9.2			9.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	33.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	134	90	101	202	2	258	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.85	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1536	1770	1863	1511	1863	1522
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1536	1770	1863	1511	1863	1522
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	143	96	107	215	2	274	123
RTOR Reduction (vph)	0	78	0	0	0	0	72
Lane Group Flow (vph)	143	18	107	215	2	274	51
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	7.8	7.8	3.9	20.0	0.5	17.4	17.4
Effective Green, g (s)	7.8	7.8	3.9	20.0	0.5	17.4	17.4
Actuated g/C Ratio	0.19	0.19	0.09	0.48	0.01	0.42	0.42
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	332	288	166	896	18	779	637
v/s Ratio Prot	c0.08		c0.06	c0.12	0.00	c0.15	
v/s Ratio Perm		0.01					0.03
v/c Ratio	0.43	0.06	0.64	0.24	0.11	0.35	0.08
Uniform Delay, d1	14.9	13.9	18.2	6.3	20.3	8.3	7.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	6.3	0.1	1.0	0.1	0.0
Delay (s)	15.3	13.9	24.5	6.4	21.3	8.4	7.3
Level of Service	B	B	C	A	C	A	A
Approach Delay (s)	14.7			12.4		8.1	
Approach LOS	B			B		A	

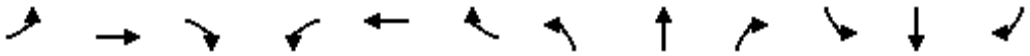
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	41.6	Sum of lost time (s)	18.3
Intersection Capacity Utilization	40.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	118	87	291	338	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	126	93	310	360	11
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1267		
pX, platoon unblocked	0.84					
vC, conflicting volume	880	385	380			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	759	385	380			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	81	92			
cM capacity (veh/h)	283	650	1167			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	138	402	370
Volume Left	13	93	0
Volume Right	126	0	11
cSH	581	1167	1700
Volume to Capacity	0.24	0.08	0.22
Queue Length 95th (ft)	23	6	0
Control Delay (s)	13.1	2.5	0.0
Lane LOS	B	A	
Approach Delay (s)	13.1	2.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	6	88	265	5	16	63	361	141	64	390	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.87		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1628		1770	1647		1770	3390		1770	3536	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1628		1770	1647		1770	3390		1770	3536	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	6	94	282	5	17	67	384	150	68	415	2
RTOR Reduction (vph)	0	83	0	0	13	0	0	41	0	0	0	0
Lane Group Flow (vph)	0	18	0	282	9	0	67	493	0	68	417	0
Confl. Peds. (#/hr)							10					10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.0		15.8	15.8		3.7	15.7		3.7	15.7	
Effective Green, g (s)		7.0		15.8	15.8		3.7	15.7		3.7	15.7	
Actuated g/C Ratio		0.12		0.26	0.26		0.06	0.26		0.06	0.26	
Clearance Time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		189		465	432		109	884		109	922	
v/s Ratio Prot		c0.01		c0.16	0.01		0.04	c0.15		c0.04	0.12	
v/s Ratio Perm												
v/c Ratio		0.09		0.61	0.02		0.61	0.56		0.62	0.45	
Uniform Delay, d1		23.8		19.5	16.5		27.6	19.2		27.6	18.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2		2.2	0.0		9.9	0.8		10.6	0.4	
Delay (s)		24.0		21.7	16.5		37.4	20.0		38.2	19.0	
Level of Service		C		C	B		D	C		D	B	
Approach Delay (s)		24.0			21.3			22.0			21.7	
Approach LOS		C			C			C			C	

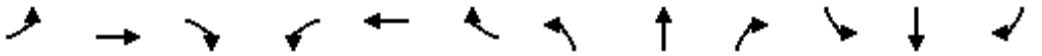
Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	14	1	551	183	0	743	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	0	0	15	1	586	195	0	790	0
Pedestrians		10						10			10	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								333			322	
pX, platoon unblocked	0.94	0.94	0.91	0.94	0.94	0.95	0.91			0.95		
vC, conflicting volume	1121	1583	415	1091	1486	400	800			781		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	731	1225	158	700	1122	250	582			653		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	100			100		
cM capacity (veh/h)	276	164	767	300	190	702	891			879		

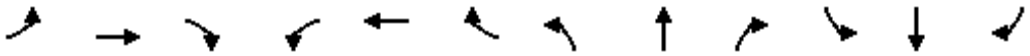
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	15	1	391	390	527	263
Volume Left	0	0	1	0	0	0	0
Volume Right	0	15	0	0	195	0	0
cSH	1700	702	891	1700	1700	1700	1700
Volume to Capacity	0.00	0.02	0.00	0.23	0.23	0.31	0.15
Queue Length 95th (ft)	0	2	0	0	0	0	0
Control Delay (s)	0.0	10.2	9.0	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	0.0	10.2	0.0			0.0	
Approach LOS	A	B					

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	884	150	0	895	683	0	0	0	796	2	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.96				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1513				1681	1686	1553
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1513				1681	1686	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	940	160	0	952	727	0	0	0	847	2	196
RTOR Reduction (vph)	0	0	0	0	0	397	0	0	0	0	0	39
Lane Group Flow (vph)	0	940	160	0	952	330	0	0	0	423	426	157
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		29.4	64.8		29.4	29.4				24.4	24.4	24.4
Effective Green, g (s)		30.7	64.8		30.7	29.4				26.1	26.1	26.1
Actuated g/C Ratio		0.47	1.00		0.47	0.45				0.40	0.40	0.40
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2409	1538		1677	686				677	679	626
v/s Ratio Prot		0.18			c0.27					0.25	c0.25	
v/s Ratio Perm			0.10			0.22						0.10
v/c Ratio		0.39	0.10		0.57	0.48				0.62	0.63	0.25
Uniform Delay, d1		11.0	0.0		12.3	12.4				15.4	15.5	12.9
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.4	0.5				1.6	1.6	0.2
Delay (s)		11.1	0.1		12.7	12.9				17.0	17.0	13.0
Level of Service		B	A		B	B				B	B	B
Approach Delay (s)		9.5			12.8			0.0			16.3	
Approach LOS		A			B			A			B	

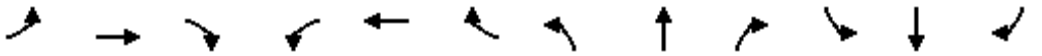
Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	64.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1545	135	0	1421	588	157	0	830	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.95		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1500		5085	1538		1770	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1500		5085	1538		1770	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1644	144	0	1512	626	167	0	883	0	0	0
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	1644	97	0	1512	626	0	167	881	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		33.9	33.9		51.9	82.3		19.4	38.5			
Effective Green, g (s)		35.2	33.9		53.2	82.3		21.1	40.2			
Actuated g/C Ratio		0.43	0.41		0.65	1.00		0.26	0.49			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2175	618		3287	1538		454	1361			
v/s Ratio Prot		c0.32			0.30			0.09				
v/s Ratio Perm			0.06			0.41			c0.32			
v/c Ratio		0.76	0.16		0.46	0.41		0.37	0.65			
Uniform Delay, d1		19.9	15.2		7.3	0.0		25.1	15.8			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		1.5	0.1		0.1	0.8		0.4	0.9			
Delay (s)		21.5	15.3		7.4	0.8		25.5	16.7			
Level of Service		C	B		A	A		C	B			
Approach Delay (s)		21.0			5.5			18.1			0.0	
Approach LOS		C			A			B			A	

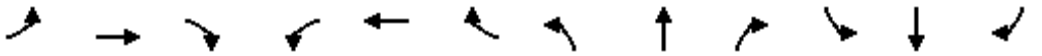
Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	928	413	118	903	104	801	251	54	93	271	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1525	1770	4988		3433	3539	1517	1770	3539	1523
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1525	1770	4988		3433	3539	1517	1770	3539	1523
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	330	987	439	126	961	111	852	267	57	99	288	324
RTOR Reduction (vph)	0	0	175	0	8	0	0	0	49	0	0	155
Lane Group Flow (vph)	330	987	264	126	1064	0	852	267	8	99	288	169
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.1	38.0	38.0	13.2	32.1		37.5	16.3	16.3	41.4	19.8	19.8
Effective Green, g (s)	20.1	39.5	39.5	14.2	32.1		38.5	17.8	17.8	42.4	21.3	21.3
Actuated g/C Ratio	0.15	0.30	0.30	0.11	0.24		0.29	0.14	0.14	0.32	0.16	0.16
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	526	1066	459	192	1221		1008	481	206	572	575	247
v/s Ratio Prot	c0.10	c0.28		0.07	0.21		c0.25	0.08		0.06	0.08	
v/s Ratio Perm			0.17						0.01			c0.11
v/c Ratio	0.63	0.93	0.58	0.66	0.87		0.85	0.56	0.04	0.17	0.50	0.68
Uniform Delay, d1	52.0	44.4	38.7	56.1	47.5		43.5	52.9	49.2	31.8	50.1	51.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	13.7	2.6	6.0	7.0		6.4	1.0	0.0	0.1	0.4	6.6
Delay (s)	53.7	58.1	41.3	62.1	54.5		49.9	53.9	49.3	31.8	50.5	58.4
Level of Service	D	E	D	E	D		D	D	D	C	D	E
Approach Delay (s)		53.0			55.3			50.8			51.5	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	52.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	131.1	Sum of lost time (s)	13.4
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



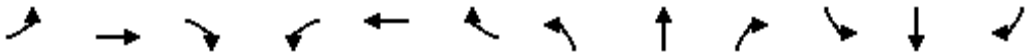
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	654	71	229	756	161	121	224	86	290	205	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	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	0.97	1.00	1.00	0.97	1.00	1.00	0.97
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)	1770	3477		1770	5085	1536	1770	3539	1529	1770	3539	1532
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)	1770	3477		1770	5085	1536	1770	3539	1529	1770	3539	1532
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	372	696	76	244	804	171	129	238	91	309	218	264
RTOR Reduction (vph)	0	6	0	0	0	128	0	0	77	0	0	205
Lane Group Flow (vph)	372	766	0	244	804	43	129	238	14	309	218	59
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.3	26.8		11.3	23.8	23.8	11.8	14.8	14.8	18.4	21.4	21.4
Effective Green, g (s)	14.3	26.8		11.3	23.8	23.8	11.8	14.8	14.8	18.4	21.4	21.4
Actuated g/C Ratio	0.15	0.28		0.12	0.25	0.25	0.12	0.16	0.16	0.19	0.22	0.22
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	266	978		210	1270	384	219	550	237	342	795	344
v/s Ratio Prot	c0.21	c0.22		0.14	0.16		0.07	c0.07		c0.17	0.06	
v/s Ratio Perm						0.03			0.01			0.04
v/c Ratio	1.40	0.78		1.16	0.63	0.11	0.59	0.43	0.06	0.90	0.27	0.17
Uniform Delay, d1	40.5	31.6		42.0	31.9	27.6	39.5	36.4	34.3	37.6	30.5	29.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	200.6	4.1		112.6	1.0	0.1	2.6	0.5	0.1	25.5	0.2	0.2
Delay (s)	241.1	35.7		154.6	32.9	27.7	42.1	37.0	34.4	63.1	30.7	30.0
Level of Service	F	D		F	C	C	D	D	C	E	C	C
Approach Delay (s)		102.5			56.5			37.9			43.1	
Approach LOS		F			E			D			D	

Intersection Summary			
HCM Average Control Delay	65.8	HCM Level of Service	E
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1027	3	1	1128	1	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1093	3	1	1200	1	0
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			422		
pX, platoon unblocked			0.89		0.86	0.89
vC, conflicting volume			1106		1516	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			702		212	0
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	100
cM capacity (veh/h)			789		640	951

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	437	437	222	1	400	400	400	1
Volume Left	0	0	0	1	0	0	0	1
Volume Right	0	0	3	0	0	0	0	0
cSH	1700	1700	1700	789	1700	1700	1700	640
Volume to Capacity	0.26	0.26	0.13	0.00	0.24	0.24	0.24	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	9.6	0.0	0.0	0.0	10.6
Lane LOS				A				B
Approach Delay (s)	0.0			0.0				10.6
Approach LOS								B

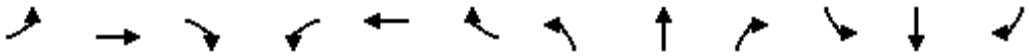
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	931	8	9	964	121	16	6	4	92	5	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.94		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3533		1770	3480		1770	1751		1770	1592	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3533		1770	3480		1770	1751		1770	1592	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	94	990	9	10	1026	129	17	6	4	98	5	159
RTOR Reduction (vph)	0	0	0	0	6	0	0	4	0	0	136	0
Lane Group Flow (vph)	94	999	0	10	1149	0	17	6	0	98	28	0
Confl. Peds. (#/hr)			10									
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	10.8	55.8		0.9	45.9		9.2	9.2		15.4	15.4	
Effective Green, g (s)	10.8	55.8		0.9	45.9		9.2	9.2		15.4	15.4	
Actuated g/C Ratio	0.10	0.53		0.01	0.44		0.09	0.09		0.15	0.15	
Clearance Time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	183	1890		15	1531		156	154		261	235	
v/s Ratio Prot	c0.05	c0.28		0.01	c0.33		c0.01	0.00		c0.06	0.02	
v/s Ratio Perm												
v/c Ratio	0.51	0.53		0.67	0.75		0.11	0.04		0.38	0.12	
Uniform Delay, d1	44.3	15.7		51.6	24.4		43.8	43.5		40.1	38.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.3		75.9	2.1		0.3	0.1		0.9	0.2	
Delay (s)	46.7	16.0		127.4	26.5		44.1	43.6		41.0	38.8	
Level of Service	D	B		F	C		D	D		D	D	
Approach Delay (s)		18.6			27.4			43.9			39.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	104.3	Sum of lost time (s)	29.5
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



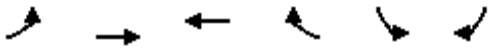
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	834	189	121	842	3	249	0	17	0	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95			0.97	
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	1.00	0.85	1.00	0.85			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1500	1770	1863	1502	1770	1500			1637	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.75	1.00			1.00	
Satd. Flow (perm)	1770	1863	1500	1770	1863	1502	1405	1500			1637	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	887	201	129	896	3	265	0	18	0	2	3
RTOR Reduction (vph)	0	0	75	0	0	1	0	14	0	0	2	0
Lane Group Flow (vph)	4	887	126	129	896	2	265	4	0	0	3	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.8	49.8	10.9	59.5	59.5	23.2	23.2			23.2	
Effective Green, g (s)	1.2	49.8	49.8	10.9	59.5	59.5	23.2	23.2			23.2	
Actuated g/C Ratio	0.01	0.49	0.49	0.11	0.58	0.58	0.23	0.23			0.23	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	21	910	733	189	1088	877	320	342			373	
v/s Ratio Prot	0.00	c0.48		c0.07	c0.48			0.00			0.00	
v/s Ratio Perm			0.08			0.00	c0.19					
v/c Ratio	0.19	0.97	0.17	0.68	0.82	0.00	0.83	0.01			0.01	
Uniform Delay, d1	49.9	25.4	14.5	43.8	17.0	8.8	37.5	30.5			30.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	4.4	24.3	0.5	9.7	7.1	0.0	16.0	0.0			0.0	
Delay (s)	54.3	49.7	15.0	53.6	24.1	8.8	53.4	30.5			30.4	
Level of Service	D	D	B	D	C	A	D	C			C	
Approach Delay (s)		43.4			27.7			52.0			30.4	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	37.7	HCM Level of Service	D
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	101.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

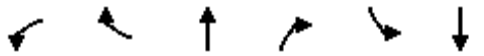
Channelized right turn lanes are not counted.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1030	1030	99	0	116
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1096	1096	105	0	123
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		396	535			
pX, platoon unblocked	0.83				0.89	0.83
vC, conflicting volume	1201				1514	418
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	523				207	0
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	86
cM capacity (veh/h)	862				681	900

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	365	365	365	438	438	324	123
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	105	123
cSH	1700	1700	1700	1700	1700	1700	900
Volume to Capacity	0.21	0.21	0.21	0.26	0.26	0.19	0.14
Queue Length 95th (ft)	0	0	0	0	0	0	12
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.6
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.6
Approach LOS							A

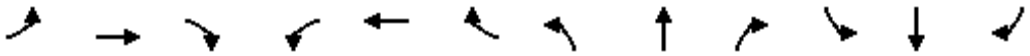
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	378	0	0	456
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	402	0	0	485
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			333			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	645	201			402	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	425	0			160	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	510	992			1296	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	268	134	0	243	243
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.16	0.08	0.00	0.14	0.14
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

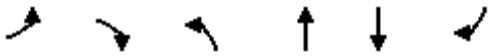


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	398	114	26	245	27	22	5	22	35	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00			1.00			0.99	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.98			0.94			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1757	1863	1522	1761	1827			1706			1731	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87			0.81	
Satd. Flow (perm)	1757	1863	1522	1761	1827			1517			1443	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	423	121	28	261	29	23	5	23	37	5	14
RTOR Reduction (vph)	0	0	74	0	4	0	0	17	0	0	11	0
Lane Group Flow (vph)	12	423	47	28	286	0	0	34	0	0	45	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.5	12.9	12.9	0.6	13.0			8.4			8.4	
Effective Green, g (s)	0.5	12.9	12.9	0.6	13.0			8.4			8.4	
Actuated g/C Ratio	0.01	0.37	0.37	0.02	0.37			0.24			0.24	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	25	693	566	30	684			367			349	
v/s Ratio Prot	0.01	c0.23		c0.02	0.16							
v/s Ratio Perm			0.03					0.02			c0.03	
v/c Ratio	0.48	0.61	0.08	0.93	0.42			0.09			0.13	
Uniform Delay, d1	17.0	8.9	7.1	17.0	8.0			10.2			10.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	5.2	1.1	0.0	134.2	0.2			0.0			0.1	
Delay (s)	22.2	10.0	7.1	151.2	8.2			10.2			10.4	
Level of Service	C	A	A	F	A			B			B	
Approach Delay (s)		9.6			20.8			10.2			10.4	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	34.7	Sum of lost time (s)	12.8
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	385	70	133	422	5	403	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.85	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1529	1770	1863	1503	1863	1512
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1529	1770	1863	1503	1863	1512
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	410	74	141	449	5	429	176
RTOR Reduction (vph)	0	50	0	0	0	0	114
Lane Group Flow (vph)	410	24	141	449	5	429	62
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	19.0	19.0	7.1	26.5	0.6	20.8	20.8
Effective Green, g (s)	19.0	19.0	7.1	26.5	0.6	20.8	20.8
Actuated g/C Ratio	0.32	0.32	0.12	0.45	0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	566	489	212	831	15	652	529
v/s Ratio Prot	c0.23		c0.08	0.24	0.00	c0.23	
v/s Ratio Perm		0.02					0.04
v/c Ratio	0.72	0.05	0.67	0.54	0.33	0.66	0.12
Uniform Delay, d1	17.9	14.0	25.0	12.0	29.2	16.3	13.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	6.0	0.4	4.7	1.8	0.0
Delay (s)	21.8	14.0	31.0	12.4	33.9	18.1	13.1
Level of Service	C	B	C	B	C	B	B
Approach Delay (s)	20.6			16.8		16.8	
Approach LOS	C			B		B	

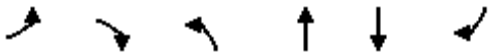
Intersection Summary			
HCM Average Control Delay	17.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	59.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	118	133	549	462	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	126	141	584	491	13
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1385	518	514			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1385	518	514			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	77	86			
cM capacity (veh/h)	134	547	1041			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	132	726	504
Volume Left	6	141	0
Volume Right	126	0	13
cSH	476	1041	1700
Volume to Capacity	0.28	0.14	0.30
Queue Length 95th (ft)	28	12	0
Control Delay (s)	15.4	3.3	0.0
Lane LOS	C	A	
Approach Delay (s)	15.4	3.3	0.0
Approach LOS	C		

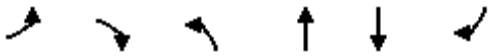
Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	91	98	679	576	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	97	104	722	613	4
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				655		
pX, platoon unblocked	0.77					
vC, conflicting volume	1566	635	627			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1586	635	627			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	79	89			
cM capacity (veh/h)	80	469	946			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	100	827	617
Volume Left	3	104	0
Volume Right	97	0	4
cSH	406	946	1700
Volume to Capacity	0.25	0.11	0.36
Queue Length 95th (ft)	24	9	0
Control Delay (s)	16.7	2.7	0.0
Lane LOS	C	A	
Approach Delay (s)	16.7	2.7	0.0
Approach LOS	C		

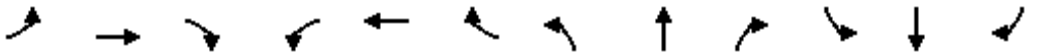
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	3	7	777	667	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	3	7	827	710	0
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				333		
pX, platoon unblocked	0.77					
vC, conflicting volume	1571	730	720			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1593	730	720			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	88	415	873			

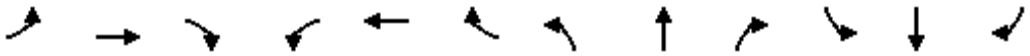
Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	3	7	827	710
Volume Left	0	7	0	0
Volume Right	3	0	0	0
cSH	415	873	1700	1700
Volume to Capacity	0.01	0.01	0.49	0.42
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	13.8	9.2	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.8	0.1		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		



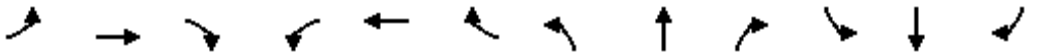
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	786	185	0	626	749	0	0	0	1016	5	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.95				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1510				1681	1686	1554
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1510				1681	1686	1554
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	836	197	0	666	797	0	0	0	1081	5	167
RTOR Reduction (vph)	0	0	0	0	0	490	0	0	0	0	0	82
Lane Group Flow (vph)	0	836	197	0	666	307	0	0	0	540	546	85
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		24.7	64.2		24.7	24.7				28.5	28.5	28.5
Effective Green, g (s)		26.0	64.2		26.0	24.7				30.2	30.2	30.2
Actuated g/C Ratio		0.40	1.00		0.40	0.38				0.47	0.47	0.47
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2059	1538		1433	581				791	793	731
v/s Ratio Prot		0.16			0.19					0.32	c0.32	
v/s Ratio Perm			0.13			c0.20						0.05
v/c Ratio		0.41	0.13		0.46	0.53				0.68	0.69	0.12
Uniform Delay, d1		13.6	0.0		14.0	15.2				13.3	13.3	9.5
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2		0.2	0.9				2.2	2.3	0.1
Delay (s)		13.7	0.2		14.2	16.1				15.5	15.6	9.6
Level of Service		B	A		B	B				B	B	A
Approach Delay (s)		11.1			15.3			0.0			14.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	9.3
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



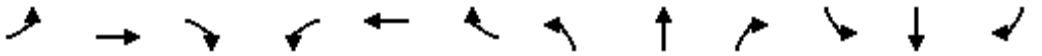
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱		↰	↱↱			
Volume (vph)	0	1543	259	0	1096	778	279	1	944	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.95		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1498		5085	1538		1774	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1498		5085	1538		1774	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1641	276	0	1166	828	297	1	1004	0	0	0
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	1641	187	0	1166	828	0	298	1002	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		36.8	36.8		57.0	88.4		20.4	41.7			
Effective Green, g (s)		38.1	36.8		58.3	88.4		22.1	43.4			
Actuated g/C Ratio		0.43	0.42		0.66	1.00		0.25	0.49			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2192	624		3354	1538		444	1368			
v/s Ratio Prot		c0.32			0.23			0.17				
v/s Ratio Perm			0.12			0.54			c0.36			
v/c Ratio		0.75	0.30		0.35	0.54		0.67	0.73			
Uniform Delay, d1		21.1	17.2		6.6	0.0		29.9	17.9			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		1.4	0.3		0.1	1.4		3.6	1.9			
Delay (s)		22.6	17.5		6.7	1.4		33.5	19.8			
Level of Service		C	B		A	A		C	B			
Approach Delay (s)		21.8			4.5			23.0			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	1012	455	53	809	143	717	332	47	148	299	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1527	1770	4944		3433	3539	1519	1770	3539	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1527	1770	4944		3433	3539	1519	1770	3539	1520
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	441	1077	484	56	861	152	763	353	50	157	318	370
RTOR Reduction (vph)	0	0	176	0	14	0	0	0	42	0	0	260
Lane Group Flow (vph)	441	1077	308	56	999	0	763	353	8	157	318	110
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	28.5	53.9	53.9	7.3	32.7		34.0	19.3	19.3	33.7	18.6	18.6
Effective Green, g (s)	29.5	55.4	55.4	8.3	32.7		35.0	20.8	20.8	34.7	20.1	20.1
Actuated g/C Ratio	0.22	0.41	0.41	0.06	0.24		0.26	0.15	0.15	0.25	0.15	0.15
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	742	1437	620	108	1185		881	540	232	450	522	224
v/s Ratio Prot	c0.13	c0.30		0.03	c0.20		c0.22	0.10		0.09	c0.09	
v/s Ratio Perm			0.20						0.01			0.07
v/c Ratio	0.59	0.75	0.50	0.52	0.84		0.87	0.65	0.03	0.35	0.61	0.49
Uniform Delay, d1	48.1	34.6	30.1	62.1	49.4		48.5	54.4	49.2	41.6	54.5	53.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	2.6	1.2	1.7	5.5		8.6	2.4	0.0	0.2	1.6	1.0
Delay (s)	48.9	37.1	31.3	63.9	54.9		57.1	56.8	49.3	41.8	56.0	54.4
Level of Service	D	D	C	E	D		E	E	D	D	E	D
Approach Delay (s)		38.3			55.4			56.7			52.7	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	136.4	Sum of lost time (s)	14.9
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	1037	64	163	601	259	256	419	86	256	266	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.96
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)	1770	3502		1770	3539	1501	1770	1863	1534	1770	3539	1526
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)	1770	3502		1770	3539	1501	1770	1863	1534	1770	3539	1526
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	113	1103	68	173	639	276	272	446	91	272	283	157
RTOR Reduction (vph)	0	3	0	0	0	190	0	0	63	0	0	122
Lane Group Flow (vph)	113	1168	0	173	639	86	272	446	28	272	283	35
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	11.5	40.1		11.0	39.6	39.6	23.9	34.5	34.5	18.0	28.6	28.6
Effective Green, g (s)	11.5	40.1		11.0	39.6	39.6	23.9	34.5	34.5	18.0	28.6	28.6
Actuated g/C Ratio	0.09	0.31		0.09	0.31	0.31	0.19	0.27	0.27	0.14	0.22	0.22
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	160	1101		153	1098	466	332	504	415	250	793	342
v/s Ratio Prot	0.06	c0.33		c0.10	0.18		0.15	c0.24		c0.15	0.08	
v/s Ratio Perm						0.06			0.02			0.02
v/c Ratio	0.71	1.06		1.13	0.58	0.18	0.82	0.88	0.07	1.09	0.36	0.10
Uniform Delay, d1	56.4	43.8		58.3	37.0	32.2	49.8	44.6	34.6	54.8	41.7	39.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.0	44.7		112.2	0.8	0.2	13.8	16.8	0.1	82.4	0.3	0.1
Delay (s)	67.4	88.4		170.5	37.8	32.4	63.6	61.4	34.7	137.2	42.0	39.4
Level of Service	E	F		F	D	C	E	E	C	F	D	D
Approach Delay (s)		86.6			57.5			59.1			77.8	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM Average Control Delay	71.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	127.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1217	55	99	996	27	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1295	59	105	1060	29	49
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			423		
pX, platoon unblocked			0.70		0.74	0.70
vC, conflicting volume			1363		2055	667
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			662		1267	0
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		70	93
cM capacity (veh/h)			640		97	745

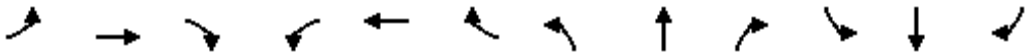
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	647	647	59	105	530	530	78
Volume Left	0	0	0	105	0	0	29
Volume Right	0	0	59	0	0	0	49
cSH	1700	1700	1700	640	1700	1700	215
Volume to Capacity	0.38	0.38	0.03	0.16	0.31	0.31	0.36
Queue Length 95th (ft)	0	0	0	15	0	0	39
Control Delay (s)	0.0	0.0	0.0	11.7	0.0	0.0	31.0
Lane LOS				B			D
Approach Delay (s)	0.0			1.1			31.0
Approach LOS							D

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1245	18	30	1048	47	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.96	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1526	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1526	1770	3539	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1324	19	32	1115	50	9
RTOR Reduction (vph)	0	3	0	0	0	9
Lane Group Flow (vph)	1324	16	32	1115	50	0
Confl. Peds. (#/hr)		10				
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	64.2	64.2	4.5	75.2	4.6	4.6
Effective Green, g (s)	64.2	64.2	4.5	75.2	4.6	4.6
Actuated g/C Ratio	0.70	0.70	0.05	0.82	0.05	0.05
Clearance Time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	1310	1073	87	2915	89	80
v/s Ratio Prot	c0.71		0.02	c0.32	c0.03	
v/s Ratio Perm		0.01				0.00
v/c Ratio	1.01	0.01	0.37	0.38	0.56	0.01
Uniform Delay, d1	13.5	4.1	42.0	2.1	42.4	41.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.5	0.0	2.6	0.1	4.8	0.0
Delay (s)	41.1	4.1	44.6	2.2	47.1	41.2
Level of Service	D	A	D	A	D	D
Approach Delay (s)	40.5			3.3	46.2	
Approach LOS	D			A	D	

Intersection Summary			
HCM Average Control Delay	23.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	91.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



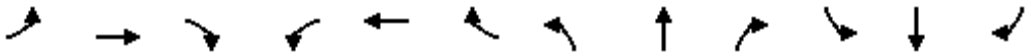
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	924	322	95	843	3	221	4	49	8	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95		1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1503	1770	1863	1504	1770	1525		1743	1579	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00		0.72	1.00	
Satd. Flow (perm)	1770	1863	1503	1770	1863	1504	1386	1525		1322	1579	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	983	343	101	897	3	235	4	52	9	5	15
RTOR Reduction (vph)	0	0	110	0	0	1	0	41	0	0	12	0
Lane Group Flow (vph)	7	983	233	101	897	2	235	15	0	9	8	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.7	49.7	8.2	56.7	56.7	20.8	20.8		20.8	20.8	
Effective Green, g (s)	1.2	49.7	49.7	8.2	56.7	56.7	20.8	20.8		20.8	20.8	
Actuated g/C Ratio	0.01	0.51	0.51	0.08	0.59	0.59	0.22	0.22		0.22	0.22	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	22	958	772	150	1092	882	298	328		284	340	
v/s Ratio Prot	0.00	c0.53		c0.06	c0.48			0.01			0.01	
v/s Ratio Perm			0.15			0.00	c0.17			0.01		
v/c Ratio	0.32	1.03	0.30	0.67	0.82	0.00	0.79	0.05		0.03	0.02	
Uniform Delay, d1	47.3	23.5	13.5	43.0	16.0	8.3	35.9	30.1		30.0	29.9	
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	8.2	35.9	1.0	11.3	7.0	0.0	12.9	0.1		0.0	0.0	
Delay (s)	55.5	59.4	14.5	54.3	22.9	8.3	48.8	30.1		30.0	30.0	
Level of Service	E	E	B	D	C	A	D	C		C	C	
Approach Delay (s)		47.8			26.1			45.2			30.0	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM Average Control Delay	39.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	96.7	Sum of lost time (s)	24.5
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

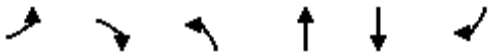


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	171	52	24	160	39	28	4	20	40	18	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.97			0.95			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	1863	1521	1758	1793			1715			1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.82			0.88	
Satd. Flow (perm)	1770	1863	1521	1758	1793			1444			1513	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	182	55	26	170	41	30	4	21	43	19	52
RTOR Reduction (vph)	0	0	37	0	10	0	0	15	0	0	28	0
Lane Group Flow (vph)	45	182	18	26	201	0	0	40	0	0	86	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.6	11.0	11.0	0.6	10.0			8.7			8.7	
Effective Green, g (s)	1.6	11.0	11.0	0.6	10.0			8.7			8.7	
Actuated g/C Ratio	0.05	0.33	0.33	0.02	0.30			0.26			0.26	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	86	619	505	32	542			380			398	
v/s Ratio Prot	c0.03	0.10		0.01	c0.11							
v/s Ratio Perm			0.01					0.03			c0.06	
v/c Ratio	0.52	0.29	0.04	0.81	0.37			0.10			0.22	
Uniform Delay, d1	15.4	8.2	7.5	16.2	9.1			9.2			9.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.6	0.1	0.0	81.6	0.2			0.0			0.1	
Delay (s)	18.0	8.3	7.5	97.8	9.2			9.3			9.6	
Level of Service	B	A	A	F	A			A			A	
Approach Delay (s)		9.7			18.9			9.3			9.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	12.8
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	142	89	100	360	2	400	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.87	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1533	1770	1863	1531	1863	1520
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1533	1770	1863	1531	1863	1520
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	151	95	106	383	2	426	131
RTOR Reduction (vph)	0	79	0	0	0	0	71
Lane Group Flow (vph)	151	16	106	383	2	426	60
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	8.2	8.2	5.6	26.5	0.5	22.2	22.2
Effective Green, g (s)	8.2	8.2	5.6	26.5	0.5	22.2	22.2
Actuated g/C Ratio	0.17	0.17	0.12	0.55	0.01	0.46	0.46
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	299	259	204	1018	16	853	696
v/s Ratio Prot	c0.09		c0.06	0.21	0.00	c0.23	
v/s Ratio Perm		0.01					0.04
v/c Ratio	0.51	0.06	0.52	0.38	0.12	0.50	0.09
Uniform Delay, d1	18.3	16.9	20.2	6.3	23.8	9.2	7.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.9	0.1	1.3	0.2	0.0
Delay (s)	18.8	17.0	21.1	6.4	25.1	9.4	7.4
Level of Service	B	B	C	A	C	A	A
Approach Delay (s)	18.1			9.6		9.0	
Approach LOS	B			A		A	

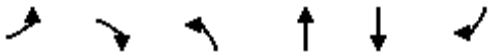
Intersection Summary			
HCM Average Control Delay	10.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	12.5
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	113	83	448	479	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	120	88	477	510	11
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1188	535	530			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1188	535	530			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	78	91			
cM capacity (veh/h)	186	535	1027			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	133	565	520
Volume Left	13	88	0
Volume Right	120	0	11
cSH	454	1027	1700
Volume to Capacity	0.29	0.09	0.31
Queue Length 95th (ft)	30	7	0
Control Delay (s)	16.2	2.3	0.0
Lane LOS	C	A	
Approach Delay (s)	16.2	2.3	0.0
Approach LOS	C		

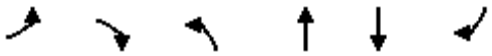
Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	93	67	530	590	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1	99	71	564	628	2
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				655		
pX, platoon unblocked	0.81					
vC, conflicting volume	1355	649	640			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1321	649	640			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	79	92			
cM capacity (veh/h)	127	461	935			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	100	635	630
Volume Left	1	71	0
Volume Right	99	0	2
cSH	448	935	1700
Volume to Capacity	0.22	0.08	0.37
Queue Length 95th (ft)	21	6	0
Control Delay (s)	15.3	2.0	0.0
Lane LOS	C	A	
Approach Delay (s)	15.3	2.0	0.0
Approach LOS	C		

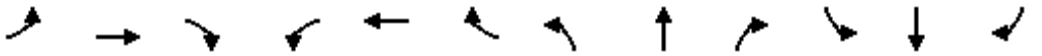
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	1	597	683	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	1	635	727	0
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				333		
pX, platoon unblocked	0.81					
vC, conflicting volume	1384	747	737			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1357	747	737			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	131	405	861			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	0	1	635	727
Volume Left	0	1	0	0
Volume Right	0	0	0	0
cSH	1700	861	1700	1700
Volume to Capacity	0.00	0.00	0.37	0.43
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	9.2	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	0.0	0.0		0.0
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

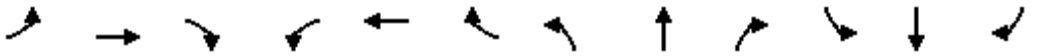


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	↰	↱
Volume (vph)	0	900	155	0	912	655	0	0	0	785	2	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.96				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1513				1681	1686	1553
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1513				1681	1686	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	957	165	0	970	697	0	0	0	835	2	202
RTOR Reduction (vph)	0	0	0	0	0	378	0	0	0	0	0	37
Lane Group Flow (vph)	0	957	165	0	970	319	0	0	0	417	420	165
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		29.7	64.9		29.7	29.7				24.2	24.2	24.2
Effective Green, g (s)		31.0	64.9		31.0	29.7				25.9	25.9	25.9
Actuated g/C Ratio		0.48	1.00		0.48	0.46				0.40	0.40	0.40
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2429	1538		1690	692				671	673	620
v/s Ratio Prot		0.19			c0.27					0.25	c0.25	
v/s Ratio Perm			0.11			0.21						0.11
v/c Ratio		0.39	0.11		0.57	0.46				0.62	0.62	0.27
Uniform Delay, d1		10.9	0.0		12.2	12.1				15.6	15.6	13.1
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.5	0.5				1.6	1.6	0.2
Delay (s)		11.0	0.1		12.7	12.6				17.1	17.2	13.3
Level of Service		B	A		B	B				B	B	B
Approach Delay (s)		9.4			12.6			0.0			16.4	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	64.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

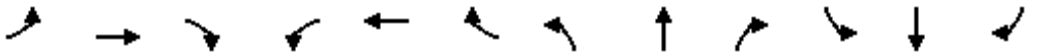
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1545	140	0	1404	578	163	0	800	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.95		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1501		5085	1538		1770	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1501		5085	1538		1770	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1644	149	0	1494	615	173	0	851	0	0	0
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	1644	101	0	1494	615	0	173	849	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		33.9	33.9		50.4	80.7		19.3	36.9			
Effective Green, g (s)		35.2	33.9		51.7	80.7		21.0	38.6			
Actuated g/C Ratio		0.44	0.42		0.64	1.00		0.26	0.48			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2218	631		3258	1538		461	1333			
v/s Ratio Prot		c0.32			0.29			0.10				
v/s Ratio Perm			0.07			0.40			c0.30			
v/c Ratio		0.74	0.16		0.46	0.40		0.38	0.64			
Uniform Delay, d1		19.0	14.5		7.4	0.0		24.5	15.8			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		1.4	0.1		0.1	0.8		0.4	0.9			
Delay (s)		20.3	14.7		7.5	0.8		24.8	16.7			
Level of Service		C	B		A	A		C	B			
Approach Delay (s)		19.9			5.5			18.1			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	889	421	118	867	150	809	342	54	135	354	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1524	1770	4946		3433	3539	1520	1770	3539	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1524	1770	4946		3433	3539	1520	1770	3539	1524
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	331	946	448	126	922	160	861	364	57	144	377	326
RTOR Reduction (vph)	0	0	188	0	13	0	0	0	48	0	0	152
Lane Group Flow (vph)	331	946	260	126	1069	0	861	364	9	144	377	174
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.1	37.8	37.8	13.3	32.0		38.5	19.5	19.5	40.8	21.4	21.4
Effective Green, g (s)	20.1	39.3	39.3	14.3	32.0		39.5	21.0	21.0	41.8	22.9	22.9
Actuated g/C Ratio	0.15	0.29	0.29	0.11	0.24		0.30	0.16	0.16	0.31	0.17	0.17
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	516	1041	448	189	1185		1015	556	239	554	607	261
v/s Ratio Prot	c0.10	c0.27		0.07	0.22		c0.25	0.10		0.08	0.11	
v/s Ratio Perm			0.17						0.01			c0.11
v/c Ratio	0.64	0.91	0.58	0.67	0.90		0.85	0.65	0.04	0.26	0.62	0.66
Uniform Delay, d1	53.4	45.4	40.1	57.4	49.3		44.2	52.9	47.7	34.3	51.3	51.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	11.9	2.8	6.7	9.6		6.5	2.3	0.0	0.1	1.6	5.3
Delay (s)	55.4	57.3	42.8	64.1	58.9		50.7	55.2	47.8	34.4	52.9	57.1
Level of Service	E	E	D	E	E		D	E	D	C	D	E
Approach Delay (s)		53.2			59.4			51.8			51.4	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	54.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	133.6	Sum of lost time (s)	13.4
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	77	930	71	198	681	176	330	345	89	257	302	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.95	1.00	1.00	0.97	1.00	1.00	0.96
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)	1770	3494		1770	3539	1504	1770	1863	1533	1770	3539	1521
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)	1770	3494		1770	3539	1504	1770	1863	1533	1770	3539	1521
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	82	989	76	211	724	187	351	367	95	273	321	132
RTOR Reduction (vph)	0	4	0	0	0	121	0	0	72	0	0	108
Lane Group Flow (vph)	82	1061	0	211	724	66	351	367	23	273	321	24
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.6	41.5		11.0	43.9	43.9	27.6	29.5	29.5	18.1	20.0	20.0
Effective Green, g (s)	8.6	41.5		11.0	43.9	43.9	27.6	29.5	29.5	18.1	20.0	20.0
Actuated g/C Ratio	0.07	0.33		0.09	0.35	0.35	0.22	0.24	0.24	0.15	0.16	0.16
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	123	1168		157	1252	532	394	443	364	258	570	245
v/s Ratio Prot	0.05	c0.30		c0.12	0.20		c0.20	c0.20		0.15	0.09	
v/s Ratio Perm						0.04			0.01			0.02
v/c Ratio	0.67	0.91		1.34	0.58	0.12	0.89	0.83	0.06	1.06	0.56	0.10
Uniform Delay, d1	56.4	39.5		56.5	32.6	27.1	46.8	44.9	36.6	53.0	48.0	44.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.1	10.3		191.1	0.7	0.1	21.0	12.1	0.1	72.2	1.3	0.2
Delay (s)	66.4	49.8		247.6	33.2	27.2	67.8	57.0	36.7	125.2	49.3	44.5
Level of Service	E	D		F	C	C	E	E	D	F	D	D
Approach Delay (s)		51.0			72.5			59.3			77.0	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM Average Control Delay	64.0	HCM Level of Service	E
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	124.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1041	76	141	1034	21	58
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1107	81	150	1100	22	62
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			423		
pX, platoon unblocked			0.73		0.77	0.73
vC, conflicting volume			1198		1977	574
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			539		1243	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			80		78	92
cM capacity (veh/h)			744		100	779

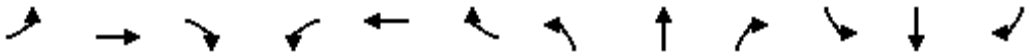
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1
Volume Total	554	554	81	150	550	550	84
Volume Left	0	0	0	150	0	0	22
Volume Right	0	0	81	0	0	0	62
cSH	1700	1700	1700	744	1700	1700	278
Volume to Capacity	0.33	0.33	0.05	0.20	0.32	0.32	0.30
Queue Length 95th (ft)	0	0	0	19	0	0	31
Control Delay (s)	0.0	0.0	0.0	11.1	0.0	0.0	23.4
Lane LOS				B			C
Approach Delay (s)	0.0			1.3			23.4
Approach LOS							C

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1087	12	9	1154	21	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
Frpb, ped/bikes	1.00	0.96	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1527	1770	3539	1770	1583
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	1863	1527	1770	3539	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1156	13	10	1228	22	4
RTOR Reduction (vph)	0	2	0	0	0	4
Lane Group Flow (vph)	1156	11	10	1228	22	0
Confl. Peds. (#/hr)		10				
Turn Type		Perm	Prot			Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	68.7	68.7	1.3	76.5	2.5	2.5
Effective Green, g (s)	68.7	68.7	1.3	76.5	2.5	2.5
Actuated g/C Ratio	0.76	0.76	0.01	0.85	0.03	0.03
Clearance Time (s)	6.5	6.5	6.5	6.5	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	2.0	2.0
Lane Grp Cap (vph)	1414	1159	25	2992	49	44
v/s Ratio Prot	c0.62		0.01	c0.35	c0.01	
v/s Ratio Perm		0.01				0.00
v/c Ratio	0.82	0.01	0.40	0.41	0.45	0.00
Uniform Delay, d1	6.9	2.6	44.2	1.7	43.3	42.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	0.0	10.2	0.1	2.4	0.0
Delay (s)	10.7	2.6	54.4	1.8	45.7	42.8
Level of Service	B	A	D	A	D	D
Approach Delay (s)	10.6			2.2	45.2	
Approach LOS	B			A	D	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



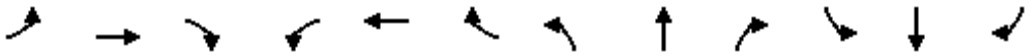
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	909	178	121	923	3	237	0	17	0	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95			0.96	
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	1.00	0.85	1.00	0.85			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1501	1770	1863	1503	1770	1499			1635	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.75	1.00			1.00	
Satd. Flow (perm)	1770	1863	1501	1770	1863	1503	1405	1499			1635	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	967	189	129	982	3	252	0	18	0	2	3
RTOR Reduction (vph)	0	0	64	0	0	0	0	14	0	0	2	0
Lane Group Flow (vph)	4	967	125	129	982	3	252	4	0	0	3	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.7	49.7	10.9	59.4	59.4	22.1	22.1			22.1	
Effective Green, g (s)	1.2	49.7	49.7	10.9	59.4	59.4	22.1	22.1			22.1	
Actuated g/C Ratio	0.01	0.49	0.49	0.11	0.59	0.59	0.22	0.22			0.22	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	21	919	741	192	1099	887	308	329			359	
v/s Ratio Prot	0.00	c0.52		c0.07	c0.53			0.00			0.00	
v/s Ratio Perm			0.08			0.00	c0.18					
v/c Ratio	0.19	1.05	0.17	0.67	0.89	0.00	0.82	0.01			0.01	
Uniform Delay, d1	49.3	25.5	14.1	43.2	17.9	8.5	37.4	30.8			30.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	4.4	44.4	0.5	8.9	11.2	0.0	15.4	0.0			0.0	
Delay (s)	53.7	69.9	14.6	52.1	29.1	8.5	52.8	30.8			30.7	
Level of Service	D	E	B	D	C	A	D	C			C	
Approach Delay (s)		60.8			31.7			51.3			30.7	
Approach LOS		E			C			D			C	

Intersection Summary			
HCM Average Control Delay	47.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	100.7	Sum of lost time (s)	24.5
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

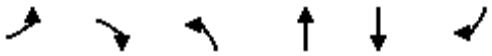


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	402	114	26	249	27	22	5	22	35	5	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00			1.00			0.99	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.99			0.94			0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1757	1863	1522	1761	1828			1706			1731	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.87			0.81	
Satd. Flow (perm)	1757	1863	1522	1761	1828			1516			1442	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	428	121	28	265	29	23	5	23	37	5	14
RTOR Reduction (vph)	0	0	74	0	4	0	0	17	0	0	11	0
Lane Group Flow (vph)	12	428	47	28	290	0	0	34	0	0	45	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	0.5	12.3	12.3	0.6	12.4			8.3			8.3	
Effective Green, g (s)	0.5	12.3	12.3	0.6	12.4			8.3			8.3	
Actuated g/C Ratio	0.01	0.36	0.36	0.02	0.36			0.24			0.24	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	26	674	551	31	667			370			352	
v/s Ratio Prot	0.01	c0.23		c0.02	0.16							
v/s Ratio Perm			0.03					0.02			c0.03	
v/c Ratio	0.46	0.64	0.09	0.90	0.44			0.09			0.13	
Uniform Delay, d1	16.6	9.0	7.1	16.7	8.2			9.9			10.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.7	1.4	0.0	119.0	0.2			0.0			0.1	
Delay (s)	21.3	10.4	7.2	135.7	8.3			10.0			10.1	
Level of Service	C	B	A	F	A			A			B	
Approach Delay (s)		10.0			19.4			10.0			10.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	34.0	Sum of lost time (s)	12.8
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	385	74	137	435	5	416	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.85	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1528	1770	1863	1504	1863	1512
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1528	1770	1863	1504	1863	1512
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	410	79	146	463	5	443	176
RTOR Reduction (vph)	0	54	0	0	0	0	114
Lane Group Flow (vph)	410	25	146	463	5	443	62
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	19.2	19.2	7.4	27.1	0.7	21.2	21.2
Effective Green, g (s)	19.2	19.2	7.4	27.1	0.7	21.2	21.2
Actuated g/C Ratio	0.32	0.32	0.12	0.45	0.01	0.35	0.35
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	564	487	217	837	17	655	532
v/s Ratio Prot	c0.23		c0.08	0.25	0.00	c0.24	
v/s Ratio Perm		0.02					0.04
v/c Ratio	0.73	0.05	0.67	0.55	0.29	0.68	0.12
Uniform Delay, d1	18.2	14.2	25.3	12.2	29.6	16.6	13.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.0	0.0	6.3	0.5	3.5	2.2	0.0
Delay (s)	22.2	14.3	31.6	12.6	33.0	18.8	13.3
Level of Service	C	B	C	B	C	B	B
Approach Delay (s)	20.9			17.2		17.4	
Approach LOS	C			B		B	

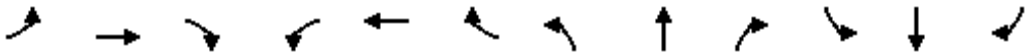
Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.3	Sum of lost time (s)	12.5
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	134	150	566	478	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	143	160	602	509	13
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1267		
pX, platoon unblocked	0.65					
vC, conflicting volume	1456	535	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1433	535	531			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	73	84			
cM capacity (veh/h)	80	535	1026			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	149	762	521
Volume Left	6	160	0
Volume Right	143	0	13
cSH	430	1026	1700
Volume to Capacity	0.35	0.16	0.31
Queue Length 95th (ft)	38	14	0
Control Delay (s)	17.7	3.7	0.0
Lane LOS	C	A	
Approach Delay (s)	17.7	3.7	0.0
Approach LOS	C		

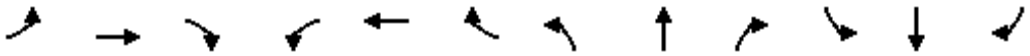
Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	4	91	208	4	14	98	699	105	45	563	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.87		1.00	0.88		1.00	0.98		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1626		1770	1642		1770	3470		1770	3535	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1626		1770	1642		1770	3470		1770	3535	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	3	4	97	221	4	15	104	744	112	48	599	4
RTOR Reduction (vph)	0	87	0	0	12	0	0	10	0	0	1	0
Lane Group Flow (vph)	0	17	0	221	7	0	104	846	0	48	602	0
Confl. Peds. (#/hr)							10					10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.2		14.7	14.7		6.9	26.5		2.6	22.2	
Effective Green, g (s)		7.2		14.7	14.7		6.9	26.5		2.6	22.2	
Actuated g/C Ratio		0.10		0.21	0.21		0.10	0.38		0.04	0.32	
Clearance Time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		170		377	350		177	1333		67	1137	
v/s Ratio Prot		c0.01		c0.12	0.00		c0.06	c0.24		0.03	0.17	
v/s Ratio Perm												
v/c Ratio		0.10		0.59	0.02		0.59	0.63		0.72	0.53	
Uniform Delay, d1		28.0		24.4	21.5		29.7	17.3		32.8	19.1	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3		2.3	0.0		4.9	1.0		30.4	0.4	
Delay (s)		28.2		26.7	21.5		34.6	18.3		63.2	19.6	
Level of Service		C		C	C		C	B		E	B	
Approach Delay (s)		28.2			26.3			20.1			22.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

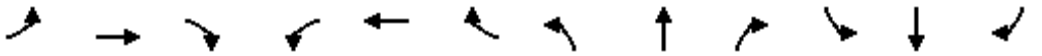
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	0	0	12	7	890	134	0	862	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	3	0	0	13	7	947	143	0	917	0
Pedestrians		10						10			10	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								333			322	
pX, platoon unblocked	0.92	0.92	0.86	0.92	0.92	0.88	0.86			0.88		
vC, conflicting volume	1438	2031	479	1505	1960	555	927			1089		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	737	1380	82	809	1302	231	601			836		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	99			100		
cM capacity (veh/h)	269	130	814	244	144	675	832			701		

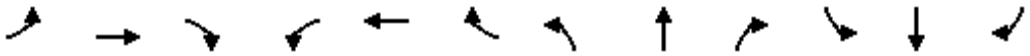
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	3	13	7	631	458	611	306
Volume Left	0	0	7	0	0	0	0
Volume Right	3	13	0	0	143	0	0
cSH	814	675	832	1700	1700	1700	1700
Volume to Capacity	0.00	0.02	0.01	0.37	0.27	0.36	0.18
Queue Length 95th (ft)	0	1	1	0	0	0	0
Control Delay (s)	9.4	10.4	9.4	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	9.4	10.4	0.1			0.0	
Approach LOS	A	B					

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	45.5%	ICU Level of Service		A
Analysis Period (min)	15			



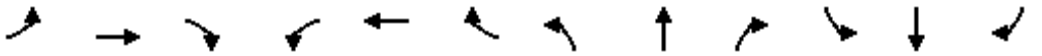
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	↰	↱
Volume (vph)	0	806	185	0	648	896	0	0	0	1077	5	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.95				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1509				1681	1686	1554
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1509				1681	1686	1554
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	857	197	0	689	953	0	0	0	1146	5	167
RTOR Reduction (vph)	0	0	0	0	0	570	0	0	0	0	0	78
Lane Group Flow (vph)	0	857	197	0	689	383	0	0	0	573	578	89
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		28.0	69.7		28.0	28.0				30.7	30.7	30.7
Effective Green, g (s)		29.3	69.7		29.3	28.0				32.4	32.4	32.4
Actuated g/C Ratio		0.42	1.00		0.42	0.40				0.46	0.46	0.46
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2138	1538		1488	606				781	784	722
v/s Ratio Prot		0.17			0.19					0.34	c0.34	
v/s Ratio Perm			0.13			c0.25						0.06
v/c Ratio		0.40	0.13		0.46	0.63				0.73	0.74	0.12
Uniform Delay, d1		14.1	0.0		14.5	16.7				15.1	15.2	10.6
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2		0.2	2.2				3.4	3.4	0.1
Delay (s)		14.2	0.2		14.8	18.9				18.5	18.6	10.6
Level of Service		B	A		B	B				B	B	B
Approach Delay (s)		11.6			17.1			0.0			17.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	9.3
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



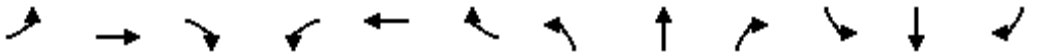
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱		↰	↱↱			
Volume (vph)	0	1624	259	0	1265	841	279	1	1086	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.94		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1492		5085	1538		1774	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1492		5085	1538		1774	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1728	276	0	1346	895	297	1	1155	0	0	0
RTOR Reduction (vph)	0	0	88	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	1728	188	0	1346	895	0	298	1154	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		39.0	39.0		67.5	98.8		20.3	49.9			
Effective Green, g (s)		40.3	39.0		68.8	98.8		22.0	51.6			
Actuated g/C Ratio		0.41	0.39		0.70	1.00		0.22	0.52			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2074	589		3541	1538		395	1456			
v/s Ratio Prot		c0.34			0.26			0.17				
v/s Ratio Perm			0.13			0.58			c0.41			
v/c Ratio		0.83	0.32		0.38	0.58		0.75	0.79			
Uniform Delay, d1		26.2	20.7		6.2	0.0		35.9	19.2			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		3.0	0.3		0.1	1.6		7.6	2.9			
Delay (s)		29.3	21.0		6.3	1.6		43.5	22.2			
Level of Service		C	C		A	A		D	C			
Approach Delay (s)		28.1			4.4			26.6			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	76.0%	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)	415	1235	455	53	1041	143	717	332	47	148	299	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1527	1770	4971		3433	3539	1519	1770	3539	1520
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1527	1770	4971		3433	3539	1519	1770	3539	1520
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	441	1314	484	56	1107	152	763	353	50	157	318	370
RTOR Reduction (vph)	0	0	144	0	10	0	0	0	42	0	0	260
Lane Group Flow (vph)	441	1314	340	56	1249	0	763	353	8	157	318	110
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	28.7	54.1	54.1	7.3	32.7		34.0	19.2	19.2	33.7	18.5	18.5
Effective Green, g (s)	29.7	55.6	55.6	8.3	32.7		35.0	20.7	20.7	34.7	20.0	20.0
Actuated g/C Ratio	0.22	0.41	0.41	0.06	0.24		0.26	0.15	0.15	0.25	0.15	0.15
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	747	1442	622	108	1191		880	537	230	450	519	223
v/s Ratio Prot	c0.13	c0.37		0.03	c0.25		c0.22	0.10		0.09	c0.09	
v/s Ratio Perm			0.22						0.00			0.07
v/c Ratio	0.59	0.91	0.55	0.52	1.05		0.87	0.66	0.03	0.35	0.61	0.49
Uniform Delay, d1	47.9	38.1	30.8	62.2	51.9		48.5	54.6	49.4	41.7	54.6	53.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	9.4	1.6	1.7	39.9		8.7	2.4	0.0	0.2	1.7	1.0
Delay (s)	48.8	47.5	32.4	63.9	91.8		57.2	57.0	49.4	41.8	56.3	54.6
Level of Service	D	D	C	E	F		E	E	D	D	E	D
Approach Delay (s)		44.5			90.6			56.8			52.9	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM Average Control Delay	59.2	HCM Level of Service	E
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	136.5	Sum of lost time (s)	14.9
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



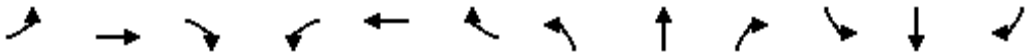
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	313	1053	64	187	728	287	256	431	94	349	263	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	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	0.97	1.00	1.00	0.97	1.00	1.00	0.96
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)	1770	3503		1770	5085	1536	1770	3539	1531	1770	3539	1522
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)	1770	3503		1770	5085	1536	1770	3539	1531	1770	3539	1522
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	333	1120	68	199	774	305	272	459	100	371	280	269
RTOR Reduction (vph)	0	3	0	0	0	207	0	0	80	0	0	216
Lane Group Flow (vph)	333	1185	0	199	774	98	272	459	20	371	280	53
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.1	40.2		11.1	37.2	37.2	22.0	22.7	22.7	18.1	18.8	18.8
Effective Green, g (s)	14.1	40.2		11.1	37.2	37.2	22.0	22.7	22.7	18.1	18.8	18.8
Actuated g/C Ratio	0.12	0.35		0.10	0.32	0.32	0.19	0.20	0.20	0.16	0.16	0.16
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	215	1213		169	1629	492	335	692	299	276	573	246
v/s Ratio Prot	c0.19	c0.34		0.11	0.15		0.15	c0.13		c0.21	0.08	
v/s Ratio Perm						0.06			0.01			0.03
v/c Ratio	1.55	0.98		1.18	0.48	0.20	0.81	0.66	0.07	1.34	0.49	0.21
Uniform Delay, d1	51.0	37.5		52.5	31.6	28.6	45.1	43.2	38.1	49.0	44.3	42.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	268.7	20.2		125.0	0.2	0.2	13.2	2.4	0.1	177.2	0.7	0.4
Delay (s)	319.7	57.7		177.5	31.8	28.8	58.3	45.6	38.1	226.2	44.9	42.7
Level of Service	F	E		F	C	C	E	D	D	F	D	D
Approach Delay (s)		115.1			53.8			48.8			117.4	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM Average Control Delay	86.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	116.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1334	55	99	1152	27	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1419	59	105	1226	29	49
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			422		
pX, platoon unblocked			0.76		0.76	0.76
vC, conflicting volume			1488		2088	522
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			556		1341	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		69	94
cM capacity (veh/h)			765		93	812

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	568	568	342	105	409	409	409	78
Volume Left	0	0	0	105	0	0	0	29
Volume Right	0	0	59	0	0	0	0	49
cSH	1700	1700	1700	765	1700	1700	1700	210
Volume to Capacity	0.33	0.33	0.20	0.14	0.24	0.24	0.24	0.37
Queue Length 95th (ft)	0	0	0	12	0	0	0	40
Control Delay (s)	0.0	0.0	0.0	10.5	0.0	0.0	0.0	31.9
Lane LOS				B				D
Approach Delay (s)	0.0			0.8				31.9
Approach LOS								D

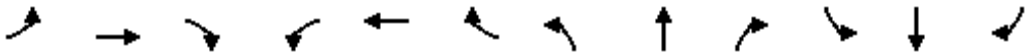
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1297	18	30	1087	84	47	4	8	74	4	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3530		1770	3501		1770	1669		1770	1592	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3530		1770	3501		1770	1669		1770	1592	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	69	1380	19	32	1156	89	50	4	9	79	4	124
RTOR Reduction (vph)	0	0	0	0	3	0	0	8	0	0	108	0
Lane Group Flow (vph)	69	1399	0	32	1242	0	50	5	0	79	20	0
Confl. Peds. (#/hr)			10									
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	7.0	58.5		3.9	55.4		12.3	12.3		14.8	14.8	
Effective Green, g (s)	7.0	58.5		3.9	55.4		12.3	12.3		14.8	14.8	
Actuated g/C Ratio	0.06	0.52		0.03	0.49		0.11	0.11		0.13	0.13	
Clearance Time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	110	1836		61	1724		194	182		233	209	
v/s Ratio Prot	c0.04	c0.40		0.02	0.35		c0.03	0.00		c0.04	0.01	
v/s Ratio Perm												
v/c Ratio	0.63	0.76		0.52	0.72		0.26	0.03		0.34	0.10	
Uniform Delay, d1	51.5	21.5		53.4	22.5		45.9	44.8		44.4	43.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.7	1.9		7.9	1.5		0.7	0.1		0.9	0.2	
Delay (s)	62.1	23.4		61.3	24.0		46.6	44.8		45.3	43.2	
Level of Service	E	C		E	C		D	D		D	D	
Approach Delay (s)		25.2			24.9			46.3			44.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	112.5	Sum of lost time (s)	23.0
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



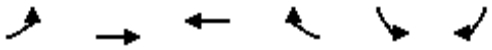
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1008	364	95	925	3	262	4	49	8	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95		1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.98	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1501	1770	1863	1503	1770	1527		1742	1585	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00		0.72	1.00	
Satd. Flow (perm)	1770	1863	1501	1770	1863	1503	1386	1527		1321	1585	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	1072	387	101	984	3	279	4	52	9	5	15
RTOR Reduction (vph)	0	0	119	0	0	0	0	39	0	0	11	0
Lane Group Flow (vph)	7	1072	268	101	984	3	279	17	0	9	9	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.1	49.1	8.3	56.2	56.2	24.5	24.5		24.5	24.5	
Effective Green, g (s)	1.2	49.1	49.1	8.3	56.2	56.2	24.5	24.5		24.5	24.5	
Actuated g/C Ratio	0.01	0.49	0.49	0.08	0.56	0.56	0.25	0.25		0.25	0.25	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	916	738	147	1048	846	340	374		324	389	
v/s Ratio Prot	0.00	c0.58		c0.06	c0.53			0.01			0.01	
v/s Ratio Perm			0.18			0.00	c0.20			0.01		
v/c Ratio	0.33	1.17	0.36	0.69	0.94	0.00	0.82	0.04		0.03	0.02	
Uniform Delay, d1	49.0	25.4	15.7	44.5	20.3	9.6	35.6	28.8		28.6	28.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	88.4	1.4	12.5	16.5	0.0	14.6	0.0		0.0	0.0	
Delay (s)	58.1	113.8	17.1	57.1	36.8	9.6	50.2	28.8		28.7	28.6	
Level of Service	E	F	B	E	D	A	D	C		C	C	
Approach Delay (s)		88.0			38.6			46.6			28.6	
Approach LOS		F			D			D			C	

Intersection Summary			
HCM Average Control Delay	64.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

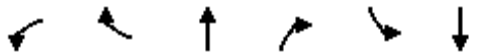
Channelized right turn lanes are not counted.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1389	1111	68	0	91
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1478	1182	72	0	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		396	535			
pX, platoon unblocked					0.74	
vC, conflicting volume	1254				1711	430
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1254				756	430
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	83
cM capacity (veh/h)	550				256	573

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	493	493	493	473	473	309	97
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	72	97
cSH	1700	1700	1700	1700	1700	1700	573
Volume to Capacity	0.29	0.29	0.29	0.28	0.28	0.18	0.17
Queue Length 95th (ft)	0	0	0	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	12.6
Lane LOS							B
Approach Delay (s)	0.0			0.0			12.6
Approach LOS							B

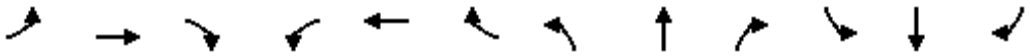
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	716	0	0	612
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	762	0	0	651
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			333			
pX, platoon unblocked	0.81	0.81			0.81	
vC, conflicting volume	1087	381			762	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	649	0			249	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	328	882			1069	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	508	254	0	326	326
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.30	0.15	0.00	0.19	0.19
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

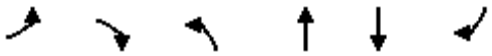


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	177	52	24	165	39	28	4	20	40	18	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.96	1.00	0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00			1.00			1.00	
Frt	1.00	1.00	0.85	1.00	0.97			0.95			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.97			0.98	
Satd. Flow (prot)	1770	1863	1521	1758	1795			1715			1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.82			0.88	
Satd. Flow (perm)	1770	1863	1521	1758	1795			1444			1513	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	188	55	26	176	41	30	4	21	43	19	52
RTOR Reduction (vph)	0	0	37	0	10	0	0	15	0	0	28	0
Lane Group Flow (vph)	45	188	18	26	207	0	0	40	0	0	86	0
Confl. Peds. (#/hr)	10		10	10		10	10					10
Confl. Bikes (#/hr)			10			10						
Turn Type	Prot		Perm	Prot			Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.6	11.0	11.0	0.6	10.0			8.7			8.7	
Effective Green, g (s)	1.6	11.0	11.0	0.6	10.0			8.7			8.7	
Actuated g/C Ratio	0.05	0.33	0.33	0.02	0.30			0.26			0.26	
Clearance Time (s)	3.5	5.3	5.3	3.5	5.3			4.0			4.0	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0			2.0			2.0	
Lane Grp Cap (vph)	86	619	505	32	542			380			398	
v/s Ratio Prot	c0.03	0.10		0.01	c0.12							
v/s Ratio Perm			0.01					0.03			c0.06	
v/c Ratio	0.52	0.30	0.04	0.81	0.38			0.10			0.22	
Uniform Delay, d1	15.4	8.2	7.5	16.2	9.1			9.2			9.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.6	0.1	0.0	81.6	0.2			0.0			0.1	
Delay (s)	18.0	8.3	7.5	97.8	9.3			9.3			9.6	
Level of Service	B	A	A	F	A			A			A	
Approach Delay (s)		9.7			18.7			9.3			9.6	
Approach LOS		A			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	33.1	Sum of lost time (s)	12.8
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Volume (vph)	142	95	105	376	2	417	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	0.86	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1532	1770	1863	1529	1863	1519
Flt Permitted	0.95	1.00	0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1532	1770	1863	1529	1863	1519
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	151	101	112	400	2	444	131
RTOR Reduction (vph)	0	81	0	0	0	0	75
Lane Group Flow (vph)	151	20	112	400	2	444	56
Confl. Peds. (#/hr)	10	10	10		10		10
Confl. Bikes (#/hr)							10
Turn Type		Perm	Prot		Prot		Perm
Protected Phases	4		5	2	1	6	
Permitted Phases		4					6
Actuated Green, G (s)	10.0	10.0	6.0	26.3	0.5	21.6	21.6
Effective Green, g (s)	10.0	10.0	6.0	26.3	0.5	21.6	21.6
Actuated g/C Ratio	0.20	0.20	0.12	0.52	0.01	0.43	0.43
Clearance Time (s)	4.0	4.0	3.5	5.8	3.5	5.0	5.0
Vehicle Extension (s)	2.0	2.0	1.0	2.0	1.0	2.0	2.0
Lane Grp Cap (vph)	353	306	212	978	15	803	655
v/s Ratio Prot	c0.09		c0.06	0.21	0.00	c0.24	
v/s Ratio Perm		0.01					0.04
v/c Ratio	0.43	0.07	0.53	0.41	0.13	0.55	0.09
Uniform Delay, d1	17.5	16.3	20.7	7.2	24.6	10.6	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	1.1	0.1	1.5	0.5	0.0
Delay (s)	17.9	16.3	21.8	7.3	26.1	11.1	8.4
Level of Service	B	B	C	A	C	B	A
Approach Delay (s)	17.2			10.5		10.6	
Approach LOS	B			B		B	

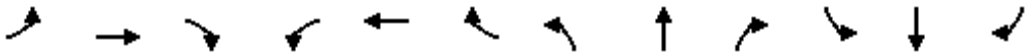
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	50.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	136	104	469	502	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	145	111	499	534	11
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1267		
pX, platoon unblocked	0.72					
vC, conflicting volume	1280	559	555			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1194	559	555			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	72	89			
cM capacity (veh/h)	130	518	1006			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	157	610	545
Volume Left	13	111	0
Volume Right	145	0	11
cSH	417	1006	1700
Volume to Capacity	0.38	0.11	0.32
Queue Length 95th (ft)	43	9	0
Control Delay (s)	18.8	2.8	0.0
Lane LOS	C	A	
Approach Delay (s)	18.8	2.8	0.0
Approach LOS	C		

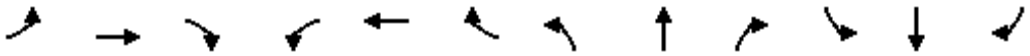
Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	6	93	265	5	16	67	556	141	64	572	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.87		1.00	0.88		1.00	0.97		1.00	1.00	
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1627		1770	1647		1770	3432		1770	3537	
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1627		1770	1647		1770	3432		1770	3537	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1	6	99	282	5	17	71	591	150	68	609	2
RTOR Reduction (vph)	0	88	0	0	13	0	0	20	0	0	0	0
Lane Group Flow (vph)	0	18	0	282	9	0	71	721	0	68	611	0
Confl. Peds. (#/hr)							10					10
Turn Type	Split			Split			Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.3		15.8	15.8		3.7	21.5		3.7	21.5	
Effective Green, g (s)		7.3		15.8	15.8		3.7	21.5		3.7	21.5	
Actuated g/C Ratio		0.11		0.24	0.24		0.06	0.32		0.06	0.32	
Clearance Time (s)		4.0		4.0	4.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		179		422	392		99	1113		99	1147	
v/s Ratio Prot		c0.01		c0.16	0.01		c0.04	c0.21		0.04	0.17	
v/s Ratio Perm												
v/c Ratio		0.10		0.67	0.02		0.72	0.65		0.69	0.53	
Uniform Delay, d1		26.5		22.9	19.3		30.8	19.2		30.7	18.3	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2		4.0	0.0		21.8	1.3		18.0	0.5	
Delay (s)		26.8		26.9	19.4		52.6	20.5		48.7	18.8	
Level of Service		C		C	B		D	C		D	B	
Approach Delay (s)		26.8			26.3			23.3			21.8	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	66.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

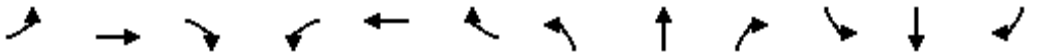
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	14	1	750	183	0	930	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	0	0	0	15	1	798	195	0	989	0
Pedestrians		10						10			10	
Lane Width (ft)		12.0						12.0			12.0	
Walking Speed (ft/s)		3.5						3.5			3.5	
Percent Blockage		1						1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								333			322	
pX, platoon unblocked	0.91	0.91	0.86	0.91	0.91	0.91	0.86			0.91		
vC, conflicting volume	1425	1994	515	1402	1897	506	999			993		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	809	1435	119	783	1328	252	681			788		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	98	100			100		
cM capacity (veh/h)	235	119	771	253	138	672	776			751		

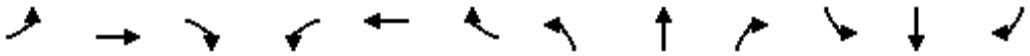
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	15	1	532	461	660	330
Volume Left	0	0	1	0	0	0	0
Volume Right	0	15	0	0	195	0	0
cSH	1700	672	776	1700	1700	1700	1700
Volume to Capacity	0.00	0.02	0.00	0.31	0.27	0.39	0.19
Queue Length 95th (ft)	0	2	0	0	0	0	0
Control Delay (s)	0.0	10.5	9.6	0.0	0.0	0.0	0.0
Lane LOS	A	B	A				
Approach Delay (s)	0.0	10.5	0.0			0.0	
Approach LOS	A	B					

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	36.6%	ICU Level of Service		A
Analysis Period (min)	15			



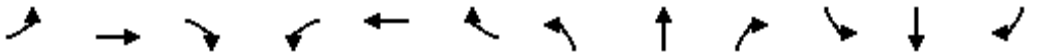
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑	↱				↰	↰↑	↱
Volume (vph)	0	928	155	0	938	839	0	0	0	871	2	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	5.3				4.0	4.0	4.0
Lane Util. Factor		0.91	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.97		1.00	0.95				1.00	1.00	0.98
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		5085	1538		3539	1509				1681	1686	1553
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		5085	1538		3539	1509				1681	1686	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	987	165	0	998	893	0	0	0	927	2	202
RTOR Reduction (vph)	0	0	0	0	0	480	0	0	0	0	0	34
Lane Group Flow (vph)	0	987	165	0	998	413	0	0	0	463	466	168
Confl. Peds. (#/hr)			10			10						10
Confl. Bikes (#/hr)			10			10						
Turn Type			Free			Perm				Split		Perm
Protected Phases		6			2					8	8	
Permitted Phases			Free			2						8
Actuated Green, G (s)		33.9	73.3		33.9	33.9				28.4	28.4	28.4
Effective Green, g (s)		35.2	73.3		35.2	33.9				30.1	30.1	30.1
Actuated g/C Ratio		0.48	1.00		0.48	0.46				0.41	0.41	0.41
Clearance Time (s)		5.3			5.3	5.3				5.7	5.7	5.7
Vehicle Extension (s)		3.0			3.0	3.0				2.5	2.5	2.5
Lane Grp Cap (vph)		2442	1538		1699	698				690	692	638
v/s Ratio Prot		0.19			c0.28					0.28	c0.28	
v/s Ratio Perm			0.11			0.27						0.11
v/c Ratio		0.40	0.11		0.59	0.59				0.67	0.67	0.26
Uniform Delay, d1		12.3	0.0		13.8	14.6				17.6	17.6	14.3
Progression Factor		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1		0.5	1.4				2.3	2.4	0.2
Delay (s)		12.4	0.1		14.3	15.9				19.9	20.0	14.4
Level of Service		B	A		B	B				B	B	B
Approach Delay (s)		10.6			15.1			0.0			18.9	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



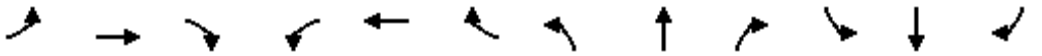
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑	↱		↰	↱↱			
Volume (vph)	0	1659	140	0	1614	657	163	0	1000	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.3		4.0	4.0		4.0	4.0			
Lane Util. Factor		0.91	1.00		0.91	1.00		1.00	0.88			
Frpb, ped/bikes		1.00	0.94		1.00	0.97		1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00		1.00	1.00			
Frt		1.00	0.85		1.00	0.85		1.00	0.85			
Flt Protected		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (prot)		5085	1494		5085	1538		1770	2787			
Flt Permitted		1.00	1.00		1.00	1.00		0.95	1.00			
Satd. Flow (perm)		5085	1494		5085	1538		1770	2787			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1765	149	0	1717	699	173	0	1064	0	0	0
RTOR Reduction (vph)	0	0	46	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	0	1765	103	0	1717	699	0	173	1063	0	0	0
Confl. Peds. (#/hr)			10			10						
Confl. Bikes (#/hr)			10			10						
Turn Type			Perm			Free	Split		custom			
Protected Phases		6			2		4	4				
Permitted Phases			6			Free			4 5			
Actuated Green, G (s)		38.4	38.4		63.6	94.8		20.2	46.5			
Effective Green, g (s)		39.7	38.4		64.9	94.8		21.9	48.2			
Actuated g/C Ratio		0.42	0.41		0.68	1.00		0.23	0.51			
Clearance Time (s)		5.3	5.3		5.3			5.7				
Vehicle Extension (s)		3.0	3.0		3.0			2.5				
Lane Grp Cap (vph)		2129	605		3481	1538		409	1417			
v/s Ratio Prot		c0.35			0.34			0.10				
v/s Ratio Perm			0.07			0.45			c0.38			
v/c Ratio		0.83	0.17		0.49	0.45		0.42	0.75			
Uniform Delay, d1		24.5	18.0		7.1	0.0		31.1	18.5			
Progression Factor		1.00	1.00		1.00	1.00		1.00	1.00			
Incremental Delay, d2		2.8	0.1		0.1	1.0		0.5	2.2			
Delay (s)		27.3	18.2		7.2	1.0		31.6	20.7			
Level of Service		C	B		A	A		C	C			
Approach Delay (s)		26.6			5.4			22.2			0.0	
Approach LOS		C			A			C			A	

Intersection Summary			
HCM Average Control Delay	16.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	94.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	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)	311	1203	421	118	1156	150	809	342	54	135	354	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	4.4
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
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	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1524	1770	4977		3433	3539	1520	1770	3539	1524
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1524	1770	4977		3433	3539	1520	1770	3539	1524
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	331	1280	448	126	1230	160	861	364	57	144	377	326
RTOR Reduction (vph)	0	0	138	0	9	0	0	0	48	0	0	152
Lane Group Flow (vph)	331	1280	310	126	1381	0	861	364	9	144	377	174
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4						2			6
Actuated Green, G (s)	19.1	37.8	37.8	13.3	32.0		38.5	19.5	19.5	40.8	21.4	21.4
Effective Green, g (s)	20.1	39.3	39.3	14.3	32.0		39.5	21.0	21.0	41.8	22.9	22.9
Actuated g/C Ratio	0.15	0.29	0.29	0.11	0.24		0.30	0.16	0.16	0.31	0.17	0.17
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.9
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	2.3
Lane Grp Cap (vph)	516	1041	448	189	1192		1015	556	239	554	607	261
v/s Ratio Prot	c0.10	c0.36		0.07	0.28		c0.25	0.10		0.08	0.11	
v/s Ratio Perm			0.20						0.01			c0.11
v/c Ratio	0.64	1.23	0.69	0.67	1.16		0.85	0.65	0.04	0.26	0.62	0.66
Uniform Delay, d1	53.4	47.1	41.8	57.4	50.8		44.2	52.9	47.7	34.3	51.3	51.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	111.9	5.6	6.7	81.0		6.5	2.3	0.0	0.1	1.6	5.3
Delay (s)	55.4	159.0	47.3	64.1	131.8		50.7	55.2	47.8	34.4	52.9	57.1
Level of Service	E	F	D	E	F		D	E	D	C	D	E
Approach Delay (s)		118.1			126.2			51.8			51.4	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM Average Control Delay	95.4	HCM Level of Service	F
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	133.6	Sum of lost time (s)	13.4
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



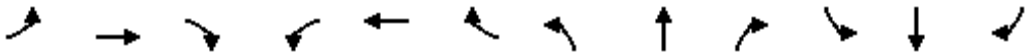
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	363	958	71	229	835	207	330	364	99	373	298	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	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	0.97	1.00	1.00	0.97	1.00	1.00	0.96
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)	1770	3495		1770	5085	1535	1770	3539	1532	1770	3539	1519
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)	1770	3495		1770	5085	1535	1770	3539	1532	1770	3539	1519
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	386	1019	76	244	888	220	351	387	105	397	317	276
RTOR Reduction (vph)	0	4	0	0	0	152	0	0	82	0	0	191
Lane Group Flow (vph)	386	1091	0	244	888	68	351	387	23	397	317	85
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.1	40.3		11.1	37.3	37.3	27.3	26.6	26.6	18.1	17.4	17.4
Effective Green, g (s)	14.1	40.3		11.1	37.3	37.3	27.3	26.6	26.6	18.1	17.4	17.4
Actuated g/C Ratio	0.12	0.34		0.09	0.31	0.31	0.23	0.22	0.22	0.15	0.14	0.14
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	208	1173		164	1579	477	402	784	339	267	513	220
v/s Ratio Prot	c0.22	c0.31		0.14	0.17		c0.20	0.11		c0.22	c0.09	
v/s Ratio Perm						0.04			0.02			0.06
v/c Ratio	1.86	0.93		1.49	0.56	0.14	0.87	0.49	0.07	1.49	0.62	0.39
Uniform Delay, d1	53.0	38.5		54.5	34.6	29.9	44.7	40.9	37.0	51.0	48.2	46.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	403.0	12.9		249.0	0.5	0.1	18.0	0.5	0.1	238.1	2.2	1.1
Delay (s)	456.0	51.4		303.5	35.0	30.0	62.7	41.4	37.0	289.1	50.4	47.7
Level of Service	F	D		F	D	C	E	D	D	F	D	D
Approach Delay (s)		156.9			82.7			49.7			145.4	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM Average Control Delay	113.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	120.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1195	76	141	1233	21	58
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1271	81	150	1312	22	62
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	3.5			3.5	3.5	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	509			422		
pX, platoon unblocked						
vC, conflicting volume			1362		2069	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1362		2069	484
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			70		30	88
cM capacity (veh/h)			496		32	519

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1
Volume Total	509	509	335	150	437	437	437	84
Volume Left	0	0	0	150	0	0	0	22
Volume Right	0	0	81	0	0	0	0	62
cSH	1700	1700	1700	496	1700	1700	1700	103
Volume to Capacity	0.30	0.30	0.20	0.30	0.26	0.26	0.26	0.82
Queue Length 95th (ft)	0	0	0	32	0	0	0	114
Control Delay (s)	0.0	0.0	0.0	15.4	0.0	0.0	0.0	119.4
Lane LOS				C				F
Approach Delay (s)	0.0			1.6				119.4
Approach LOS								F

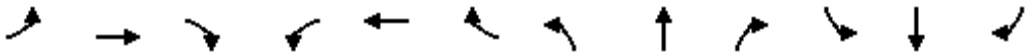
Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	1153	12	9	1204	121	21	6	4	92	5	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.99		1.00	0.94		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3532		1770	3491		1770	1751		1770	1592	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3532		1770	3491		1770	1751		1770	1592	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	94	1227	13	10	1281	129	22	6	4	98	5	159
RTOR Reduction (vph)	0	0	0	0	4	0	0	4	0	0	138	0
Lane Group Flow (vph)	94	1240	0	10	1406	0	22	6	0	98	26	0
Confl. Peds. (#/hr)			10									
Turn Type	Prot			Prot			Split			Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	10.2	67.3		1.0	58.1		10.2	10.2		15.3	15.3	
Effective Green, g (s)	10.2	67.3		1.0	58.1		10.2	10.2		15.3	15.3	
Actuated g/C Ratio	0.09	0.58		0.01	0.50		0.09	0.09		0.13	0.13	
Clearance Time (s)	6.5	6.5		6.5	6.5		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	155	2035		15	1737		155	153		232	209	
v/s Ratio Prot	c0.05	c0.35		0.01	c0.40		c0.01	0.00		c0.06	0.02	
v/s Ratio Perm												
v/c Ratio	0.61	0.61		0.67	0.81		0.14	0.04		0.42	0.12	
Uniform Delay, d1	51.4	16.2		57.7	24.7		49.3	48.8		46.7	44.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	0.5		75.9	2.9		0.4	0.1		1.2	0.3	
Delay (s)	57.9	16.7		133.6	27.6		49.7	48.9		47.9	45.1	
Level of Service	E	B		F	C		D	D		D	D	
Approach Delay (s)		19.6			28.3			49.4			46.2	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM Average Control Delay	26.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	116.8	Sum of lost time (s)	29.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



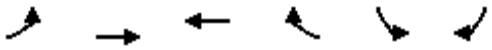
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	1014	231	121	1037	3	294	0	17	0	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95			0.97	
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	1.00	0.85	1.00	0.85			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1770	1863	1498	1770	1863	1500	1770	1502			1641	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.75	1.00			1.00	
Satd. Flow (perm)	1770	1863	1498	1770	1863	1500	1405	1502			1641	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	1079	246	129	1103	3	313	0	18	0	2	3
RTOR Reduction (vph)	0	0	79	0	0	0	0	13	0	0	2	0
Lane Group Flow (vph)	4	1079	167	129	1103	3	313	5	0	0	3	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.8	49.8	11.0	59.6	59.6	27.4	27.4			27.4	
Effective Green, g (s)	1.2	49.8	49.8	11.0	59.6	59.6	27.4	27.4			27.4	
Actuated g/C Ratio	0.01	0.47	0.47	0.10	0.56	0.56	0.26	0.26			0.26	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	20	874	702	183	1046	842	362	388			423	
v/s Ratio Prot	0.00	c0.58		c0.07	c0.59			0.00			0.00	
v/s Ratio Perm			0.11			0.00	c0.22					
v/c Ratio	0.20	1.23	0.24	0.70	1.05	0.00	0.86	0.01			0.01	
Uniform Delay, d1	52.0	28.2	16.9	46.0	23.3	10.2	37.6	29.3			29.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	4.9	115.5	0.8	11.7	43.4	0.0	18.8	0.0			0.0	
Delay (s)	56.9	143.7	17.7	57.7	66.7	10.2	56.5	29.3			29.3	
Level of Service	E	F	B	E	E	B	E	C			C	
Approach Delay (s)		120.1			65.6			55.0			29.3	
Approach LOS		F			E			D			C	

Intersection Summary			
HCM Average Control Delay	89.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	24.5
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1271	1155	99	0	116
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1352	1229	105	0	123
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		396	535			
pX, platoon unblocked						
vC, conflicting volume	1334				1732	462
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1334				1732	462
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	77
cM capacity (veh/h)	513				79	546

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	451	451	451	491	491	351	123
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	105	123
cSH	1700	1700	1700	1700	1700	1700	546
Volume to Capacity	0.27	0.27	0.27	0.29	0.29	0.21	0.23
Queue Length 95th (ft)	0	0	0	0	0	0	22
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.5
Lane LOS							B
Approach Delay (s)	0.0			0.0			13.5
Approach LOS							B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

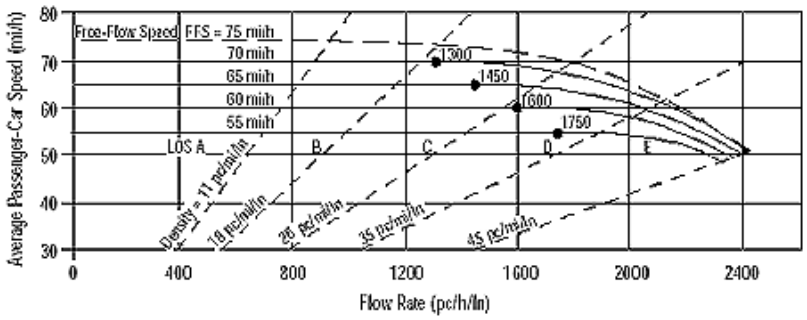
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	573	0	0	638
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	610	0	0	679
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			333			
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	949	305			610	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566	0			163	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	383	914			1191	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	406	203	0	339	339
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.24	0.12	0.00	0.20	0.20
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0		0.0		
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C:
FREEWAY MAINLINE LEVEL OF SERVICE CALCULATIONS

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 NB***
From/To	***Boronda to Russell***
Jurisdiction	***Salinas***
Analysis Year	***2010***

Project Description Existing Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***3737***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2105***	pc/h/ln
S	***57.8***	mi/h
D = v_p / S	***36.4***	pc/mi/ln
LOS	***E***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

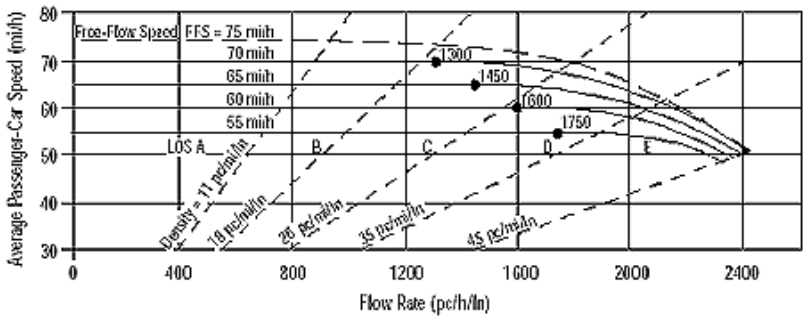
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 NB***
From/To	***Laurel to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***2010***

Project Description Existing Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***3855***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2171***	pc/h/ln
S	***56.2***	mi/h
D = v_p / S	***38.6***	pc/mi/ln
LOS	***E***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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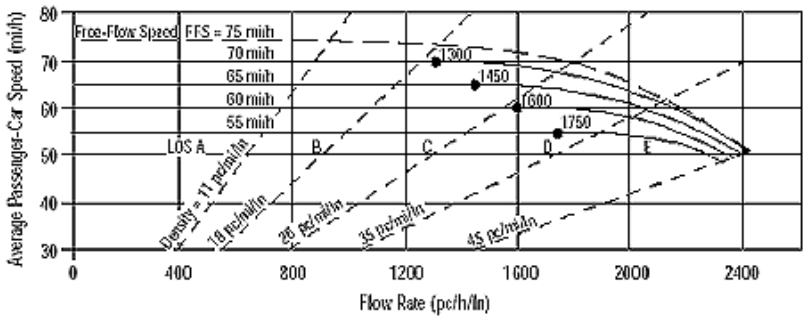
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Boronda to Laurel***
Jurisdiction	***Salinas***
Analysis Year	***2010***

Project Description Existing Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4072***	veh/h	Peak-Hour Factor, PHF	***0.96***
AADT		veh/day	%Trucks and Buses, P_T	***7***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2195***	pc/h/ln
S	***55.6***	mi/h
D = v_p / S	***39.5***	pc/mi/ln
LOS	***E***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

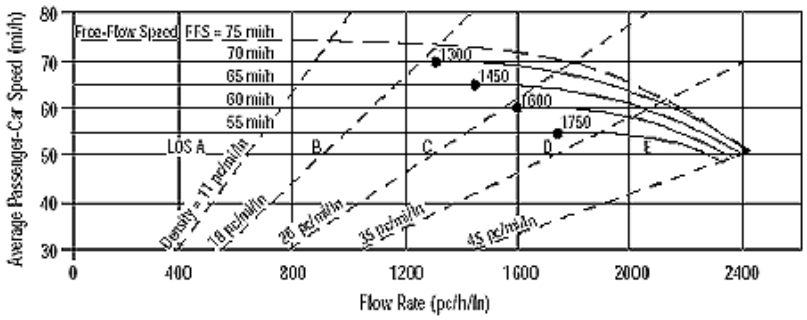
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Russell to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***2010***

Project Description Existing Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4359***	veh/h	Peak-Hour Factor, PHF	***0.96***
AADT		veh/day	%Trucks and Buses, P_T	***7***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2350***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

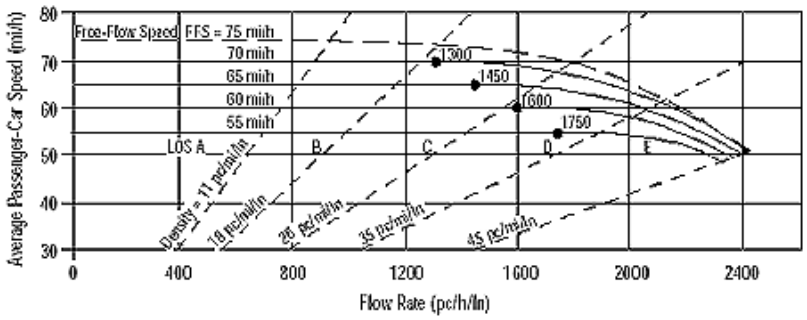
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	***KC***	Highway/Direction of Travel	***US 101 NB***
Agency or Company	***Fehr & Peers***	From/To	***Boronda to Russell***
Date Performed	***July 2010***	Jurisdiction	***Salinas***
Analysis Time Period	***PM Peak Hour***	Analysis Year	***2010***

Project Description Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***3800***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2140***	pc/h/ln
S	***57.0***	mi/h
D = v_p / S	***37.6***	pc/mi/ln
LOS	***E***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

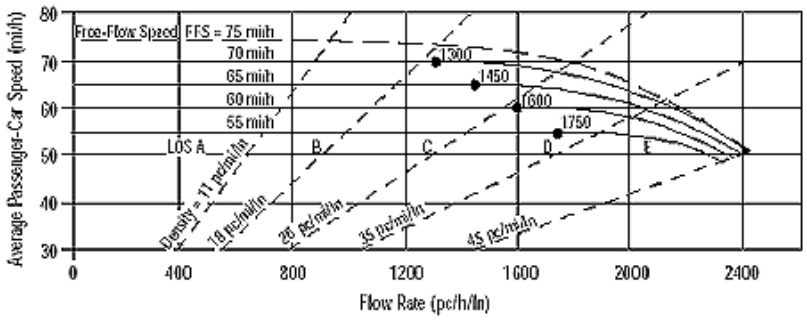
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information		***Site Information***	
Analyst	***KC***	Highway/Direction of Travel	***US 101 NB***
Agency or Company	***Fehr & Peers***	From/To	***Laurel to Boronda***
Date Performed	***July 2010***	Jurisdiction	***Salinas***
Analysis Time Period	***PM Peak Hour***	Analysis Year	***2010***

Project Description Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***3997***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

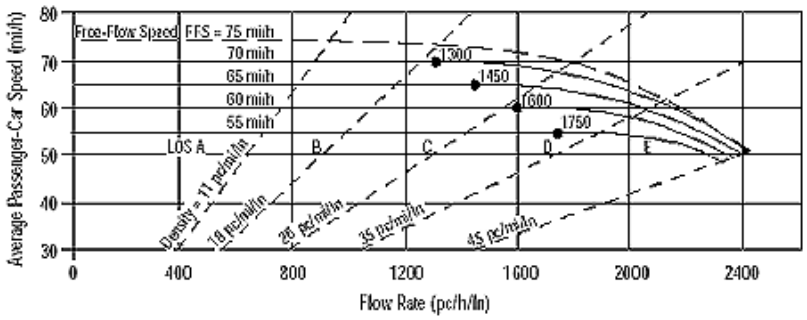
f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs			**Calc Speed Adj and FFS**		
Lane Width	***12.0***	ft	f_{LW}	***0.0***	mi/h
Rt-Shoulder Lat. Clearance	***6.0***	ft	f_{LC}	***0.0***	mi/h
Interchange Density	***1.12***	I/mi	f_{ID}	***3.1***	mi/h
Number of Lanes, N	***2***		f_N	***4.5***	mi/h
FFS (measured)		mi/h	FFS	***62.4***	mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h			

LOS and Performance Measures			**Design (N)**	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2251***	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	***54.0***	mi/h	S	mi/h
D = v_p / S	***41.7***	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	***E***		Required Number of Lanes, N	

Glossary		**Factor Location**	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
V - Hourly volume	D - Density	E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 23-12	f_N - Exhibit 23-6
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7
DDHV - Directional design hour volume			

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Boronda to Laurel***
Jurisdiction	***Salinas***
Analysis Year	***2010***

Project Description Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4219***	veh/h	Peak-Hour Factor, PHF	***0.96***
AADT		veh/day	%Trucks and Buses, P_T	***7***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2274***	pc/h/ln
S	***53.3***	mi/h
D = v_p / S	***42.6***	pc/mi/ln
LOS	***E***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

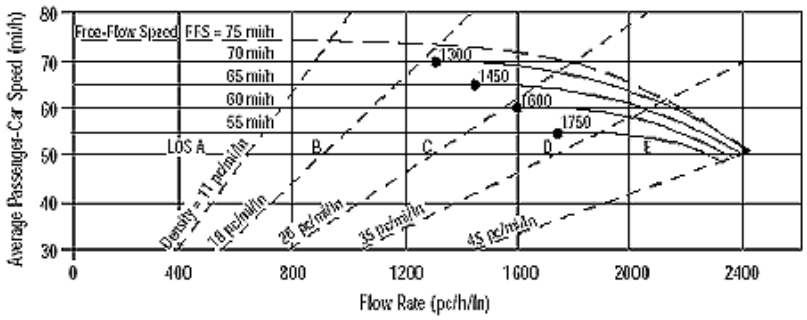
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Russell to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***2010***

Project Description Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4420***	veh/h	Peak-Hour Factor, PHF	***0.96***	
AADT		veh/day	%Trucks and Buses, P_T	***7***	
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***	
Peak-Hr Direction Prop, D			General Terrain:	***Level***	
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***	
Driver type adjustment	***1.00***		Up/Down %		

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2383***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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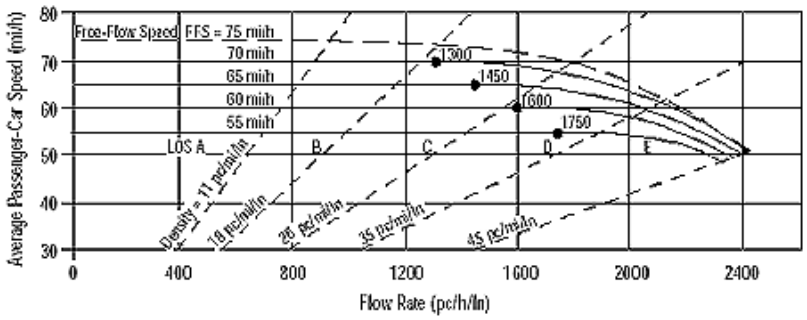
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 NB***
From/To	***Boronda to Russell***
Jurisdiction	***Salinas***
Analysis Year	

Project Description Cumulative Without Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4904***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2762***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

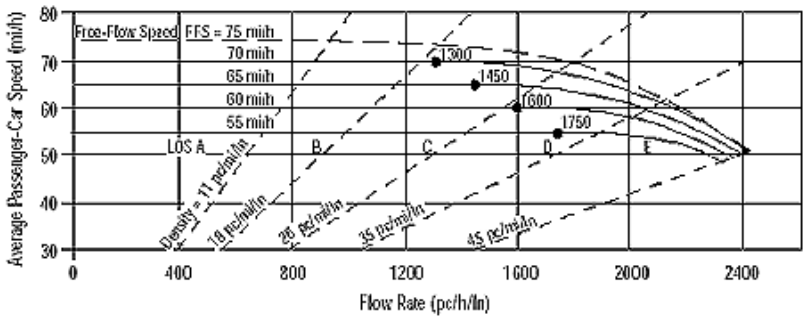
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 NB***
From/To	***Laurel to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description Cumulative Without Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***5090***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2867***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

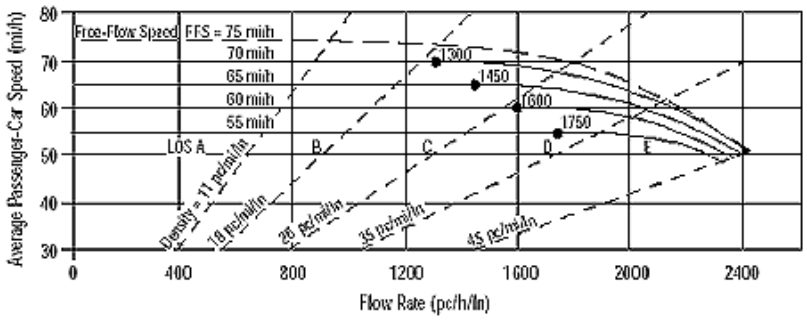
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Boronda to Laurel***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description Cumulative Without Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4863***	veh/h	Peak-Hour Factor, PHF	***0.96***	
AADT		veh/day	%Trucks and Buses, P_T	***7***	
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***	
Peak-Hr Direction Prop, D			General Terrain:	***Level***	
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***	
Driver type adjustment	***1.00***		Up/Down %		

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	l/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2621***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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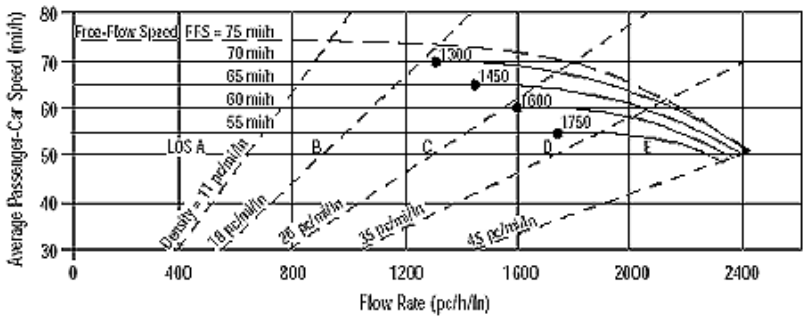
BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Russell to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description Cumulative Without Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***5088***	veh/h	Peak-Hour Factor, PHF	***0.96***
AADT		veh/day	%Trucks and Buses, P_T	***7***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2743***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

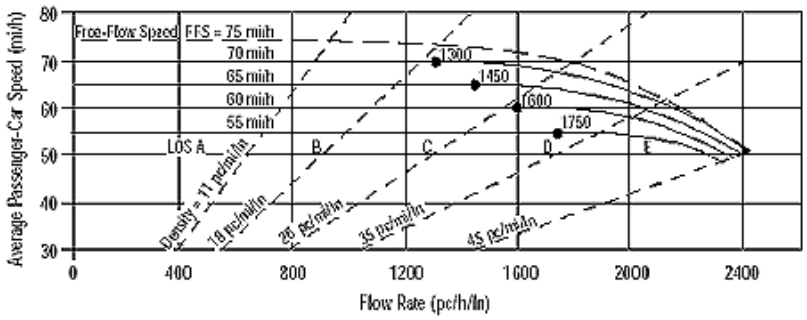
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 NB***
From/To	***Boronda to Russell***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description Cumulative With Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***4967***	veh/h	Peak-Hour Factor, PHF	***0.91***	
AADT		veh/day	%Trucks and Buses, P_T	***5***	
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***	
Peak-Hr Direction Prop, D			General Terrain:	***Level***	
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***	
Driver type adjustment	***1.00***		Up/Down %		

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2797***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

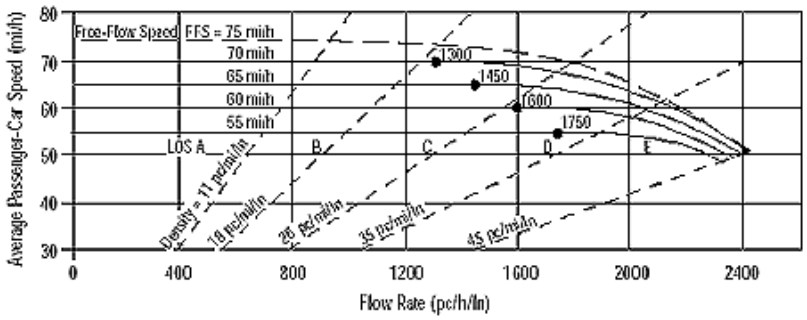
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 NB***
From/To	***Laurel to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description Cumulative With Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***5232***	veh/h	Peak-Hour Factor, PHF	***0.91***
AADT		veh/day	%Trucks and Buses, P_T	***5***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.976***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	l/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2947***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

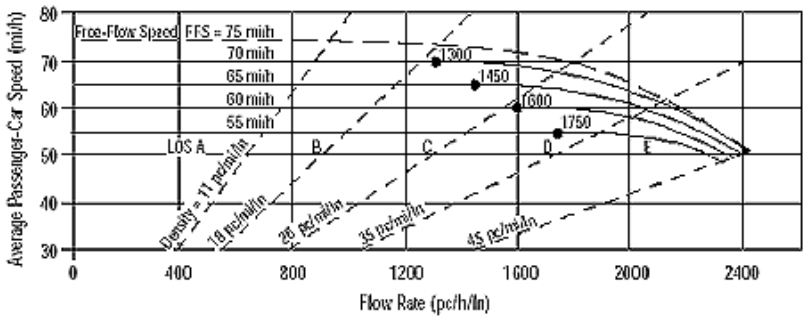
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Boronda to Laurel***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description Cumulative With Project Conditions

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***5010***	veh/h	Peak-Hour Factor, PHF	***0.96***
AADT		veh/day	%Trucks and Buses, P_T	***7***
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***
Peak-Hr Direction Prop, D			General Terrain:	***Level***
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***
Driver type adjustment	***1.00***		Up/Down %	

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2701***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

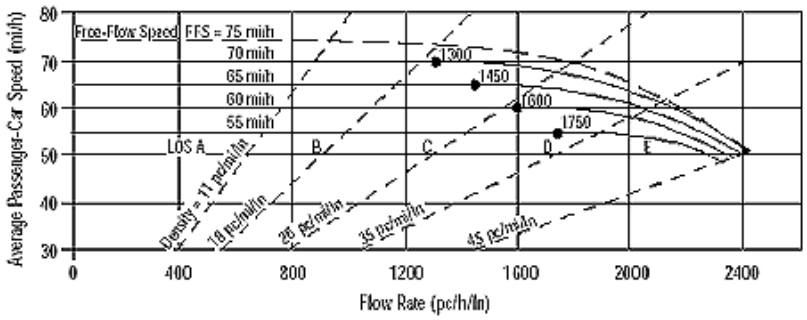
Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input	Output
Operational (LOS)	FFS, N, v_p	LOS, S, D
Design (N)	FFS, LOS, v_p	N, S, D
Design (v_p)	FFS, LOS, N	v_p, S, D
Planning (LOS)	FFS, N, AADT	LOS, S, D
Planning (N)	FFS, LOS, AADT	N, S, D
Planning (v_p)	FFS, LOS, N	v_p, S, D

General Information

Analyst	***KC***
Agency or Company	***Fehr & Peers***
Date Performed	***July 2010***
Analysis Time Period	***PM Peak Hour***

Site Information

Highway/Direction of Travel	***US 101 SB***
From/To	***Russell to Boronda***
Jurisdiction	***Salinas***
Analysis Year	***Cumulative Scenario***

Project Description

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	***5149***	veh/h	Peak-Hour Factor, PHF	***0.96***	
AADT		veh/day	%Trucks and Buses, P_T	***7***	
Peak-Hr Prop. of AADT, K			%RVs, P_R	***0***	
Peak-Hr Direction Prop, D			General Terrain:	***Level***	
DDHV = AADT x K x D		veh/h	Grade % Length	***mi***	
Driver type adjustment	***1.00***		Up/Down %		

Calculate Flow Adjustments

f_p	***1.00***	E_R	***1.2***
E_T	***1.5***	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	***0.966***

Speed Inputs

Lane Width	***12.0***	ft
Rt-Shoulder Lat. Clearance	***6.0***	ft
Interchange Density	***1.12***	I/mi
Number of Lanes, N	***2***	
FFS (measured)		mi/h
Base free-flow Speed, BFFS	***70.0***	mi/h

Calc Speed Adj and FFS

f_{LW}	***0.0***	mi/h
f_{LC}	***0.0***	mi/h
f_{ID}	***3.1***	mi/h
f_N	***4.5***	mi/h
FFS	***62.4***	mi/h

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	***2776***	pc/h/ln
S		mi/h
D = v_p / S		pc/mi/ln
LOS	***F***	

Design (N)

Design (N)

Design LOS	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h
S	mi/h
D = v_p / S	pc/mi/ln
Required Number of Lanes, N	

Glossary

N - Number of lanes	S - Speed
V - Hourly volume	D - Density
v_p - Flow rate	FFS - Free-flow speed
LOS - Level of service	BFFS - Base free-flow speed
DDHV - Directional design hour volume	

Factor Location

E_R - Exhibits23-8, 23-10	f_{LW} - Exhibit 23-4
E_T - Exhibits 23-8, 23-10, 23-11	f_{LC} - Exhibit 23-5
f_p - Page 23-12	f_N - Exhibit 23-6
LOS, S, FFS, v_p - Exhibits 23-2, 23-3	f_{ID} - Exhibit 23-7

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APPENDIX D:
PEAK-HOUR SIGNAL WARRANTS

Warrant 3B: Peak Hour Volume

The peak hour volume warrant is satisfied when the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour of the higher volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) of an average day falls above the curve in Figure 4-5 for the existing combination of approach lanes.

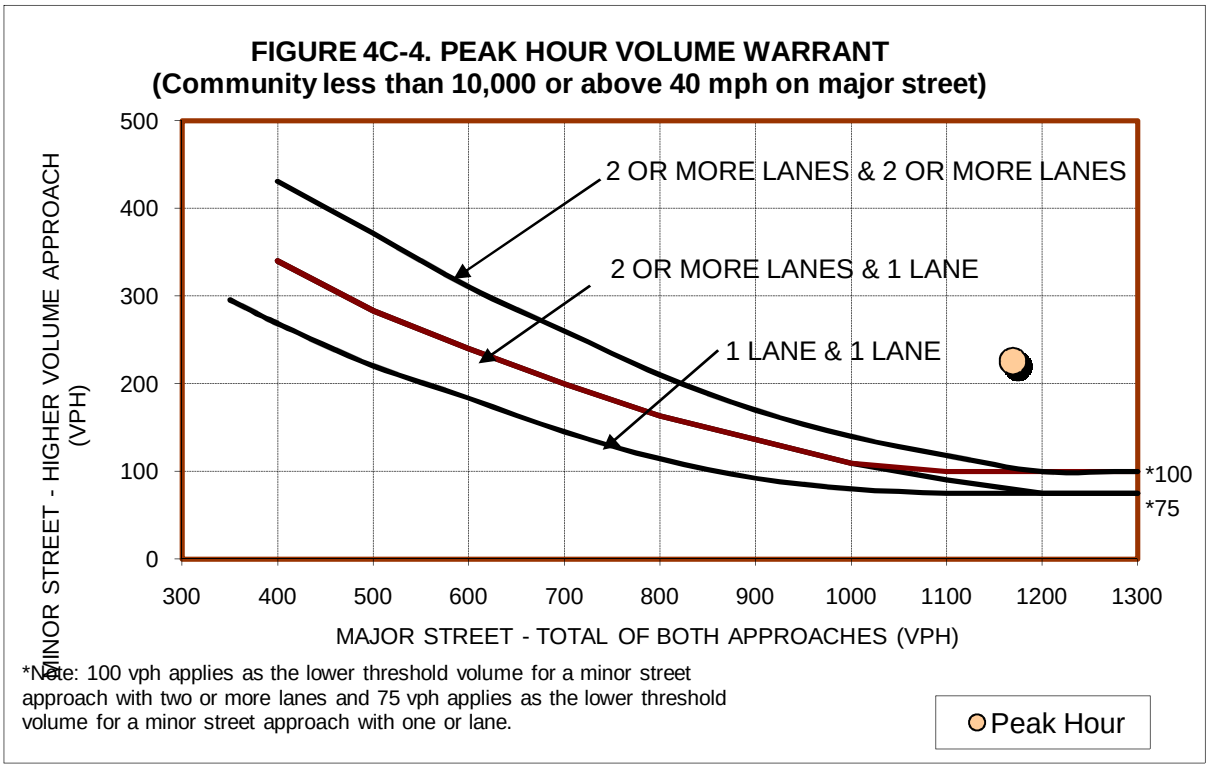
When the 85-percentile speed of the major street traffic exceeds 40 mile per hour or when the intersection lies within a built-up area of an isolated community having a population less than 10,000, the peak hour volume requirement is satisfied when the plotted point referred to above falls above the curve in Figure 4-6 for the existing combination of approach lanes.

Analysis

	No of lanes
Major Street	2
Minor Street	1

Peak Hour

Time	Vehicles Per Hour	
	Major Street (Sum of both approaches)	Minor street (High volume approach)
5:00 PM	1,169	226



Warrant	***Met***

Warrant 3B: Peak Hour Volume

The peak hour volume warrant is satisfied when the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour of the higher volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) of an average day falls above the curve in Figure 4-5 for the existing combination of approach lanes.

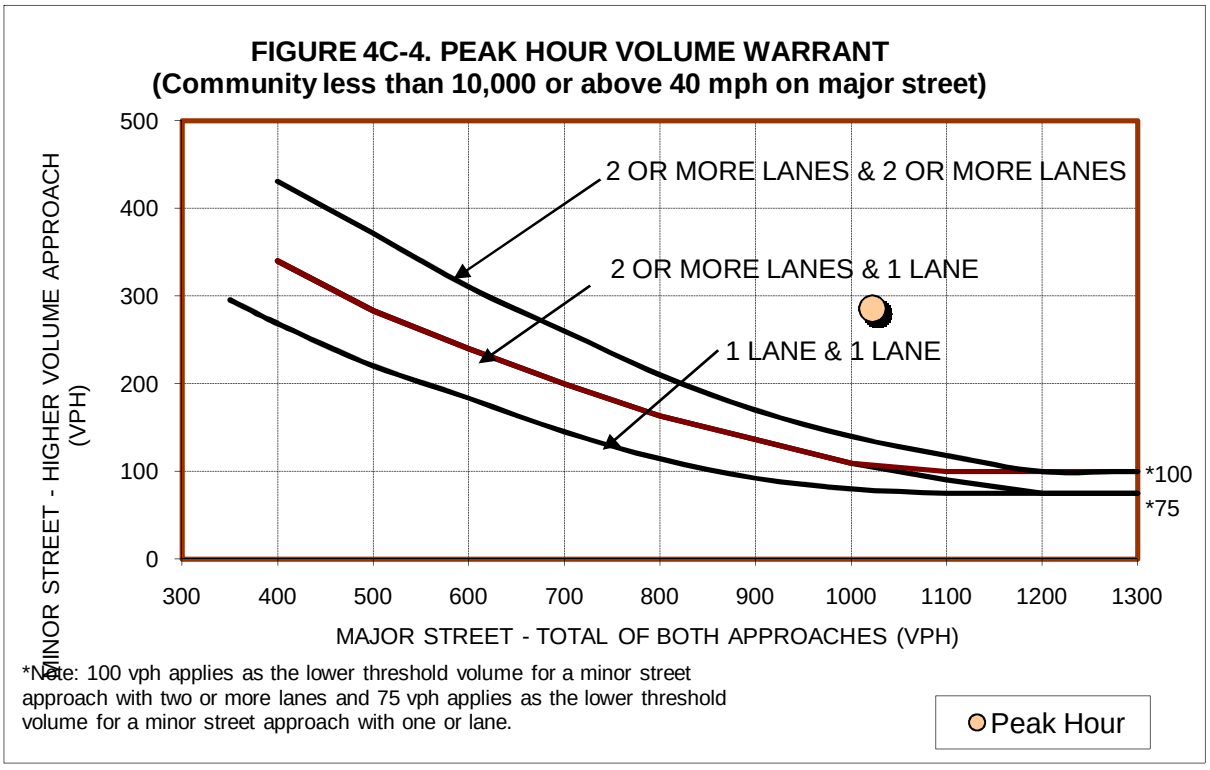
When the 85-percentile speed of the major street traffic exceeds 40 mile per hour or when the intersection lies within a built-up area of an isolated community having a population less than 10,000, the peak hour volume requirement is satisfied when the plotted point referred to above falls above the curve in Figure 4-6 for the existing combination of approach lanes.

Analysis

	No of lanes
Major Street	2
Minor Street	1

Peak Hour

Time	Vehicles Per Hour	
	Major Street (Sum of both approaches)	Minor street (High volume approach)
12:00 PM	1,022	286



Warrant	***Met***

APPENDIX E:
INTERSECTION QUEUE REPORTS

Intersection: 1: Russell Road & Van Buren Ave.

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	R	L	TR	LTR	LTR
Maximum Queue (ft)	58	218	110	68	150	58	73
Average Queue (ft)	8	90	35	19	63	22	26
95th Queue (ft)	36	167	83	53	120	52	55
Link Distance (ft)		1144			2135	476	661
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	125		125	125			
Storage Blk Time (%)		2	0		1		
Queuing Penalty (veh)		2	0		0		

Intersection: 2: Russell Road & San Juan Grade Rd.

Movement	EB	EB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	U	T	R
Maximum Queue (ft)	175	312	157	236	35	329	108
Average Queue (ft)	135	82	74	106	5	161	45
95th Queue (ft)	195	243	130	209	24	271	82
Link Distance (ft)		2135		2705		6431	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		260		175		525
Storage Blk Time (%)	7			0		5	
Queuing Penalty (veh)	6			0		9	

Intersection: 3: Van Buren Ave. & San Juan Grade Rd.

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	118	360	5
Average Queue (ft)	48	96	0
95th Queue (ft)	95	251	4
Link Distance (ft)	366	883	2705
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Northridge Wy. & San Juan Grade Rd.

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	105	192	38	124	295	317	124	260	249
Average Queue (ft)	42	103	11	70	137	166	42	112	112
95th Queue (ft)	74	169	37	123	258	287	94	221	208
Link Distance (ft)	433	368	368		261	261		267	267
Upstream Blk Time (%)					1	2		1	0
Queuing Penalty (veh)					5	8		2	1
Storage Bay Dist (ft)				100			100		
Storage Blk Time (%)				3	13		0	11	
Queuing Penalty (veh)				12	12		0	5	

Intersection: 5: Mobile Home Drwy. & San Juan Grade Rd.

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LR	R	L	T	TR	T	TR
Maximum Queue (ft)	36	42	32	38	48	89	11
Average Queue (ft)	3	9	4	1	2	7	0
95th Queue (ft)	18	33	22	28	29	52	8
Link Distance (ft)	202	271		233	233	261	261
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			60				
Storage Blk Time (%)				0			
Queuing Penalty (veh)				0			

Intersection: 6: Boronda Rd. & SB 101 Off-Ramp

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	R	T	T	R	L	LT	R
Maximum Queue (ft)	145	355	486	199	208	750	701	394	532	232
Average Queue (ft)	59	115	210	45	114	152	25	192	237	53
95th Queue (ft)	124	255	378	181	192	371	263	351	421	167
Link Distance (ft)		1085	1085		855	855	855		1625	
Upstream Blk Time (%)						0	0			
Queuing Penalty (veh)						1	1			
Storage Bay Dist (ft)	135			175				575		400
Storage Blk Time (%)	0	1	11	0				0	1	0
Queuing Penalty (veh)	0	2	20	0				1	9	0

Intersection: 7: Boronda Rd. & NB 101 On-Ramp

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	LT	R	R
Maximum Queue (ft)	733	780	885	175	164	205	238	175	199	188	198
Average Queue (ft)	273	393	567	61	23	67	81	17	90	126	132
95th Queue (ft)	591	709	934	197	87	162	181	102	165	175	187
Link Distance (ft)	855	855	855		290	290	290		1581		
Upstream Blk Time (%)	0	0	5		0	0	0				
Queuing Penalty (veh)	0	0	32		0	0	1				
Storage Bay Dist (ft)				150				150		375	375
Storage Blk Time (%)			35	0			1	0			
Queuing Penalty (veh)			90	1			6	0			

Intersection: 8: Boronda Rd. & N. Main Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	B34
Directions Served	L	L	T	T	T	R	L	T	T	T	R	T
Maximum Queue (ft)	233	228	250	244	234	218	349	657	672	676	175	268
Average Queue (ft)	163	180	205	196	187	67	71	521	555	568	99	50
95th Queue (ft)	240	246	268	274	256	167	218	734	746	765	216	213
Link Distance (ft)	158	158	158	158	158	158		588	588	588		791
Upstream Blk Time (%)	22	29	26	20	20	1		14	19	22		
Queuing Penalty (veh)	76	101	91	69	69	3		57	78	92		
Storage Bay Dist (ft)							325				150	
Storage Blk Time (%)							0	42		64	0	
Queuing Penalty (veh)							0	22		91	1	

Intersection: 8: Boronda Rd. & N. Main Street

Movement	B34	B34	NB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	L	L	T	T	R	L	T	T	R
Maximum Queue (ft)	298	353	596	609	664	426	174	150	442	520	150
Average Queue (ft)	68	80	464	464	263	180	27	115	225	297	146
95th Queue (ft)	246	282	670	690	693	324	130	178	413	490	163
Link Distance (ft)	791	791			1301	1301			2224	2224	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			650	650			150	125			125
Storage Blk Time (%)			2	4		22	0	17	23	21	36
Queuing Penalty (veh)			3	6		10	0	25	34	75	53

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	B34	B34	B34	WB	WB	WB	WB	WB
Directions Served	L	L	T	TR	T	T		L	L	T	T	T
Maximum Queue (ft)	234	314	872	864	365	365	339	135	149	244	256	294
Average Queue (ft)	123	176	544	570	115	142	80	63	78	112	129	149
95th Queue (ft)	200	329	959	965	353	391	310	116	128	208	228	255
Link Distance (ft)			791	791	588	588	588			303	303	303
Upstream Blk Time (%)			9	10						0	0	0
Queuing Penalty (veh)			64	71						1	0	2
Storage Bay Dist (ft)	290	290						300	300			
Storage Blk Time (%)		0	31							0		1
Queuing Penalty (veh)		0	96							1		2

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	WB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	
Directions Served	R	L	L	T	T	R	L	L	T	T	R	
Maximum Queue (ft)	252	143	168	230	251	160	186	200	313	244	125	
Average Queue (ft)	98	73	98	127	141	36	142	159	117	108	87	
95th Queue (ft)	215	128	152	204	217	81	210	224	272	207	145	
Link Distance (ft)				1336	1336				233	233		
Upstream Blk Time (%)									4	1		
Queuing Penalty (veh)									18	3		
Storage Bay Dist (ft)	250	325	325			250	175	175			100	
Storage Blk Time (%)	0				0	0	4	11	0	8	5	
Queuing Penalty (veh)	1				0	0	5	14	0	20	6	

Intersection: 10: Boronda Rd. & Shopping Center Drwy.

Movement	EB	EB	EB	WB	WB	WB	WB	NB
Directions Served	T	T	TR	L	T	T	T	LR
Maximum Queue (ft)	78	124	130	123	83	39	38	164
Average Queue (ft)	9	44	57	61	3	1	1	65
95th Queue (ft)	52	119	132	117	44	29	27	135
Link Distance (ft)	53	53	53		362	362	362	388
Upstream Blk Time (%)	1	10	13					
Queuing Penalty (veh)	6	47	59					
Storage Bay Dist (ft)				100				
Storage Blk Time (%)				5				
Queuing Penalty (veh)				19				

Intersection: 11: Boronda Rd. & Project Drwy

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	155	376	403	124	576	647	121	42	74	203
Average Queue (ft)	61	218	262	38	278	351	47	11	50	70
95th Queue (ft)	130	413	455	97	507	594	103	37	87	155
Link Distance (ft)		362	362		1443	1443		352		265
Upstream Blk Time (%)		2	8							0
Queuing Penalty (veh)		13	52							0
Storage Bay Dist (ft)	140			100			150		50	
Storage Blk Time (%)	1	15		1	25		0		24	11
Queuing Penalty (veh)	4	10		6	7		0		29	8

Intersection: 12: Boronda Rd. & McKinnon St.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	48	458	514	325	157	236	267	12	175	349	31	54
Average Queue (ft)	9	186	202	94	69	113	135	1	135	77	7	12
95th Queue (ft)	35	372	399	241	129	215	238	10	197	246	26	37
Link Distance (ft)		1443	1443			2924	2924			1639		1064
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	400			300	350			225	150		325	
Storage Blk Time (%)		1	2	0			1		11			
Queuing Penalty (veh)		0	9	0			0		6			

Intersection: 16: Boronda Rd. &

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB
Directions Served	T	T	T	T	T	R	T	T	T	R
Maximum Queue (ft)	154	222	264	286	276	254	151	204	203	78
Average Queue (ft)	26	42	87	70	73	25	29	122	120	25
95th Queue (ft)	135	181	240	216	220	150	113	203	179	65
Link Distance (ft)		290	290	290	290		158	158	158	241
Upstream Blk Time (%)	0	1	1	0	0	0	0	1	1	
Queuing Penalty (veh)	0	4	4	1	3	0	0	8	5	
Storage Bay Dist (ft)	250					250				
Storage Blk Time (%)	1	1			0	1				
Queuing Penalty (veh)	2	5			3	3				

Intersection: 17: Boronda Rd. & Project Drwy

Movement	EB	EB	EB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	TR	R
Maximum Queue (ft)	50	86	95	8	14	47	95
Average Queue (ft)	2	7	12	0	0	2	43
95th Queue (ft)	24	44	57	5	8	22	80
Link Distance (ft)	303	303	303	53	53	53	286
Upstream Blk Time (%)				0	0	0	
Queuing Penalty (veh)				0	0	1	
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 32: Project Drwy & San Juan Grade Rd.

Movement	NB	NB	SB	SB
Directions Served	T	TR	T	T
Maximum Queue (ft)	173	178	44	45
Average Queue (ft)	35	37	3	2
95th Queue (ft)	110	117	29	24
Link Distance (ft)	267	267		883
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)			100	
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Network Summary

Network wide Queuing Penalty: 1804

Intersection: 1: Russell Road & Van Buren Ave.

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	R	L	TR	LTR	LTR
Maximum Queue (ft)	92	116	62	62	128	67	80
Average Queue (ft)	28	43	21	17	58	24	36
95th Queue (ft)	64	91	53	50	104	54	65
Link Distance (ft)		1144			2135	476	661
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	125		125	125			
Storage Blk Time (%)		0	0		0		
Queuing Penalty (veh)		0	0		0		

Intersection: 2: Russell Road & San Juan Grade Rd.

Movement	EB	EB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	U	T	R
Maximum Queue (ft)	136	70	114	200	32	276	80
Average Queue (ft)	66	37	55	67	2	125	33
95th Queue (ft)	112	66	98	152	15	230	65
Link Distance (ft)		2135		2705		6431	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		260		175		525
Storage Blk Time (%)	0					2	
Queuing Penalty (veh)	0					3	

Intersection: 3: Van Buren Ave. & San Juan Grade Rd.

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	127	239
Average Queue (ft)	56	68
95th Queue (ft)	102	179
Link Distance (ft)	366	883
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Northridge Wy. & San Juan Grade Rd.

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	90	278	42	124	293	300	124	263	226
Average Queue (ft)	44	126	13	51	130	162	51	117	109
95th Queue (ft)	74	212	39	109	251	279	106	217	197
Link Distance (ft)	433	368	368		261	261		267	267
Upstream Blk Time (%)					1	2		0	0
Queuing Penalty (veh)					5	7		1	0
Storage Bay Dist (ft)				100			100		
Storage Blk Time (%)				4	13		2	12	
Queuing Penalty (veh)				11	9		5	8	

Intersection: 5: Mobile Home Drwy. & San Juan Grade Rd.

Movement	WB	NB	NB	NB	SB	SB
Directions Served	R	L	T	TR	T	TR
Maximum Queue (ft)	38	12	21	52	228	124
Average Queue (ft)	14	1	1	3	20	9
95th Queue (ft)	40	8	11	29	111	61
Link Distance (ft)	271		232	232	261	261
Upstream Blk Time (%)					0	
Queuing Penalty (veh)					1	
Storage Bay Dist (ft)		60				
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 6: Boronda Rd. & SB 101 Off-Ramp

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	R	T	T	R	L	LT	R
Maximum Queue (ft)	159	258	314	198	316	341	332	285	305	162
Average Queue (ft)	79	105	144	7	161	182	12	163	181	65
95th Queue (ft)	145	201	248	68	277	302	174	266	278	119
Link Distance (ft)		1085	1085		855	855	855		1625	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	135			175				575		400
Storage Blk Time (%)	1	2	3	0						
Queuing Penalty (veh)	3	6	4	0						

Intersection: 7: Boronda Rd. & NB 101 On-Ramp

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	R	T	T	T	R	LT	R	R
Maximum Queue (ft)	656	732	780	175	241	344	326	175	159	230	219
Average Queue (ft)	274	358	437	59	81	126	127	38	61	147	157
95th Queue (ft)	533	664	728	195	189	263	262	155	130	198	204
Link Distance (ft)	855	855	855		290	290	290		1581		
Upstream Blk Time (%)			0		0	1	0				
Queuing Penalty (veh)			1		0	4	3				
Storage Bay Dist (ft)				150				150		375	375
Storage Blk Time (%)			39	0			2	0			
Queuing Penalty (veh)			55	1			14	1			

Intersection: 8: Boronda Rd. & N. Main Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	B34
Directions Served	L	L	T	T	T	R	L	T	T	T	R	T
Maximum Queue (ft)	227	230	244	239	237	231	349	650	655	660	175	224
Average Queue (ft)	146	166	221	215	204	64	148	488	522	534	84	39
95th Queue (ft)	227	244	252	259	247	163	298	707	726	740	198	206
Link Distance (ft)	158	158	158	158	158	158		581	581	581		791
Upstream Blk Time (%)	14	21	33	26	27	0		9	12	15		
Queuing Penalty (veh)	45	67	106	84	86	1		43	59	69		
Storage Bay Dist (ft)							325				150	
Storage Blk Time (%)							0	33		54	2	
Queuing Penalty (veh)							0	38		82	6	

Intersection: 8: Boronda Rd. & N. Main Street

Movement	B34	B34	NB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	L	L	T	T	R	L	T	T	R
Maximum Queue (ft)	248	255	450	438	298	314	175	150	623	689	150
Average Queue (ft)	50	61	357	350	160	175	39	106	311	386	146
95th Queue (ft)	227	254	442	431	257	272	157	179	564	653	165
Link Distance (ft)	791	791			1301	1301			2224	2224	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			650	650			150	125			125
Storage Blk Time (%)						21	0	13	36	29	43
Queuing Penalty (veh)						11	0	22	49	89	76

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	B34	B34	B34	WB	WB	WB	WB	WB
Directions Served	L	L	T	TR	T	T		L	L	T	T	T
Maximum Queue (ft)	300	314	834	838	411	412	321	179	209	254	284	328
Average Queue (ft)	184	217	536	555	136	167	91	85	101	146	159	179
95th Queue (ft)	296	344	879	886	391	433	301	155	170	240	256	291
Link Distance (ft)			791	791	581	581	581			303	303	303
Upstream Blk Time (%)			3	4						0	0	1
Queuing Penalty (veh)			23	28						0	0	4
Storage Bay Dist (ft)	290	290						300	300			
Storage Blk Time (%)	1	5	24							0		2
Queuing Penalty (veh)	6	24	85							0		4

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	WB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	
Directions Served	R	L	L	T	T	R	L	L	T	T	R	
Maximum Queue (ft)	255	191	236	209	228	119	186	200	311	306	125	
Average Queue (ft)	84	107	129	103	122	37	146	163	165	149	96	
95th Queue (ft)	210	174	199	177	197	77	211	228	323	270	154	
Link Distance (ft)				1336	1336				232	232		
Upstream Blk Time (%)									7	3		
Queuing Penalty (veh)									34	14		
Storage Bay Dist (ft)	250	325	325			250	175	175			100	
Storage Blk Time (%)	0				0	0	6	14	2	16	7	
Queuing Penalty (veh)	0				0	0	9	21	7	41	11	

Intersection: 10: Boronda Rd. & Shopping Center Drwy.

Movement	EB	EB	EB	WB	WB	WB	WB	NB				
Directions Served	T	T	TR	L	T	T	T	LR				
Maximum Queue (ft)	77	115	119	124	306	295	106	246				
Average Queue (ft)	6	25	39	78	35	14	4	83				
95th Queue (ft)	40	82	115	137	185	115	57	218				
Link Distance (ft)	53	53	53		362	362	362	388				
Upstream Blk Time (%)	0	4	8		0	0		1				
Queuing Penalty (veh)	2	16	33		1	0		0				
Storage Bay Dist (ft)				100								
Storage Blk Time (%)				11								
Queuing Penalty (veh)				43								

Intersection: 11: Boronda Rd. & Project Drwy

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	164	384	394	94	872	944	73	47	74	269
Average Queue (ft)	77	210	254	13	464	522	20	11	58	101
95th Queue (ft)	140	426	452	54	873	944	57	37	90	208
Link Distance (ft)		362	362		1443	1443		352		265
Upstream Blk Time (%)		1	4							1
Queuing Penalty (veh)		6	26							0
Storage Bay Dist (ft)	140			100			150		50	
Storage Blk Time (%)	2	12			37				30	16
Queuing Penalty (veh)	11	10			3				47	14

Intersection: 12: Boronda Rd. & McKinnon St.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	TR
Maximum Queue (ft)	30	547	575	325	213	291	303	17	175	330	23
Average Queue (ft)	4	241	263	102	93	149	158	1	153	96	3
95th Queue (ft)	20	460	499	283	164	263	278	8	204	296	15
Link Distance (ft)		1443	1443			2924	2924			1639	1064
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	400			300	350			225	150		
Storage Blk Time (%)		2	6	0		0	2		15		
Queuing Penalty (veh)		0	14	0		0	0		3		

Intersection: 16: Boronda Rd. &

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB
Directions Served	T	T	T	T	T	R	T	T	T	R
Maximum Queue (ft)	128	214	281	358	364	275	201	221	184	97
Average Queue (ft)	11	26	110	100	128	49	26	94	89	28
95th Queue (ft)	75	132	245	262	302	217	119	188	161	88
Link Distance (ft)		290	290	290	290		158	158	158	241
Upstream Blk Time (%)		0	0	0	1	0	0	1	0	
Queuing Penalty (veh)		0	1	2	7	0	1	6	3	
Storage Bay Dist (ft)	250					250				
Storage Blk Time (%)		0			1	2				
Queuing Penalty (veh)		0			9	6				

Intersection: 17: Boronda Rd. & Project Drwy

Movement	EB	EB	EB	WB	SB
Directions Served	T	T	T	TR	R
Maximum Queue (ft)	30	51	93	58	146
Average Queue (ft)	1	3	8	2	57
95th Queue (ft)	17	25	48	23	111
Link Distance (ft)	303	303	303	53	286
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				1	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

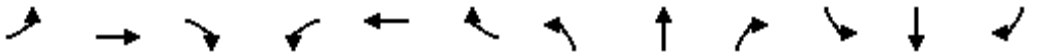
Intersection: 32: Project Drwy & San Juan Grade Rd.

Movement	NB	NB	SB	SB
Directions Served	T	TR	T	T
Maximum Queue (ft)	99	112	12	11
Average Queue (ft)	15	20	0	0
95th Queue (ft)	61	74	6	8
Link Distance (ft)	267	267		883
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

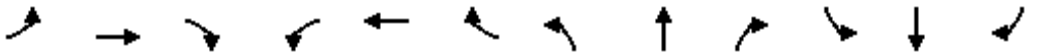
Network wide Queuing Penalty: 1653

APPENDIX F:
MITIGATED INTERSECTION LEVEL OF SERVICE CALCULATIONS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	294	822	64	187	646	242	95	293	82	286	185	241
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		1.00	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	0.97	1.00	1.00	0.97	1.00	1.00	0.97
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	3494		1770	5085	1537	1770	3539	1529	1770	3539	1531
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	3494		1770	5085	1537	1770	3539	1529	1770	3539	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	313	874	68	199	687	257	101	312	87	304	197	256
RTOR Reduction (vph)	0	4	0	0	0	179	0	0	73	0	0	195
Lane Group Flow (vph)	313	938	0	199	687	78	101	312	14	304	197	61
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	13.3	33.6		11.2	31.5	31.5	10.6	17.1	17.1	18.3	24.8	24.8
Effective Green, g (s)	13.3	33.6		11.2	31.5	31.5	10.6	17.1	17.1	18.3	24.8	24.8
Actuated g/C Ratio	0.13	0.32		0.11	0.30	0.30	0.10	0.16	0.16	0.18	0.24	0.24
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	438	1127		190	1537	465	180	581	251	311	842	364
v/s Ratio Prot	0.09	c0.27		c0.11	0.14		0.06	c0.09		c0.17	0.06	
v/s Ratio Perm						0.05			0.01			0.04
v/c Ratio	0.71	0.83		1.05	0.45	0.17	0.56	0.54	0.06	0.98	0.23	0.17
Uniform Delay, d1	43.6	32.7		46.5	29.3	26.7	44.6	39.9	36.7	42.7	32.0	31.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	5.4		78.3	0.2	0.2	2.4	1.0	0.1	44.3	0.1	0.2
Delay (s)	48.2	38.1		124.8	29.5	26.9	47.0	40.9	36.8	87.0	32.2	31.7
Level of Service	D	D		F	C	C	D	D	D	F	C	C
Approach Delay (s)		40.6			45.5			41.4			54.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM Average Control Delay	45.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	104.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	350	654	71	229	756	161	121	224	86	290	205	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		1.00	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	0.97	1.00	1.00	0.97	1.00	1.00	0.97
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	3477		1770	5085	1536	1770	3539	1529	1770	3539	1532
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	3477		1770	5085	1536	1770	3539	1529	1770	3539	1532
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	372	696	76	244	804	171	129	238	91	309	218	264
RTOR Reduction (vph)	0	6	0	0	0	128	0	0	77	0	0	205
Lane Group Flow (vph)	372	766	0	244	804	43	129	238	14	309	218	59
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.3	26.8		11.3	23.8	23.8	11.8	14.8	14.8	18.4	21.4	21.4
Effective Green, g (s)	14.3	26.8		11.3	23.8	23.8	11.8	14.8	14.8	18.4	21.4	21.4
Actuated g/C Ratio	0.15	0.28		0.12	0.25	0.25	0.12	0.16	0.16	0.19	0.22	0.22
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	515	978		210	1270	384	219	550	237	342	795	344
v/s Ratio Prot	0.11	c0.22		c0.14	0.16		0.07	c0.07		c0.17	0.06	
v/s Ratio Perm						0.03			0.01			0.04
v/c Ratio	0.72	0.78		1.16	0.63	0.11	0.59	0.43	0.06	0.90	0.27	0.17
Uniform Delay, d1	38.6	31.6		42.0	31.9	27.6	39.5	36.4	34.3	37.6	30.5	29.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	4.1		112.6	1.0	0.1	2.6	0.5	0.1	25.5	0.2	0.2
Delay (s)	42.8	35.7		154.6	32.9	27.7	42.1	37.0	34.4	63.1	30.7	30.0
Level of Service	D	D		F	C	C	D	D	C	E	C	C
Approach Delay (s)		38.0			56.5			37.9			43.1	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM Average Control Delay	45.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

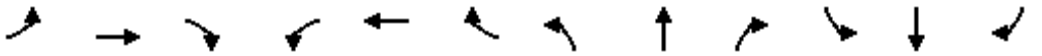
Improvements include SBR overlap phase, third eastbound through lane, and separate westbound right turn lane.

HCM Signalized Intersection Capacity Analysis

8: Boronda Rd. & N. Main Street

Cum With Prj_PM Mitiigation

7/17/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	1235	455	53	1041	143	717	332	47	148	299	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9	5.9	4.6	4.4	4.4	4.2	4.4	3.7
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.96	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	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1526	1770	5085	1526	3433	3539	1517	1770	3539	1563
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1526	1770	5085	1526	3433	3539	1517	1770	3539	1563
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	441	1314	484	56	1107	152	763	353	50	157	318	370
RTOR Reduction (vph)	0	0	225	0	0	59	0	0	43	0	0	6
Lane Group Flow (vph)	441	1314	259	56	1107	93	763	353	7	157	318	364
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	28.5	60.1	60.1	6.9	38.5	38.5	35.8	20.0	20.0	35.5	19.3	47.8
Effective Green, g (s)	29.5	61.6	61.6	7.9	38.5	38.5	36.8	21.5	21.5	36.5	20.8	50.8
Actuated g/C Ratio	0.20	0.43	0.43	0.05	0.27	0.27	0.25	0.15	0.15	0.25	0.14	0.35
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9	5.9	5.6	5.9	5.9	5.2	5.9	5.2
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3	2.3	1.8	2.3	2.3	1.8	2.3	1.8
Lane Grp Cap (vph)	700	2165	650	97	1353	406	873	526	225	446	509	549
v/s Ratio Prot	0.13	0.26		0.03	c0.22		c0.22	0.10		0.09	0.09	c0.14
v/s Ratio Perm			0.17			0.06			0.00			0.10
v/c Ratio	0.63	0.61	0.40	0.58	0.82	0.23	0.87	0.67	0.03	0.35	0.62	0.66
Uniform Delay, d1	52.6	32.2	28.7	66.8	49.8	41.5	51.7	58.3	52.7	44.4	58.3	39.7
Progression Factor	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.7	0.8	5.1	3.8	0.2	9.4	2.9	0.0	0.2	1.9	2.3
Delay (s)	54.0	32.9	29.3	71.9	53.6	41.7	61.1	61.1	52.7	44.6	60.2	42.1
Level of Service	D	C	C	E	D	D	E	E	D	D	E	D
Approach Delay (s)		36.3			53.0			60.8			49.4	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	144.7	Sum of lost time (s)	17.9
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

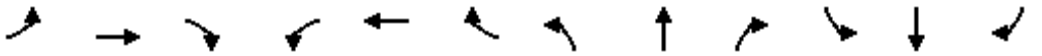
Improvements include SBR overlap phase, third eastbound through lane, and separate westbound right turn lane.

HCM Signalized Intersection Capacity Analysis

8: Boronda Rd. & N. Main Street

Cum With Prj_SAT Mitigation

7/17/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1203	421	118	1156	150	809	342	54	135	354	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9	5.9	4.6	4.4	4.4	4.2	4.4	3.7
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.96	1.00	1.00	0.96	1.00	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	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1522	1770	5085	1524	3433	3539	1515	1770	3539	1558
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1522	1770	5085	1524	3433	3539	1515	1770	3539	1558
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	331	1280	448	126	1230	160	861	364	57	144	377	326
RTOR Reduction (vph)	0	0	213	0	0	54	0	0	49	0	0	6
Lane Group Flow (vph)	331	1280	235	126	1230	106	861	364	8	144	377	320
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4			8			2			6
Actuated Green, G (s)	24.4	54.9	54.9	14.0	44.5	44.5	42.3	21.2	21.2	43.6	22.1	46.5
Effective Green, g (s)	25.4	56.4	56.4	15.0	44.5	44.5	43.3	22.7	22.7	44.6	23.6	49.5
Actuated g/C Ratio	0.16	0.36	0.36	0.10	0.29	0.29	0.28	0.15	0.15	0.29	0.15	0.32
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9	5.9	5.6	5.9	5.9	5.2	5.9	5.2
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3	2.3	1.8	2.3	2.3	1.8	2.3	1.8
Lane Grp Cap (vph)	559	1840	551	170	1451	435	953	515	221	506	536	495
v/s Ratio Prot	0.10	c0.25		0.07	c0.24		c0.25	0.10		0.08	c0.11	c0.11
v/s Ratio Perm			0.15			0.07			0.01			0.10
v/c Ratio	0.59	0.70	0.43	0.74	0.85	0.24	0.90	0.71	0.04	0.28	0.70	0.65
Uniform Delay, d1	60.5	42.4	37.6	68.6	52.5	42.8	54.3	63.4	57.2	43.3	62.8	45.7
Progression Factor	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	1.4	1.0	14.1	4.7	0.2	11.5	3.9	0.0	0.1	3.7	2.2
Delay (s)	61.6	43.9	38.4	82.6	57.2	43.0	65.8	67.3	57.3	43.4	66.5	47.9
Level of Service	E	D	D	F	E	D	E	E	E	D	E	D
Approach Delay (s)		45.5			57.8			65.8			55.4	
Approach LOS		D			E			E			E	

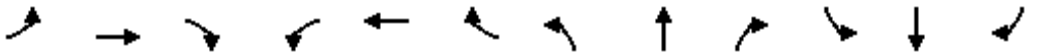
Intersection Summary			
HCM Average Control Delay	54.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	155.9	Sum of lost time (s)	14.9
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Improvements include SBR overlap phase and third eastbound through lane.

HCM Signalized Intersection Capacity Analysis
8: Boronda Rd. & N. Main Street

Cum With Prj_PM Mitiigation
8/9/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	415	1235	455	53	1041	143	717	332	47	148	299	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	3.7
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	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	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1525	1770	4971		3433	3539	1517	1770	3539	1561
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1525	1770	4971		3433	3539	1517	1770	3539	1561
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	441	1314	484	56	1107	152	763	353	50	157	318	370
RTOR Reduction (vph)	0	0	223	0	11	0	0	0	43	0	0	6
Lane Group Flow (vph)	441	1314	261	56	1248	0	763	353	7	157	318	364
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	26.1	61.2	61.2	7.0	42.1		36.0	20.0	20.0	35.7	19.3	45.4
Effective Green, g (s)	27.1	62.7	62.7	8.0	42.1		37.0	21.5	21.5	36.7	20.8	48.4
Actuated g/C Ratio	0.19	0.43	0.43	0.05	0.29		0.25	0.15	0.15	0.25	0.14	0.33
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.2
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	1.8
Lane Grp Cap (vph)	637	2182	654	97	1432		869	521	223	445	504	517
v/s Ratio Prot	0.13	0.26		0.03	c0.25		c0.22	0.10		0.09	0.09	c0.13
v/s Ratio Perm			0.17						0.00			0.10
v/c Ratio	0.69	0.60	0.40	0.58	0.87		0.88	0.68	0.03	0.35	0.63	0.70
Uniform Delay, d1	55.6	32.1	28.7	67.4	49.4		52.4	59.0	53.4	44.9	59.0	42.6
Progression Factor	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.7	0.8	5.1	6.0		9.7	3.0	0.0	0.2	2.1	3.5
Delay (s)	58.2	32.8	29.3	72.5	55.5		62.1	62.0	53.4	45.1	61.1	46.2
Level of Service	E	C	C	E	E		E	E	D	D	E	D
Approach Delay (s)		37.0			56.2			61.7			51.6	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM Average Control Delay	48.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	146.1	Sum of lost time (s)	17.9
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

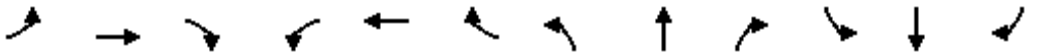
Improvements include SBR overlap phase and third eastbound through lane.

HCM Signalized Intersection Capacity Analysis

Cum With Prj_SAT Mitigation

8: Boronda Rd. & N. Main Street

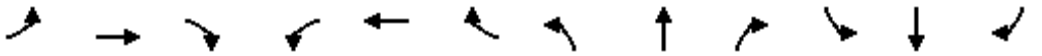
8/9/2010



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	311	1203	421	118	1150	150	809	342	54	135	354	306
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.2	4.4	4.4	4.2	5.9		4.6	4.4	4.4	4.2	4.4	3.7
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91		0.97	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00		1.00	1.00	0.96	1.00	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	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1522	1770	4976		3433	3539	1515	1770	3539	1555
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1522	1770	4976		3433	3539	1515	1770	3539	1555
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	331	1280	448	126	1230	160	861	364	57	144	377	326
RTOR Reduction (vph)	0	0	213	0	10	0	0	0	49	0	0	6
Lane Group Flow (vph)	331	1280	235	126	1380	0	861	364	8	144	377	320
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot			Prot		Perm	Prot		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases			4						2			6
Actuated Green, G (s)	20.4	54.9	54.9	14.0	48.5		42.3	21.2	21.2	43.6	22.1	42.5
Effective Green, g (s)	21.4	56.4	56.4	15.0	48.5		43.3	22.7	22.7	44.6	23.6	45.5
Actuated g/C Ratio	0.14	0.36	0.36	0.10	0.31		0.28	0.15	0.15	0.29	0.15	0.29
Clearance Time (s)	5.2	5.9	5.9	5.2	5.9		5.6	5.9	5.9	5.2	5.9	5.2
Vehicle Extension (s)	1.8	4.8	4.8	1.8	2.3		1.8	2.3	2.3	1.8	2.3	1.8
Lane Grp Cap (vph)	471	1840	551	170	1548		953	515	221	506	536	454
v/s Ratio Prot	0.10	c0.25		0.07	c0.28		c0.25	0.10		0.08	0.11	c0.10
v/s Ratio Perm			0.15						0.01			0.11
v/c Ratio	0.70	0.70	0.43	0.74	0.89		0.90	0.71	0.04	0.28	0.70	0.70
Uniform Delay, d1	64.2	42.4	37.6	68.6	51.2		54.3	63.4	57.2	43.3	62.8	49.2
Progression Factor	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	1.4	1.0	14.1	6.8		11.5	3.9	0.0	0.1	3.7	4.0
Delay (s)	68.1	43.9	38.4	82.6	58.0		65.8	67.3	57.3	43.4	66.5	53.2
Level of Service	E	D	D	F	E		E	E	E	D	E	D
Approach Delay (s)		46.6			60.1			65.8			57.5	
Approach LOS		D			E			E			E	

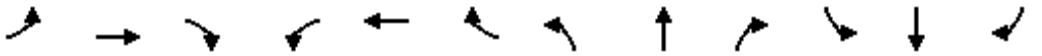
Intersection Summary			
HCM Average Control Delay	56.1	HCM Level of Service	E
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	155.9	Sum of lost time (s)	14.2
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



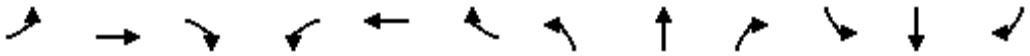
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	313	1053	64	187	728	287	256	431	94	349	263	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97
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		3433	5085	1537	3433	3539	1531	3433	3539	1528
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		3433	5085	1537	3433	3539	1531	3433	3539	1528
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	333	1120	68	199	774	305	272	459	100	371	280	269
RTOR Reduction (vph)	0	3	0	0	0	205	0	0	81	0	0	203
Lane Group Flow (vph)	333	1185	0	199	774	100	272	459	19	371	280	66
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	13.7	40.3		10.0	36.6	36.6	13.3	21.1	21.1	15.7	23.5	23.5
Effective Green, g (s)	13.7	40.3		10.0	36.6	36.6	13.3	21.1	21.1	15.7	23.5	23.5
Actuated g/C Ratio	0.12	0.36		0.09	0.33	0.33	0.12	0.19	0.19	0.14	0.21	0.21
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	423	1271		309	1675	506	411	672	291	485	749	323
v/s Ratio Prot	c0.10	c0.34		0.06	0.15		0.08	c0.13		c0.11	0.08	
v/s Ratio Perm						0.07			0.01			0.04
v/c Ratio	0.79	0.93		0.64	0.46	0.20	0.66	0.68	0.07	0.76	0.37	0.20
Uniform Delay, d1	47.3	34.1		48.8	29.5	26.7	46.7	41.9	36.9	45.9	37.5	36.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	12.3		3.4	0.2	0.2	3.1	2.9	0.1	6.4	0.3	0.3
Delay (s)	55.9	46.4		52.3	29.7	26.9	49.8	44.8	37.0	52.3	37.8	36.4
Level of Service	E	D		D	C	C	D	D	D	D	D	D
Approach Delay (s)		48.5			32.5			45.5			43.2	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM Average Control Delay	42.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	111.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	363	958	71	229	835	207	330	364	99	373	298	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.96
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	3496		3433	5085	1537	3433	3539	1529	3433	3539	1525
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	3496		3433	5085	1537	3433	3539	1529	3433	3539	1525
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	386	1019	76	244	888	220	351	387	105	397	317	276
RTOR Reduction (vph)	0	4	0	0	0	147	0	0	87	0	0	183
Lane Group Flow (vph)	386	1091	0	244	888	73	351	387	18	397	317	93
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	14.1	40.3		10.7	36.9	36.9	15.7	19.2	19.2	16.4	19.9	19.9
Effective Green, g (s)	14.1	40.3		10.7	36.9	36.9	15.7	19.2	19.2	16.4	19.9	19.9
Actuated g/C Ratio	0.13	0.36		0.10	0.33	0.33	0.14	0.17	0.17	0.15	0.18	0.18
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	438	1274		332	1697	513	487	614	265	509	637	274
v/s Ratio Prot	c0.11	c0.31		0.07	0.17		0.10	c0.11		c0.12	0.09	
v/s Ratio Perm						0.05			0.01			0.06
v/c Ratio	0.88	0.86		0.73	0.52	0.14	0.72	0.63	0.07	0.78	0.50	0.34
Uniform Delay, d1	47.4	32.5		48.6	29.7	25.8	45.4	42.4	38.2	45.4	40.8	39.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	17.9	5.9		7.1	0.3	0.1	4.4	2.1	0.1	6.8	0.6	0.7
Delay (s)	65.3	38.4		55.7	30.0	25.9	49.8	44.5	38.3	52.2	41.5	40.4
Level of Service	E	D		E	C	C	D	D	D	D	D	D
Approach Delay (s)		45.4			34.0			45.9			45.4	
Approach LOS		D			C			D			D	

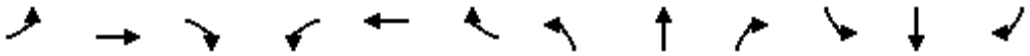
Intersection Summary			
HCM Average Control Delay	42.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.6	Sum of lost time (s)	24.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	1008	364	95	925	3	262	4	49	8	5	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	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		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1501	1770	3539	1503	1770	1558		1753	1612	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00		0.72	1.00	
Satd. Flow (perm)	1770	3539	1501	1770	3539	1503	1386	1558		1330	1612	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	7	1072	387	101	984	3	279	4	52	9	5	15
RTOR Reduction (vph)	0	0	197	0	0	1	0	39	0	0	11	0
Lane Group Flow (vph)	7	1072	190	101	984	2	279	17	0	9	9	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.1	49.1	8.3	56.2	56.2	24.5	24.5		24.5	24.5	
Effective Green, g (s)	1.2	49.1	49.1	8.3	56.2	56.2	24.5	24.5		24.5	24.5	
Actuated g/C Ratio	0.01	0.49	0.49	0.08	0.56	0.56	0.25	0.25		0.25	0.25	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	21	1739	738	147	1991	846	340	382		326	395	
v/s Ratio Prot	0.00	c0.30		c0.06	c0.28			0.01			0.01	
v/s Ratio Perm			0.13			0.00	c0.20			0.01		
v/c Ratio	0.33	0.62	0.26	0.69	0.49	0.00	0.82	0.04		0.03	0.02	
Uniform Delay, d1	49.0	18.5	14.8	44.5	13.2	9.6	35.6	28.8		28.6	28.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.1	1.6	0.8	12.5	0.9	0.0	14.6	0.0		0.0	0.0	
Delay (s)	58.1	20.2	15.6	57.1	14.1	9.6	50.2	28.8		28.7	28.6	
Level of Service	E	C	B	E	B	A	D	C		C	C	
Approach Delay (s)		19.2			18.1			46.6			28.6	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM Average Control Delay	22.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	99.9	Sum of lost time (s)	24.5
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	1014	231	121	1037	3	294	0	17	0	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.97			0.98	
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	1.00	0.85	1.00	0.85			0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			1.00	
Satd. Flow (prot)	1770	3539	1498	1770	3539	1500	1770	1534			1663	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.75	1.00			1.00	
Satd. Flow (perm)	1770	3539	1498	1770	3539	1500	1405	1534			1663	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	4	1079	246	129	1103	3	313	0	18	0	2	3
RTOR Reduction (vph)	0	0	131	0	0	1	0	13	0	0	2	0
Lane Group Flow (vph)	4	1079	115	129	1103	2	313	5	0	0	3	0
Confl. Peds. (#/hr)			10			10			10	10		10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot		Perm	Prot		Perm	Perm			Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.2	49.8	49.8	11.0	59.6	59.6	27.4	27.4			27.4	
Effective Green, g (s)	1.2	49.8	49.8	11.0	59.6	59.6	27.4	27.4			27.4	
Actuated g/C Ratio	0.01	0.47	0.47	0.10	0.56	0.56	0.26	0.26			0.26	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5	6.5	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	20	1660	702	183	1986	842	362	396			429	
v/s Ratio Prot	0.00	c0.30		c0.07	0.31			0.00			0.00	
v/s Ratio Perm			0.08			0.00	c0.22					
v/c Ratio	0.20	0.65	0.16	0.70	0.56	0.00	0.86	0.01			0.01	
Uniform Delay, d1	52.0	21.5	16.2	46.0	14.9	10.2	37.6	29.3			29.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	4.9	2.0	0.5	11.7	1.1	0.0	18.8	0.0			0.0	
Delay (s)	56.9	23.5	16.7	57.7	16.0	10.2	56.5	29.3			29.3	
Level of Service	E	C	B	E	B	B	E	C			C	
Approach Delay (s)		22.4			20.3			55.0			29.3	
Approach LOS		C			C			D			C	

Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	106.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX G:
APPROVED AND PENDING PROJECTS

Map #	Development	Description	Size	Unit
	Approved			
	Rogge Road	Residential Development	123	SFU
			48	APT
	Applied Technology Building at Hartnell College East Campus	College Campus	750	students
	Hartnell College Expansion	College Campus	3,000	students
	Monta Bella Subdivision	Single-Family Detached Housing	550	units
	Boronda Crossing			
		New Car Sales (Bldg. A2)	12,000	sq-ft
		New Car Sales (Bldg. A3)	15,000	sq-ft
		New Car Sales (Bldg. A4)	15,000	sq-ft
	Butterfly Village			
	Unikool Ag-Industrial Center		257	Acres
	Walmart	Shopping Center	102,180	sq-ft
	Pending			
	Fresh Express Expansion	Manufacturing Unit	283	ksf
	Salinas Jet Center			
		Office	60,000	sq-ft
		Hangar Space	100,000	sq-ft
		Hotel	100	rooms
		Restaurant	4,000	sq-ft
	Nestech-Boronda Meadows	General/Executive Office	51,345	sq-ft
		Mixed-Use Retail and Residential	13,156	sq-ft
			74	units
		Mixed-Use Retail and Residential	87,995	sq-ft
			48	units
		Car Wash, Mini-Mart w/food, and Pump Is	7,079	sq-ft
		Commercial Retail and Offices	28,854	sq-ft
			9,618	sq-ft
		Commercial/Restaurant	8,886	sq-ft
		Commercial Retail and Offices	21,591	sq-ft
			7,197	sq-ft
		Neighborhood II	87	units
		Neighborhood III	105	units
		Neighborhood IV	165	units
		Neighborhood V	150	units
		Total		

APPENDIX H:
FAIR SHARE CALCULATIONS AT THE INTERSECTION OF BORONDA ROAD AND MAIN STREET

Salinas (Cloverfield) Retail Center Fair-Share Contribution at Boronda Road and Main Street

Cumulative-Level Impact Contributions

Study Int #	Intersection	Juristiction	Peak Hour	Total Existing Intersection Volume (V_E)	Total Cumulative Intersection Volume (V_T)	Project Trips (V_P)	Percent Contribution of Growth $V_P/(V_T-V_E)$	Percent Contribution of Total Traffic (V_P/V_T)	Salinas (Cloverfield) Retail Center TIA Recommended Mitigation
8	Boronda Road and Main Street	Salinas	PM	4103	5233	455	40.27%	8.69%	1) Add a third eastbound through, 2) Conversion of the westbound through-right lane into an exclusive through lane (SAT only), 3) A separate westbound right-turn lane (SAT only), and 4) southbound right-turn overlap phase.
			SAT	3948	5359	603	42.74%	11.25%	

Notes:

1 Other impacted intersection mitigated with payment of Traffic Impact Fees.

APPENDIX I:
EAST BORONDA ROAD AND SAN JUAN GRADE ROAD INTERSECTION ANALYSIS MEMORANDUM

FEHR & PEERS
TRANSPORTATION CONSULTANTS

MEMORANDUM

Date: April 15, 2010

To: Rob Russell, City of Salinas
Tara Hullinger, City of Salinas

From: Daniel Rubins, P.E. and Kevin Chen

Subject: ***East Boronda Road and San Juan Grade Road Intersection Analysis***
SJ10-1154

Fehr & Peers was retained to evaluate the traffic operations at the East Boronda Road / San Juan Grade Road intersection. The analysis considered both the AM and PM peak hour conditions under Year 2030 Current General Plan Conditions. The study was completed to identify the appropriate geometric design for the westbound right turn-lane and to inform the site developer regarding project site driveway placement on East Boronda Road. For this study, Boronda Road is considered east-west, while San Juan Grade Road is considered north-south.

BACKGROUND

The proposed Salinas Retail Center located at the northeast corner of Boronda Road and San Juan Grade Road in Salinas, California is consistent with the current General Plan land use, but conflicts with the planned roadway improvements at San Juan Grade Road and Boronda Road. Specifically the proposed site plan would only accommodate a westbound shared through-right lane. The City of Salinas Public Works Department has an active project (No. 9510) to construct double lefts on all approaches and maintain the sweeping westbound right-turn lane.

Three *City of Traffic Improvement Program* (TIP) projects planned at or near the East Boronda Road and San Juan Grade Road intersection include:

TIP Project 13: San Juan Grade Road (north/south roadway) widened to a 4-lane divided arterial with bicycle lanes between East Boronda Road and Rogge Road. This roadway will serve an estimated 14,900 vehicles per day with construction of the future growth area north of East Boronda Road. The posted speed limit will be 35 to 40 mph.

TIP Project 20: East Boronda Road (east/west roadway) widened to a 6-lane divided arterial between San Juan Grade Road and Williams Road. This roadway will serve an estimated 57,200 daily vehicles with construction of the future growth area north of East Boronda Road. The posted speed limit will be 40 to 45 mph.

TIP Project 50: Turning movements at the East Boronda Road / San Juan Grade Road intersection includes two lefts, two or three through lanes, and separate right-turn lanes for all approaches. Bicycle lanes are planned on all four approaches.

GEOMETRIC ALTERNATIVES CONSIDERED

This study evaluated five geometric configurations which are shown on **Figure 1** and summarized below:

- **Intersection Configuration 1**: Intersection turning movement configuration and design based on City Public Works Project 9510 with a sweeping westbound right-turn lane, and two eastbound through lanes (i.e., not widening East Boronda Road between Main Street and San Juan Grade Road).
- **Intersection Configuration 2**: Same as intersection configuration 1 except replaced sweeping westbound right turn lane with a separate westbound right-turn lane without a "pork-chop" pedestrian island (i.e., smaller corner curb-return).
- **Intersection Configuration 3**: Same as intersection configuration 1 except replaced sweeping westbound right turn lane with a westbound shared through-right turn lane.
- **Intersection Configuration 4**: Same as intersection configuration 2, except eastbound approach includes a third eastbound through lane, and the southbound approach includes a shared through-right lane, through lane and two left turn lanes.
- **Intersection Configuration 5**: Same as intersection configuration 3, except eastbound approach includes a third eastbound through lane and the southbound approach includes a shared through right lane, through lane and two left turn lanes.

FORECAST METHOD

The AM and PM peak hour intersection turning movement forecasts were developed based on the guidelines published in *National Cooperative Highway Research Program (NCHRP) Report 255*[1], which were applied to refine the raw model forecasts. This method uses the difference between counts and model volumes and adjusts the existing volume to provide reasonable future forecasts. The Year 2030 Current General Plan Conditions for the five (5) intersection configurations described above are presented in **Figure 1**.

LEVEL OF SERVICE METHOD

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions.

[1] National Cooperative Highway Research Program (NCHRP). *Report 255: Highway Traffic Data for Urbanized Area Project Planning and Design.* Washington, D.C.: National Academy Press, 1982.

Signalized Intersections

The LOS method for signalized intersections approved by the City of Salinas analyzes intersection operations based on average control vehicular delay, as described in Chapter 16 of the *2000 Highway Capacity Manual* (*HCM*) by the Transportation Research Board. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using Synchro analysis software and is correlated to a LOS designation as shown in **Table 1**.

The level of service standard (i.e., minimum acceptable operations) for signalized intersections in the City of Salinas is LOS D.

TABLE 1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS USING AVERAGE CONTROL VEHICULAR DELAY

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/ or short cycle lengths.	> 10.0 and ≤ 20.0
C	Operations with average delays resulting from fair progression and/ or longer cycle lengths. Individual cycle failures begin to appear.	> 20.0 and ≤ 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	> 35.0 and ≤ 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 and ≤ 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2000.

YEAR 2030 CURRENT GENERAL PLAN INTERSECTION LEVELS OF SERVICE

Year 2030 Current General Plan intersection lane configurations, signal timings, and peak-hour turning movement traffic volumes were used to determine the levels of service. The results are presented in **Table 2**. The corresponding calculation sheets are attached.

The East Boronda Road intersection with San Juan Grade Road will operate at an unacceptable LOS F during the PM peak hour in Year 2030. The intersection LOS can be improved to “D” if East Boranda Road is widened to six (6) lanes through the San Juan Grade intersection.

FEHR & PEERS
TRANSPORTATION CONSULTANTS

TABLE 2
YEAR 2030 INTERSECTION LEVELS OF SERVICE

Intersection Configuration Description	Peak Hour[1]	5-Lane E. Boronda Road[2]		6-Lane E. Boronda Road[3]	
		Delay[4]	LOS[5]	Delay[4]	LOS[5]
Separate Right-Turn Lane with Large Pedestrian "Pork Chop" Island	AM	34.4	C	33.9	C
	PM	**121.0**	**F**	50.1	D
Separate Right-Turn Lane	AM	34.4	C	33.9	C
	PM	**121.0**	**F**	50.1	D
Shared Through-Right Turn Lane	AM	45.3	D	45.1	D
	PM	**122.4**	**F**	51.5	D

Notes:

[1] AM = morning weekday peak-hour, PM = evening weekday peak-hour

[2] East Boronda Road is a 5-lane divided arterial between Main Street and San Juan Grade Road

[3] East Boronda Road is a 6-lane divided arterial between Main Street and San Juan Grade Road

[4] Whole intersection weighted average control delay expressed in seconds per vehicle for signalized intersections using methodology described in the 2000 *Highway Capacity Manual*. LOS calculations conducted using the Synchro level of service analysis software package.

[5] LOS = Level of service

Bold text indicates unacceptable operations by City of Salinas standards (LOS E or worse).

Source: Fehr & Peers, April 2010.

YEAR 2030 CURRENT GENERAL PLAN INTERSECTION STORAGE POCKET LENGHTS

The Synchro files were converted to SimTraffic, a micro-simulation tool used to calculate vehicle storage requirements at intersections. **Figure 1** shows the storage pocket estimates (calculated in feet) for the left and right turn lanes at the East Boronda Road / San Juan Grade Road intersection. The corresponding calculation sheets are attached.

Left turn storage pockets are typically sized to the greater of the maximum queue of the left turn movement or through movement queue. However, during the AM and PM peak hours, the left-turn lane will be blocked by the through vehicles (westbound in AM peak hour and eastbound in PM peak hour) with maximum queues greater than 600 feet in the AM peak hour westbound directions and greater than 1,000 feet in the PM peak hour eastbound direction. Using the typical approach would yield excessively long left-turn storage pockets. To avoid excessively long pocket lengths, the left turn storage pockets were estimated using the average queue distance (based on average of five (5) micro-simulation runs) plus the deceleration distance at 30 miles per hour (mph). In other words, on average vehicles will be able to decelerate from 30 mph and stop at the back of the average queue for the left turn movement within the length of the storage pocket. At 30 mph the Caltrans *Highway Design Manual* (HDM) specifies an approximate deceleration distance of 235 feet and the estimated average storage pocket length is approximately 100 to 200 feet under the five intersection configurations for the left turn approaches. Thus, the left turn storage pockets are estimated to be 350 to 400 feet.

The 250 foot right-turn lane storage pockets were sized for vehicles to merge across the bicycle lane and slow within the length of the storage pocket from 30 mile per hour (i.e., right-turn vehicles will begin to decelerate prior to the storage pocket). On East Boronda Road, the through movement queue will block the right-turn lane during the red phase, but maintain separation from

the through vehicles as the right turn vehicles slow to make the right turn during the green phase. The Salinas retail center driveway should be placed more than 400 feet east of the East Boronda Road and San Juan Grade Road intersection to accommodate the right turn lane storage distance and lane taper.

BICYCLE LANE TREATMENTS

Issues for pedestrians and bicyclist at intersections are typically focused on long crossing distances, turning conflicts, and high vehicle speeds. The widening of the East Boronda Road / San Juan Grade Road intersection can exacerbate these conditions. The *California Manual of Uniform Traffic Control Devices* (CAMUTCD) provides guidance on striping bicycle lanes at intersections. **Figure 2** illustrates bicycle lane treatments that clarify right-of-way, manage vehicle turning speeds and minimize the crossing distance to the extent possible for the westbound approach. The advantages and disadvantages of each treatment are described in **Table 3**.

TABLE 3
BICYCLE LANE TREATMENTS WITH AND WITHOUT A RIGHT-TURN LANE
(EAST BORONDA ROAD AND SAN JUAN GRADE ROAD INTERSECTION)

Description	Advantages	Disadvantages
Sweeping Right-Turn Lane with Large Pedestrian Island	• Right-turn lane vehicles do not conflict with bicyclist at intersection. • Shorter pedestrian crossing distance of east leg than separate right-turn lane at intersection.	• Vehicles enter San Juan Grade Road at higher speeds. • Pedestrians crossing of right-turn lane is uncontrolled
Separate Right Turn Lane (Recommended)	• Guides bicyclist to correct position at intersections with a separate right-turn lane. • Encourages motorist maneuvering into the dedicated right-turn lane to look for and yield to bicyclists. • Defines the transition point for both bicyclist and motorists. • Minimizes conflict between right-turn vehicles and through movement bicyclist. • Right-turn lane vehicles do not conflict with bicyclist at intersection.	• For long right-turn lanes, bicyclist may be overtaken on both sides by motorists. • On high-speed facilities, a long transition area is needed, increasing the length of the potential conflict area.
Shared Through-Right Lane	• Encourages motorist maneuvering into the shared lane to look for and yield to bicyclist. • Defines the transition point for both bicyclist and motorists. • Right turn vehicle speeds lower than sweeping right turn. • Shorter pedestrian crossing distance of east leg than separate right-turn lane at intersection.	• Right hooking conflict between right-turn vehicles and through movement bicyclist not addressed.

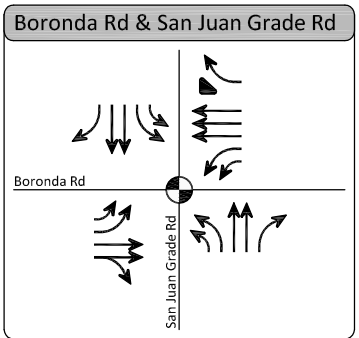
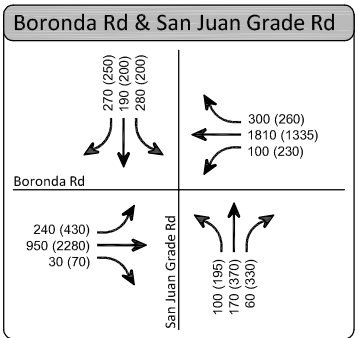
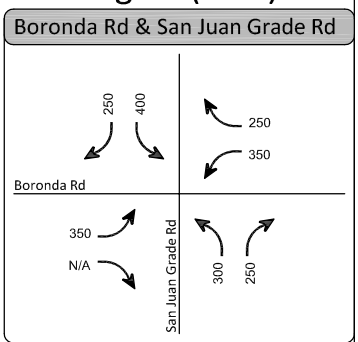
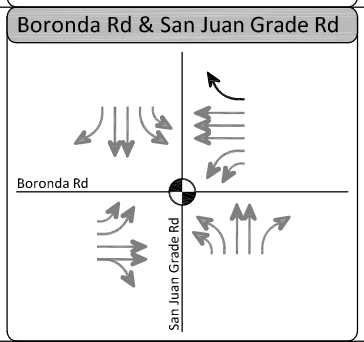
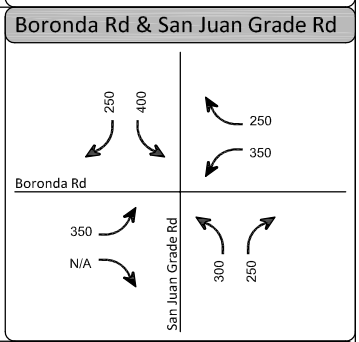
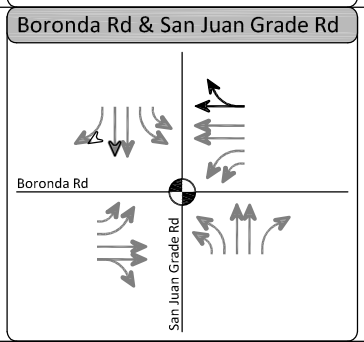
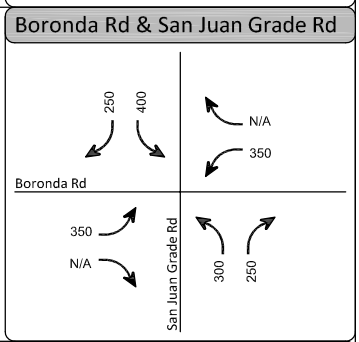
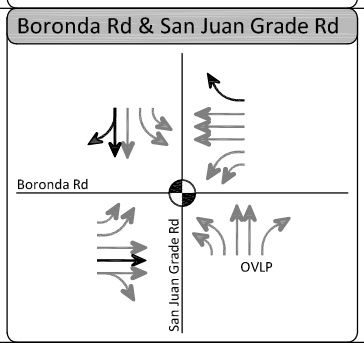
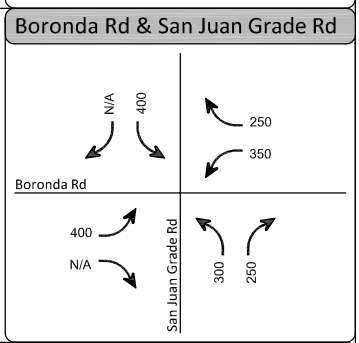
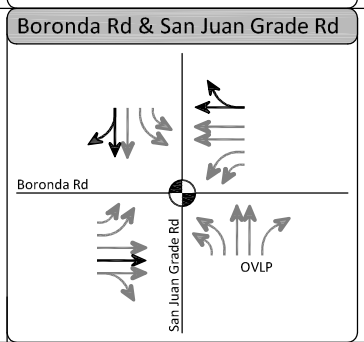
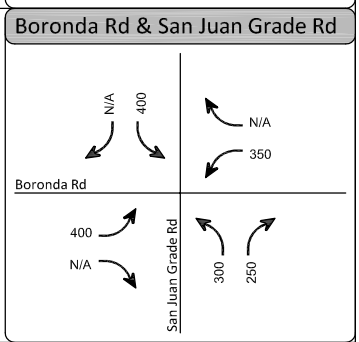
Source: Fehr & Peers, April 2010.

FEHR & PEERS
TRANSPORTATION CONSULTANTS

CONCLUSION

The separate right-turn lane without a pedestrian pork-chop island and bicycle lane meets City of Salinas level of service standards in Year 2030 with Current General Plan Conditions. This separate right-turn lane with a bicycle lane clarifies right-of-way, manages vehicle turning speeds and minimizes the crossing distance to the extent possible for the westbound approach.

Attachments

Intersection Configuration Description	Geometry	Forecast Volumes	Storage Pocket Lengths (Feet)
1. Current city design (Project 9510) with sweeping westbound right-turn lane			
2. Current city design with westbound right-turn lane		Same as Intersection Configuration #1	
3. Current city design with westbound shared through-right lane		Same as Intersection Configuration #1	
4. 6-Lane E. Boronda Rd between Main St & San Juan Grade Rd with westbound right-turn lane		Same as Intersection Configuration #1	
5. 6-Lane E. Boronda Rd between Main St & San Juan Grade Rd with westbound shared through-right lane		Same as Intersection Configuration #1	

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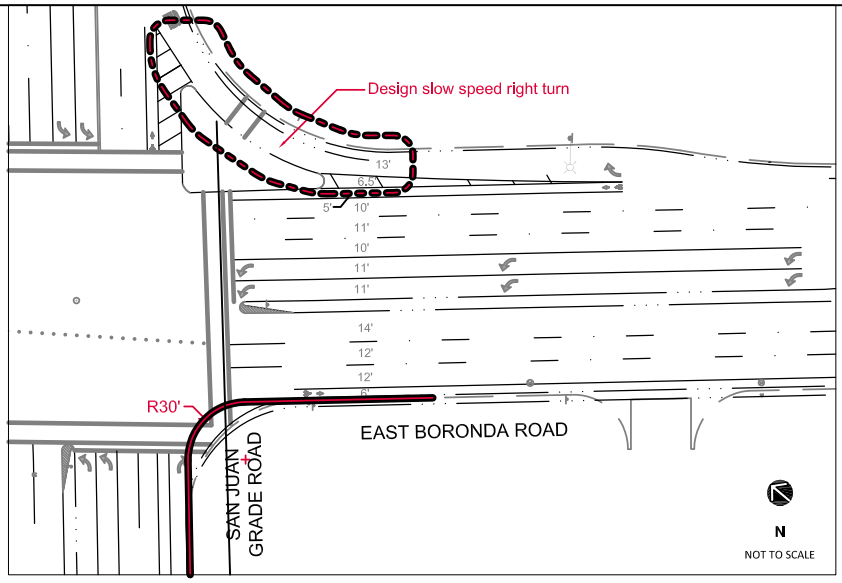
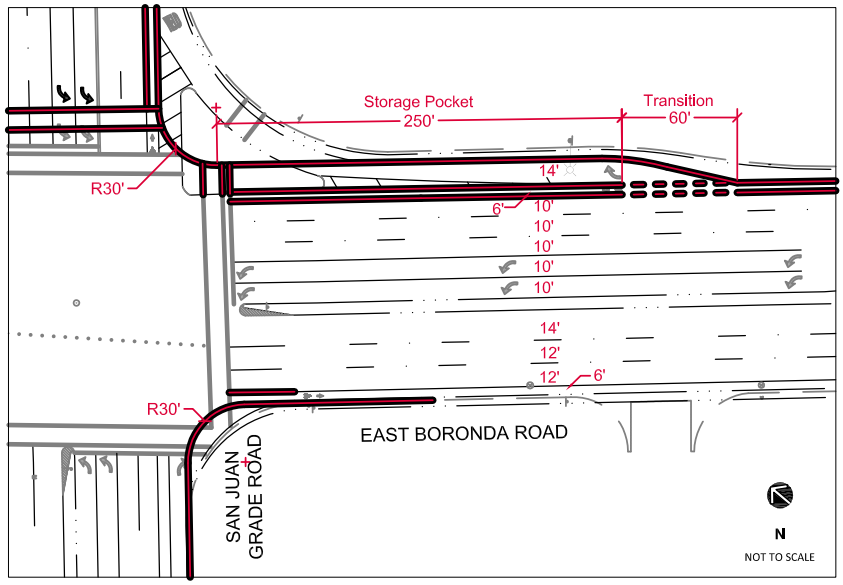
Year 2030 Current General Plan Conditions
Geometry, Lenghts, Volumes, and Storage Pocket

Apr 14, 2010
\\Fpsj1\data\Projects_SJ10_Projects\SJ10_1154_Salinas_Lowes\Data\SJG_Boronda_Improvement\Striping Plan_KLS_2010-03-12.dwg

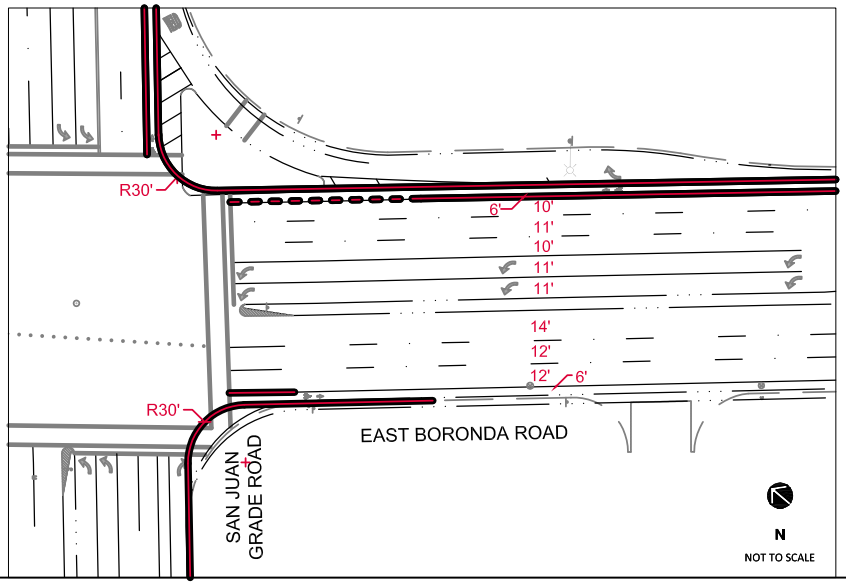
Figure 1



Current City Design (Project 9510) with sweeping west bound right-turn lane



Current City Design with west bound right-turn lane



Current City Design with west bound shared through-right lane

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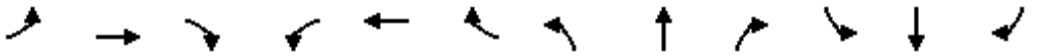
Bicycle Lane Treatments With & Without Right-Turn Lanes

Figure 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	950	30	100	1810	300	100	170	60	280	190	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.96
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	1.00		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	3520		3433	5085	1540	3433	3539	1523	3433	3539	1526
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	3520		3433	5085	1540	3433	3539	1523	3433	3539	1526
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	255	1011	32	106	1926	319	106	181	64	298	202	287
RTOR Reduction (vph)	0	2	0	0	0	168	0	0	55	0	0	118
Lane Group Flow (vph)	255	1041	0	106	1926	151	106	181	9	298	202	169
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	10.1	52.3		7.2	49.4	49.4	7.3	14.9	14.9	12.6	20.2	20.2
Effective Green, g (s)	10.1	52.3		7.2	49.4	49.4	7.3	14.9	14.9	12.6	20.2	20.2
Actuated g/C Ratio	0.09	0.47		0.06	0.45	0.45	0.07	0.13	0.13	0.11	0.18	0.18
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	312	1659		223	2263	685	226	475	204	390	644	278
v/s Ratio Prot	c0.07	c0.30		0.03	c0.38		0.03	0.05		c0.09	0.06	
v/s Ratio Perm						0.10			0.01			c0.11
v/c Ratio	0.82	0.63		0.48	0.85	0.22	0.47	0.38	0.04	0.76	0.31	0.61
Uniform Delay, d1	49.5	22.0		50.1	27.5	19.0	50.0	43.8	41.8	47.8	39.4	41.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.4	0.8		0.6	3.3	0.2	0.6	0.5	0.1	7.8	0.3	3.7
Delay (s)	64.0	22.8		50.7	30.8	19.1	50.5	44.4	41.9	55.6	39.7	45.5
Level of Service	E	C		D	C	B	D	D	D	E	D	D
Approach Delay (s)		30.9			30.1			45.8			47.8	
Approach LOS		C			C			D			D	

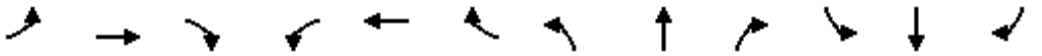
Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	T	R	L	L
Maximum Queue (ft)	197	206	393	436	80	89	564	641	709	375	66	95
Average Queue (ft)	112	118	217	251	24	32	298	340	370	72	23	41
95th Queue (ft)	185	194	347	379	59	71	496	571	613	313	54	78
Link Distance (ft)			1492	1492			821	821	821			
Upstream Blk Time (%)								0	0			
Queuing Penalty (veh)								0	1			
Storage Bay Dist (ft)	600	600			600	600				350	250	250
Storage Blk Time (%)							0		8	0		
Queuing Penalty (veh)							0		23	0		

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	112	128	65	169	194	126	135	232
Average Queue (ft)	49	64	27	98	119	51	67	119
95th Queue (ft)	95	111	55	156	177	96	116	202
Link Distance (ft)	1328	1328				961	961	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			350	400	400			250
Storage Blk Time (%)								0
Queuing Penalty (veh)								0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	950	30	100	1810	300	100	170	60	280	190	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.96
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	1.00		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	3520		3433	5085	1540	3433	3539	1523	3433	3539	1526
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	3520		3433	5085	1540	3433	3539	1523	3433	3539	1526
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	255	1011	32	106	1926	319	106	181	64	298	202	287
RTOR Reduction (vph)	0	2	0	0	0	168	0	0	55	0	0	118
Lane Group Flow (vph)	255	1041	0	106	1926	151	106	181	9	298	202	169
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	10.1	52.3		7.2	49.4	49.4	7.3	14.9	14.9	12.6	20.2	20.2
Effective Green, g (s)	10.1	52.3		7.2	49.4	49.4	7.3	14.9	14.9	12.6	20.2	20.2
Actuated g/C Ratio	0.09	0.47		0.06	0.45	0.45	0.07	0.13	0.13	0.11	0.18	0.18
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	312	1659		223	2263	685	226	475	204	390	644	278
v/s Ratio Prot	c0.07	c0.30		0.03	c0.38		0.03	0.05		c0.09	0.06	
v/s Ratio Perm						0.10			0.01			c0.11
v/c Ratio	0.82	0.63		0.48	0.85	0.22	0.47	0.38	0.04	0.76	0.31	0.61
Uniform Delay, d1	49.5	22.0		50.1	27.5	19.0	50.0	43.8	41.8	47.8	39.4	41.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.4	0.8		0.6	3.3	0.2	0.6	0.5	0.1	7.8	0.3	3.7
Delay (s)	64.0	22.8		50.7	30.8	19.1	50.5	44.4	41.9	55.6	39.7	45.5
Level of Service	E	C		D	C	B	D	D	D	E	D	D
Approach Delay (s)		30.9			30.1			45.8			47.8	
Approach LOS		C			C			D			D	

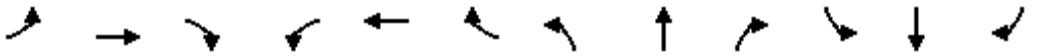
Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	T	R	L	L
Maximum Queue (ft)	201	213	381	417	87	101	554	674	716	375	73	89
Average Queue (ft)	110	129	210	244	29	42	322	366	401	139	25	41
95th Queue (ft)	193	207	335	373	68	82	488	564	621	373	58	76
Link Distance (ft)			1492	1492			822	822	822			
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (ft)	600	600			600	600				350	250	250
Storage Blk Time (%)							0		9	0		
Queuing Penalty (veh)							0		28	1		

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	111	131	62	201	221	129	126	227
Average Queue (ft)	43	70	25	105	126	55	69	126
95th Queue (ft)	88	118	51	173	195	104	115	211
Link Distance (ft)	1328	1328				962	962	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			350	400	400			250
Storage Blk Time (%)								0
Queuing Penalty (veh)								0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	950	30	100	1810	300	100	170	60	280	190	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
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		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3520		3433	4958		3433	3539	1523	3433	3539	1526
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3520		3433	4958		3433	3539	1523	3433	3539	1526
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	255	1011	32	106	1926	319	106	181	64	298	202	287
RTOR Reduction (vph)	0	2	0	0	16	0	0	0	55	0	0	118
Lane Group Flow (vph)	255	1041	0	106	2229	0	106	181	9	298	202	169
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	10.1	52.3		7.2	49.4		7.3	14.9	14.9	12.6	20.2	20.2
Effective Green, g (s)	10.1	52.3		7.2	49.4		7.3	14.9	14.9	12.6	20.2	20.2
Actuated g/C Ratio	0.09	0.47		0.06	0.45		0.07	0.13	0.13	0.11	0.18	0.18
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	312	1659		223	2207		226	475	204	390	644	278
v/s Ratio Prot	c0.07	c0.30		0.03	c0.45		0.03	0.05		c0.09	0.06	
v/s Ratio Perm									0.01			c0.11
v/c Ratio	0.82	0.63		0.48	1.01		0.47	0.38	0.04	0.76	0.31	0.61
Uniform Delay, d1	49.5	22.0		50.1	30.8		50.0	43.8	41.8	47.8	39.4	41.8
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	14.4	0.8		0.6	21.7		0.6	0.5	0.1	7.8	0.3	3.7
Delay (s)	64.0	22.8		50.7	52.5		50.5	44.4	41.9	55.6	39.7	45.5
Level of Service	E	C		D	D		D	D	D	E	D	D
Approach Delay (s)		30.9			52.4			45.8			47.8	
Approach LOS		C			D			D			D	

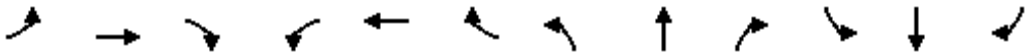
Intersection Summary			
HCM Average Control Delay	45.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	TR	L	L	T
Maximum Queue (ft)	211	222	397	419	88	624	842	891	875	65	96	109
Average Queue (ft)	107	118	209	244	23	112	752	783	790	24	43	46
95th Queue (ft)	177	192	344	368	59	441	1033	1039	1003	55	81	89
Link Distance (ft)			1492	1492			821	821	821			1328
Upstream Blk Time (%)							25	26	31			
Queuing Penalty (veh)							181	189	230			
Storage Bay Dist (ft)	600	600			600	600				250	250	
Storage Blk Time (%)						0	35					
Queuing Penalty (veh)						0	35					

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	134	64	192	222	125	171	206
Average Queue (ft)	62	26	106	123	53	70	83
95th Queue (ft)	110	54	172	190	99	129	154
Link Distance (ft)	1328				961	961	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		350	400	400			250
Storage Blk Time (%)							0
Queuing Penalty (veh)							0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	950	30	100	1810	300	100	170	60	280	190	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5058		3433	5085	1540	3433	3539	1548	3433	3159	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5058		3433	5085	1540	3433	3539	1548	3433	3159	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	255	1011	32	106	1926	319	106	181	64	298	202	287
RTOR Reduction (vph)	0	2	0	0	0	168	0	0	23	0	118	0
Lane Group Flow (vph)	255	1041	0	106	1926	151	106	181	41	298	371	0
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	10.1	52.3		7.2	49.4	49.4	7.3	15.1	22.3	12.6	20.4	
Effective Green, g (s)	10.1	52.3		7.2	49.4	49.4	7.3	15.1	22.3	12.6	20.4	
Actuated g/C Ratio	0.09	0.47		0.06	0.44	0.44	0.07	0.14	0.20	0.11	0.18	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	2.0	2.0	3.0	
Lane Grp Cap (vph)	312	2379		222	2259	684	225	481	394	389	580	
v/s Ratio Prot	c0.07	c0.21		0.03	c0.38		0.03	0.05	0.01	c0.09	c0.12	
v/s Ratio Perm						0.10			0.02			
v/c Ratio	0.82	0.44		0.48	0.85	0.22	0.47	0.38	0.10	0.77	0.64	
Uniform Delay, d1	49.6	19.6		50.2	27.6	19.0	50.1	43.8	36.3	47.9	42.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.4	0.1		0.6	3.3	0.2	0.6	0.5	0.0	7.9	2.4	
Delay (s)	64.1	19.8		50.8	31.0	19.2	50.7	44.3	36.3	55.8	44.4	
Level of Service	E	B		D	C	B	D	D	D	E	D	
Approach Delay (s)		28.5			30.3			44.7			48.7	
Approach LOS		C			C			D			D	

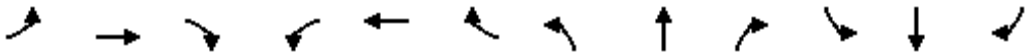
Intersection Summary			
HCM Average Control Delay	33.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	30.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	275	298	230	258	288	100	185	625	710	778	375	80
Average Queue (ft)	149	167	121	146	178	27	42	366	410	453	139	29
95th Queue (ft)	283	295	201	229	260	66	81	584	647	718	371	66
Link Distance (ft)			1504	1504	1504			822	822	822		
Upstream Blk Time (%)								0	0	0		
Queuing Penalty (veh)								0	0	3		
Storage Bay Dist (ft)	600	600				600	600				350	250
Storage Blk Time (%)							0	1		13	0	
Queuing Penalty (veh)							0	1		41	1	

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	TR
Maximum Queue (ft)	101	126	143	71	208	226	222	297
Average Queue (ft)	45	45	71	27	118	138	86	171
95th Queue (ft)	85	95	120	57	191	210	167	271
Link Distance (ft)		1329	1329				963	963
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250			400	450	450		
Storage Blk Time (%)								
Queuing Penalty (veh)								



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	950	30	100	1810	300	100	170	60	280	190	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5058		3433	4957		3433	3539	1548	3433	3159	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5058		3433	4957		3433	3539	1548	3433	3159	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	255	1011	32	106	1926	319	106	181	64	298	202	287
RTOR Reduction (vph)	0	2	0	0	16	0	0	0	23	0	118	0
Lane Group Flow (vph)	255	1041	0	106	2229	0	106	181	41	298	371	0
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	10.1	52.3		7.2	49.4		7.3	15.1	22.3	12.6	20.4	
Effective Green, g (s)	10.1	52.3		7.2	49.4		7.3	15.1	22.3	12.6	20.4	
Actuated g/C Ratio	0.09	0.47		0.06	0.44		0.07	0.14	0.20	0.11	0.18	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0	2.0	2.0	3.0	
Lane Grp Cap (vph)	312	2379		222	2202		225	481	394	389	580	
v/s Ratio Prot	c0.07	c0.21		0.03	c0.45		0.03	0.05	0.01	c0.09	c0.12	
v/s Ratio Perm									0.02			
v/c Ratio	0.82	0.44		0.48	1.01		0.47	0.38	0.10	0.77	0.64	
Uniform Delay, d1	49.6	19.6		50.2	30.9		50.1	43.8	36.3	47.9	42.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	14.4	0.1		0.6	22.3		0.6	0.5	0.0	7.9	2.4	
Delay (s)	64.1	19.8		50.8	53.2		50.7	44.3	36.3	55.8	44.4	
Level of Service	E	B		D	D		D	D	D	E	D	
Approach Delay (s)		28.5			53.1			44.7			48.7	
Approach LOS		C			D			D			D	

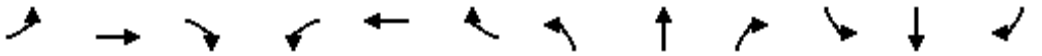
Intersection Summary			
HCM Average Control Delay	45.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	30.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	TR	L	L
Maximum Queue (ft)	196	196	237	282	311	81	674	854	892	875	71	90
Average Queue (ft)	107	116	124	148	177	22	127	784	813	814	27	45
95th Queue (ft)	177	185	213	243	272	58	497	972	976	954	58	81
Link Distance (ft)			1504	1504	1504			821	821	821		
Upstream Blk Time (%)								28	27	32		
Queuing Penalty (veh)								206	201	237		
Storage Bay Dist (ft)	600	600				650	650				250	250
Storage Blk Time (%)							0	37				
Queuing Penalty (veh)							0	37				

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	TR
Maximum Queue (ft)	111	132	62	187	212	222	326
Average Queue (ft)	50	64	27	115	132	91	171
95th Queue (ft)	88	112	53	185	199	177	281
Link Distance (ft)	1329	1329				963	963
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			400	450	450		
Storage Blk Time (%)							
Queuing Penalty (veh)							



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	2280	70	230	1335	260	195	370	330	200	200	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.96
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	1.00		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	3521		3433	5085	1536	3433	3539	1526	3433	3539	1517
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	3521		3433	5085	1536	3433	3539	1526	3433	3539	1517
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	457	2426	74	245	1420	277	207	394	351	213	213	266
RTOR Reduction (vph)	0	2	0	0	0	124	0	0	145	0	0	226
Lane Group Flow (vph)	457	2498	0	245	1420	153	207	394	206	213	213	40
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	21.6	66.3		12.2	56.9	56.9	11.5	23.6	23.6	8.0	20.1	20.1
Effective Green, g (s)	21.6	66.3		12.2	56.9	56.9	11.5	23.6	23.6	8.0	20.1	20.1
Actuated g/C Ratio	0.16	0.49		0.09	0.42	0.42	0.09	0.18	0.18	0.06	0.15	0.15
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	553	1741		312	2158	652	294	623	269	205	530	227
v/s Ratio Prot	c0.13	c0.71		0.07	0.28		0.06	0.11		c0.06	0.06	
v/s Ratio Perm						0.10			c0.13			0.03
v/c Ratio	0.83	1.44		0.79	0.66	0.24	0.70	0.63	0.77	1.04	0.40	0.18
Uniform Delay, d1	54.4	33.9		59.7	30.8	24.7	59.6	51.2	52.6	63.0	51.6	49.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.4	199.1		11.3	0.7	0.2	6.1	2.1	12.2	73.5	0.5	0.4
Delay (s)	63.8	233.0		71.0	31.6	24.9	65.8	53.3	64.8	136.5	52.1	50.1
Level of Service	E	F		E	C	C	E	D	E	F	D	D
Approach Delay (s)		206.9			35.6			60.3			77.3	
Approach LOS		F			D			E			E	

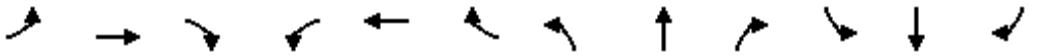
Intersection Summary			
HCM Average Control Delay	121.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	134.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	T	R	L	L
Maximum Queue (ft)	215	625	1520	1518	190	185	390	421	466	285	165	176
Average Queue (ft)	118	291	1503	1502	91	104	210	233	257	27	76	91
95th Queue (ft)	191	688	1516	1518	157	169	325	355	390	179	135	149
Link Distance (ft)			1489	1489			826	826	826			
Upstream Blk Time (%)			26	26								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	600	600			400	400				350	250	250
Storage Blk Time (%)		0	41				0		1	0		
Queuing Penalty (veh)		0	177				0		3	0		

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	219	233	306	264	272	151	163	214
Average Queue (ft)	131	146	133	133	153	69	84	109
95th Queue (ft)	204	225	247	255	265	122	137	187
Link Distance (ft)	1333	1333				966	966	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			350	400	400			250
Storage Blk Time (%)	0		0	0	0			0
Queuing Penalty (veh)	0		0	0	0			0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	2280	70	230	1335	260	195	370	330	200	200	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.96	1.00	1.00	0.96
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	1.00		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	3521		3433	5085	1536	3433	3539	1526	3433	3539	1517
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	3521		3433	5085	1536	3433	3539	1526	3433	3539	1517
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	457	2426	74	245	1420	277	207	394	351	213	213	266
RTOR Reduction (vph)	0	2	0	0	0	124	0	0	145	0	0	226
Lane Group Flow (vph)	457	2498	0	245	1420	153	207	394	206	213	213	40
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	21.6	66.3		12.2	56.9	56.9	11.5	23.6	23.6	8.0	20.1	20.1
Effective Green, g (s)	21.6	66.3		12.2	56.9	56.9	11.5	23.6	23.6	8.0	20.1	20.1
Actuated g/C Ratio	0.16	0.49		0.09	0.42	0.42	0.09	0.18	0.18	0.06	0.15	0.15
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	553	1741		312	2158	652	294	623	269	205	530	227
v/s Ratio Prot	c0.13	c0.71		0.07	0.28		0.06	0.11		c0.06	0.06	
v/s Ratio Perm						0.10			c0.13			0.03
v/c Ratio	0.83	1.44		0.79	0.66	0.24	0.70	0.63	0.77	1.04	0.40	0.18
Uniform Delay, d1	54.4	33.9		59.7	30.8	24.7	59.6	51.2	52.6	63.0	51.6	49.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.4	199.1		11.3	0.7	0.2	6.1	2.1	12.2	73.5	0.5	0.4
Delay (s)	63.8	233.0		71.0	31.6	24.9	65.8	53.3	64.8	136.5	52.1	50.1
Level of Service	E	F		E	C	C	E	D	E	F	D	D
Approach Delay (s)		206.9			35.6			60.3			77.3	
Approach LOS		F			D			E			E	

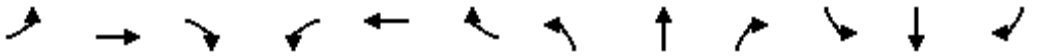
Intersection Summary			
HCM Average Control Delay	121.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	134.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	T	R	L	L
Maximum Queue (ft)	206	624	1518	1512	205	223	362	425	445	373	166	170
Average Queue (ft)	111	274	1500	1497	107	121	225	257	277	84	80	97
95th Queue (ft)	185	653	1537	1545	187	202	329	379	399	223	138	153
Link Distance (ft)			1489	1489			826	826	826			
Upstream Blk Time (%)			26	25								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	600	600			400	400				350	250	250
Storage Blk Time (%)		0	42				0		2	0		
Queuing Penalty (veh)		0	179				0		4	0		

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	R
Maximum Queue (ft)	236	261	273	320	338	200	156	235
Average Queue (ft)	135	163	126	192	210	77	84	114
95th Queue (ft)	214	239	231	350	363	166	136	195
Link Distance (ft)	1333	1333				966	966	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			350	400	400			250
Storage Blk Time (%)	0		0	0	1			0
Queuing Penalty (veh)	0		0	0	1			0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	2280	70	230	1335	260	195	370	330	200	200	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.95		0.97	0.91		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.96	1.00	1.00	0.96
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		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3521		3433	4937		3433	3539	1526	3433	3539	1517
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3521		3433	4937		3433	3539	1526	3433	3539	1517
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	457	2426	74	245	1420	277	207	394	351	213	213	266
RTOR Reduction (vph)	0	2	0	0	18	0	0	0	145	0	0	226
Lane Group Flow (vph)	457	2498	0	245	1679	0	207	394	206	213	213	40
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	21.6	66.3		12.2	56.9		11.5	23.6	23.6	8.0	20.1	20.1
Effective Green, g (s)	21.6	66.3		12.2	56.9		11.5	23.6	23.6	8.0	20.1	20.1
Actuated g/C Ratio	0.16	0.49		0.09	0.42		0.09	0.18	0.18	0.06	0.15	0.15
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	553	1741		312	2095		294	623	269	205	530	227
v/s Ratio Prot	c0.13	c0.71		0.07	0.34		0.06	0.11		c0.06	0.06	
v/s Ratio Perm									c0.13			0.03
v/c Ratio	0.83	1.44		0.79	0.80		0.70	0.63	0.77	1.04	0.40	0.18
Uniform Delay, d1	54.4	33.9		59.7	33.7		59.6	51.2	52.6	63.0	51.6	49.8
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	9.4	199.1		11.3	2.3		6.1	2.1	12.2	73.5	0.5	0.4
Delay (s)	63.8	233.0		71.0	36.0		65.8	53.3	64.8	136.5	52.1	50.1
Level of Service	E	F		E	D		E	D	E	F	D	D
Approach Delay (s)		206.9			40.4			60.3			77.3	
Approach LOS		F			D			E			E	

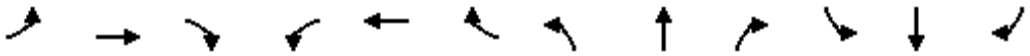
Intersection Summary			
HCM Average Control Delay	122.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	134.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	112.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	TR	L	L	T
Maximum Queue (ft)	198	625	1512	1508	178	200	515	548	586	165	192	256
Average Queue (ft)	113	290	1503	1500	98	114	291	350	404	83	97	139
95th Queue (ft)	181	677	1514	1521	166	184	438	504	556	144	158	220
Link Distance (ft)			1489	1489			826	826	826			1333
Upstream Blk Time (%)			26	24								
Queuing Penalty (veh)			0	0								
Storage Bay Dist (ft)	600	600			400	400				250	250	
Storage Blk Time (%)		0	42				1					0
Queuing Penalty (veh)		0	179				1					0

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	SB	SB	SB	SB	SB
Directions Served	T	R	L	L	T	T	R
Maximum Queue (ft)	265	256	303	319	309	231	153
Average Queue (ft)	154	122	186	205	96	86	75
95th Queue (ft)	238	220	359	375	327	197	128
Link Distance (ft)	1333				966	966	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		350	400	400			250
Storage Blk Time (%)			2	5			
Queuing Penalty (veh)			2	5			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	2280	70	230	1335	260	195	370	330	200	200	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	0.98	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		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5059		3433	5085	1536	3433	3539	1551	3433	3168	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5059		3433	5085	1536	3433	3539	1551	3433	3168	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	457	2426	74	245	1420	277	207	394	351	213	213	266
RTOR Reduction (vph)	0	2	0	0	0	123	0	0	1	0	169	0
Lane Group Flow (vph)	457	2498	0	245	1420	154	207	394	350	213	310	0
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot		Perm	Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases						8			2			
Actuated Green, G (s)	21.5	66.3		12.2	57.0	57.0	11.5	22.6	34.8	8.0	19.1	
Effective Green, g (s)	21.5	66.3		12.2	57.0	57.0	11.5	22.6	34.8	8.0	19.1	
Actuated g/C Ratio	0.16	0.50		0.09	0.43	0.43	0.09	0.17	0.26	0.06	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0	3.0	2.0	3.0	2.0	2.0	3.0	
Lane Grp Cap (vph)	555	2520		315	2178	658	297	601	475	206	455	
v/s Ratio Prot	c0.13	c0.49		0.07	0.28		0.06	0.11	c0.07	c0.06	0.10	
v/s Ratio Perm						0.10			0.16			
v/c Ratio	0.82	0.99		0.78	0.65	0.23	0.70	0.66	0.74	1.03	0.68	
Uniform Delay, d1	54.0	33.1		59.1	30.2	24.2	59.1	51.6	45.0	62.5	54.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.2	15.9		10.5	0.7	0.2	5.6	2.6	5.1	71.9	4.2	
Delay (s)	63.1	49.0		69.6	30.9	24.4	64.8	54.2	50.1	134.4	58.3	
Level of Service	E	D		E	C	C	E	D	D	F	E	
Approach Delay (s)		51.2			34.8			55.0			81.7	
Approach LOS		D			C			D			F	

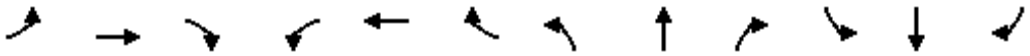
Intersection Summary			
HCM Average Control Delay	50.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	133.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	301	625	1507	1491	1493	202	217	399	448	517	374	160
Average Queue (ft)	187	343	1163	1180	1198	107	124	254	285	310	114	82
95th Queue (ft)	280	672	1707	1676	1665	179	195	368	401	441	287	142
Link Distance (ft)			1501	1501	1501			826	826	826		
Upstream Blk Time (%)			5	3	4							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	600	600				400	400				350	250
Storage Blk Time (%)		0	28					0		3	0	0
Queuing Penalty (veh)		0	120					0		7	0	0

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	L	T	TR
Maximum Queue (ft)	187	237	254	339	268	278	275	362
Average Queue (ft)	98	138	161	187	142	155	120	214
95th Queue (ft)	159	216	235	306	262	277	216	328
Link Distance (ft)		1333	1333				968	968
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250			400	450	450		
Storage Blk Time (%)	0	0		0				
Queuing Penalty (veh)	0	0		0				



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	430	2280	70	230	1335	260	195	370	330	200	200	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91		0.97	0.91		0.97	0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	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	
Frt	1.00	1.00		1.00	0.98		1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5059		3433	4937		3433	3539	1551	3433	3168	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5059		3433	4937		3433	3539	1551	3433	3168	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	457	2426	74	245	1420	277	207	394	351	213	213	266
RTOR Reduction (vph)	0	2	0	0	18	0	0	0	1	0	169	0
Lane Group Flow (vph)	457	2498	0	245	1679	0	207	394	350	213	310	0
Confl. Peds. (#/hr)			10			10			10			10
Confl. Bikes (#/hr)			10			10			10			10
Turn Type	Prot			Prot			Prot		pm+ov	Prot		
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Actuated Green, G (s)	21.5	66.3		12.2	57.0		11.5	22.6	34.8	8.0	19.1	
Effective Green, g (s)	21.5	66.3		12.2	57.0		11.5	22.6	34.8	8.0	19.1	
Actuated g/C Ratio	0.16	0.50		0.09	0.43		0.09	0.17	0.26	0.06	0.14	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0	3.0		2.0	3.0		2.0	3.0	2.0	2.0	3.0	
Lane Grp Cap (vph)	555	2520		315	2114		297	601	475	206	455	
v/s Ratio Prot	c0.13	c0.49		0.07	0.34		0.06	0.11	c0.07	c0.06	0.10	
v/s Ratio Perm									0.16			
v/c Ratio	0.82	0.99		0.78	0.79		0.70	0.66	0.74	1.03	0.68	
Uniform Delay, d1	54.0	33.1		59.1	33.0		59.1	51.6	45.0	62.5	54.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.2	15.9		10.5	2.1		5.6	2.6	5.1	71.9	4.2	
Delay (s)	63.1	49.0		69.6	35.1		64.8	54.2	50.1	134.4	58.3	
Level of Service	E	D		E	D		E	D	D	F	E	
Approach Delay (s)		51.2			39.5			55.0			81.7	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM Average Control Delay	51.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	133.1	Sum of lost time (s)	24.0
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

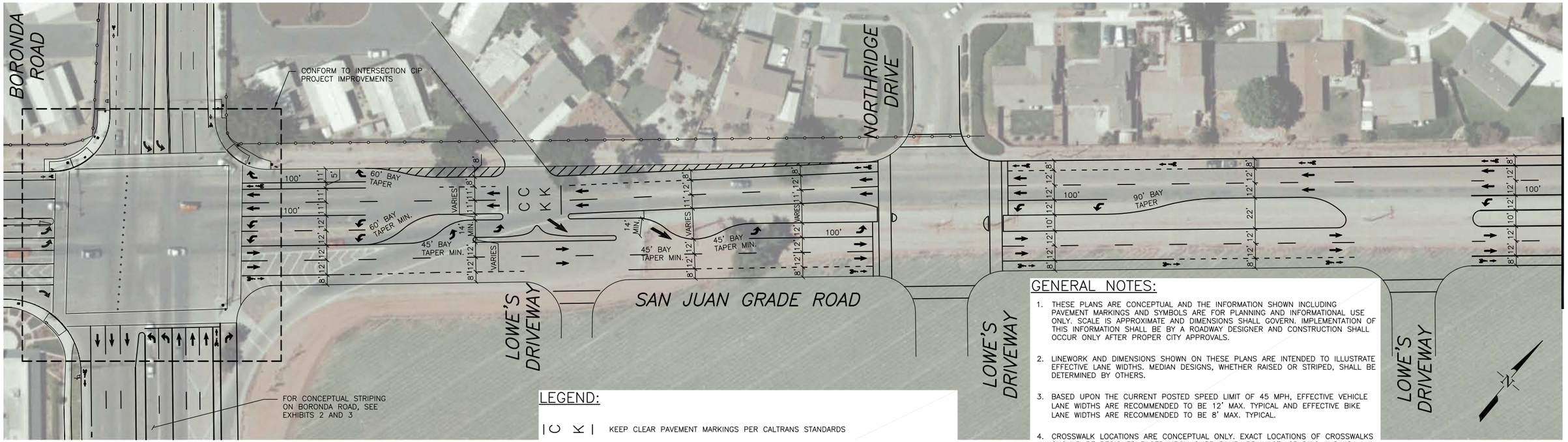
Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	TR	L	L
Maximum Queue (ft)	300	625	1502	1505	1514	182	392	569	665	728	157	182
Average Queue (ft)	182	306	1135	1148	1177	105	146	336	403	453	84	98
95th Queue (ft)	275	628	1734	1695	1684	173	288	506	601	641	143	155
Link Distance (ft)			1501	1501	1501			826	826	826		
Upstream Blk Time (%)			6	4	5				0	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (ft)	600	600				400	400				250	250
Storage Blk Time (%)		0	27				0	3				
Queuing Penalty (veh)		0	115				0	6				

Intersection: 9: Boronda Rd. & San Juan Grade Rd.

Movement	NB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	R	L	L	T	TR
Maximum Queue (ft)	239	249	305	324	333	236	402
Average Queue (ft)	135	150	180	195	210	109	199
95th Queue (ft)	206	222	294	336	349	197	320
Link Distance (ft)	1333	1333				968	968
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			400	450	450		
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

APPENDIX J:
EAST BORONDA ROAD AND SAN JUAN GRADE ROAD
CONCEPTUAL STRIPING PLANS

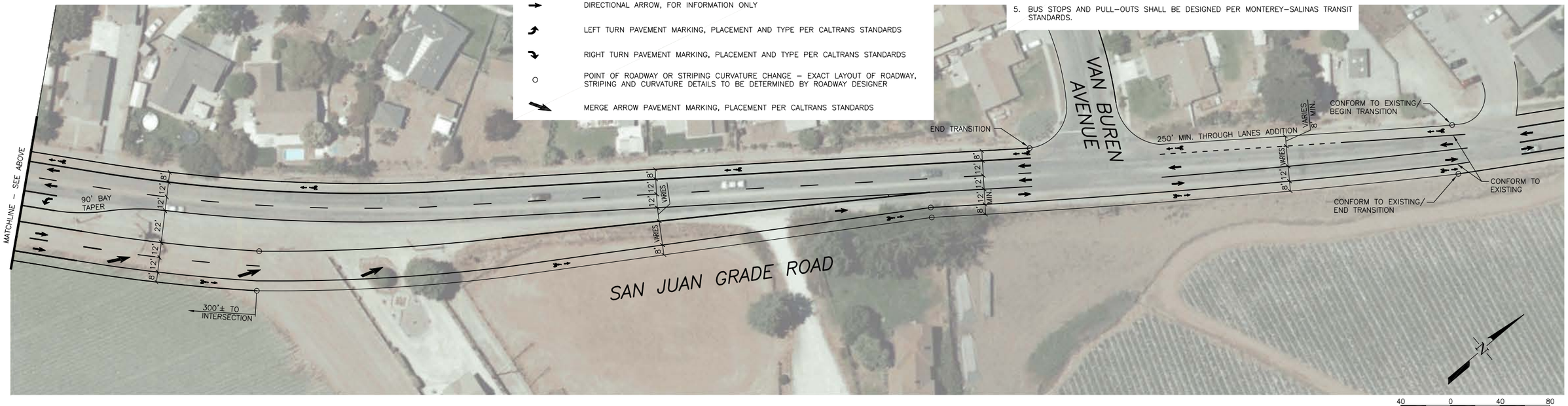


LEGEND:

- KEEP CLEAR PAVEMENT MARKINGS PER CALTRANS STANDARDS
- BICYCLE LANE PAVEMENT MARKING, PER CALTRANS STANDARDS, SPACING PER CAMUTCD
- DIRECTIONAL ARROW, FOR INFORMATION ONLY
- LEFT TURN PAVEMENT MARKING, PLACEMENT AND TYPE PER CALTRANS STANDARDS
- RIGHT TURN PAVEMENT MARKING, PLACEMENT AND TYPE PER CALTRANS STANDARDS
- POINT OF ROADWAY OR STRIPING CURVATURE CHANGE – EXACT LAYOUT OF ROADWAY, STRIPING AND CURVATURE DETAILS TO BE DETERMINED BY ROADWAY DESIGNER
- MERGE ARROW PAVEMENT MARKING, PLACEMENT PER CALTRANS STANDARDS

GENERAL NOTES:

1. THESE PLANS ARE CONCEPTUAL AND THE INFORMATION SHOWN INCLUDING PAVEMENT MARKINGS AND SYMBOLS ARE FOR PLANNING AND INFORMATIONAL USE ONLY. SCALE IS APPROXIMATE AND DIMENSIONS SHALL GOVERN. IMPLEMENTATION OF THIS INFORMATION SHALL BE BY A ROADWAY DESIGNER AND CONSTRUCTION SHALL OCCUR ONLY AFTER PROPER CITY APPROVALS.
2. LINEWORK AND DIMENSIONS SHOWN ON THESE PLANS ARE INTENDED TO ILLUSTRATE EFFECTIVE LANE WIDTHS. MEDIAN DESIGNS, WHETHER RAISED OR STRIPED, SHALL BE DETERMINED BY OTHERS.
3. BASED UPON THE CURRENT POSTED SPEED LIMIT OF 45 MPH, EFFECTIVE VEHICLE LANE WIDTHS ARE RECOMMENDED TO BE 12' MAX. TYPICAL AND EFFECTIVE BIKE LANE WIDTHS ARE RECOMMENDED TO BE 8' MAX. TYPICAL.
4. CROSSWALK LOCATIONS ARE CONCEPTUAL ONLY. EXACT LOCATIONS OF CROSSWALKS SHOULD BE DESIGNED BASED UPON CURB RAMP, DRAINAGE, GRADING AND ADA DESIGN CONSIDERATIONS TO BE PERFORMED BY OTHERS. TWO DIRECTIONAL CURB RAMPS PER CORNER ARE RECOMMENDED.
5. BUS STOPS AND PULL–OUTS SHALL BE DESIGNED PER MONTEREY–SALINAS TRANSIT STANDARDS.



40 0 40 80
1" = 40' GRAPHIC SCALE

REVISIONS			
NO.	DESCRIPTION	DATE	BY

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Designed By: KC
Drawn By: DD/KC
Checked By: AO
Drawing No.: SJ10–1154
Date: SEPT. 2010

SALINAS (CLOVERFIELD) RETAIL CENTER
EXHIBIT 1
CONCEPTUAL STRIPING – SAN JUAN GRADE ROAD

SHEET 1 —OF— 3

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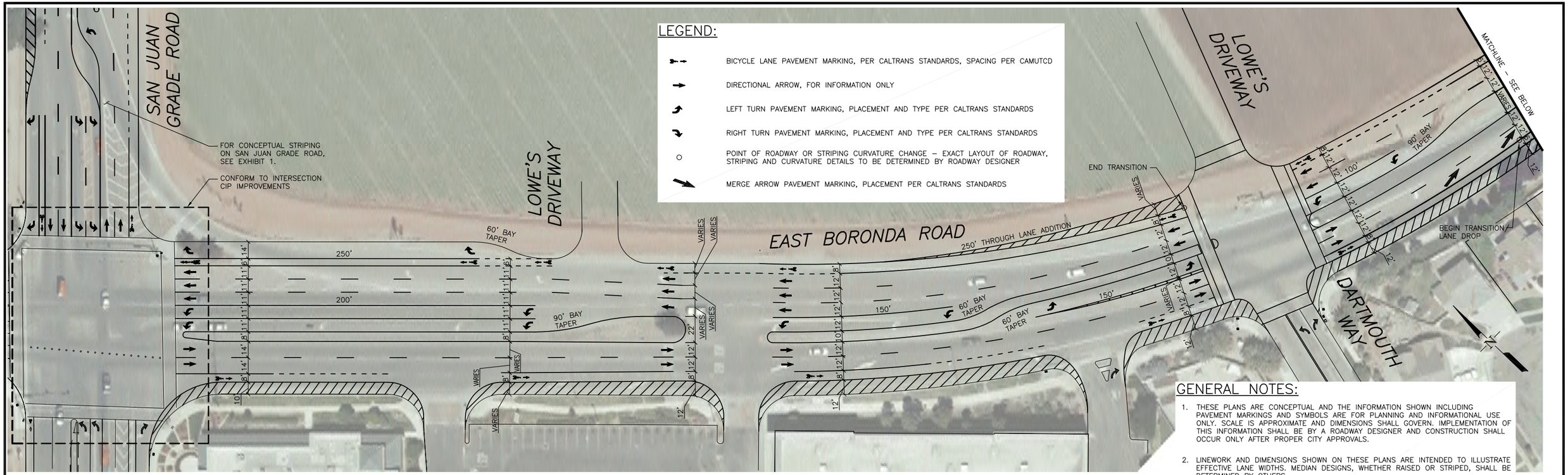
Oct 05, 2010



LEGEND:

- BICYCLE LANE PAVEMENT MARKING, PER CALTRANS STANDARDS, SPACING PER CAMUTCD
- DIRECTIONAL ARROW, FOR INFORMATION ONLY
- LEFT TURN PAVEMENT MARKING, PLACEMENT AND TYPE PER CALTRANS STANDARDS
- RIGHT TURN PAVEMENT MARKING, PLACEMENT AND TYPE PER CALTRANS STANDARDS
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GENERAL NOTES:

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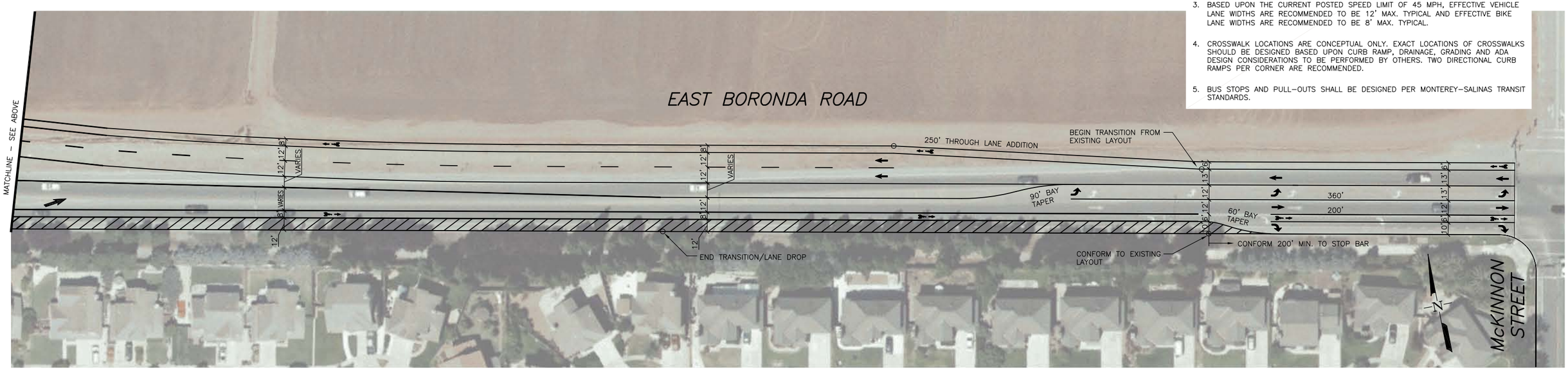
3. BASED UPON THE CURRENT POSTED SPEED LIMIT OF 45 MPH, EFFECTIVE VEHICLE LANE WIDTHS ARE RECOMMENDED TO BE 12' MAX. TYPICAL AND EFFECTIVE BIKE LANE WIDTHS ARE RECOMMENDED TO BE 8' MAX. TYPICAL.
4. CROSSWALK LOCATIONS ARE CONCEPTUAL ONLY. EXACT LOCATIONS OF CROSSWALKS SHOULD BE DESIGNED BASED UPON CURB RAMP, DRAINAGE, GRADING AND ADA DESIGN CONSIDERATIONS TO BE PERFORMED BY OTHERS. TWO DIRECTIONAL CURB RAMPS PER CORNER ARE RECOMMENDED.
5. BUS STOPS AND PULL–OUTS SHALL BE DESIGNED PER MONTEREY–SALINAS TRANSIT STANDARDS.



REVISIONS			
NO.	DESCRIPTION	DATE	BY

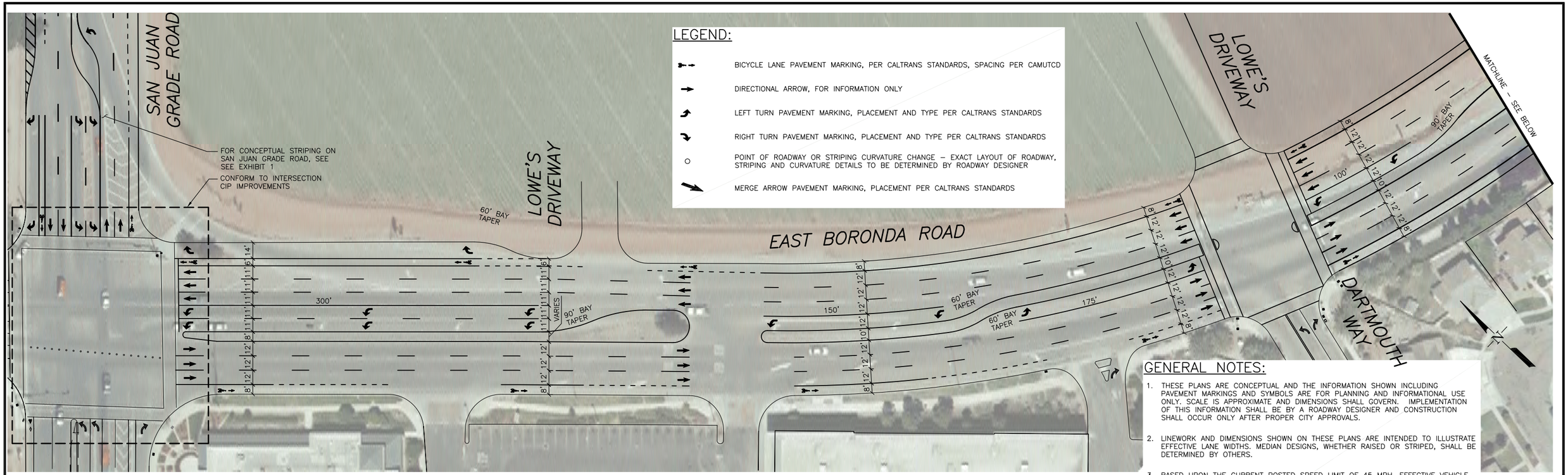
FEHR & PEERS
TRANSPORTATION CONSULTANTS

Designed By: KC
Drawn By: DD/KC
Checked By: AO
Drawing No.: SJ10–1154
Date: SEPT. 2010

SALINAS (CLOVERFIELD) RETAIL CENTER
EXHIBIT 2
CONCEPTUAL STRIPING – EAST BORONDA ROAD – INTERIM

SHEET 2 OF 3

Oct 04, 2010 CADD FILE: N:\Projects_SJ10_Projects\SJ10_1154_Salinas_Lowes\CAD\1154 intersection-sheet 2.dwg



LEGEND:

- BICYCLE LANE PAVEMENT MARKING, PER CALTRANS STANDARDS, SPACING PER CAMUTCD
- DIRECTIONAL ARROW, FOR INFORMATION ONLY
- LEFT TURN PAVEMENT MARKING, PLACEMENT AND TYPE PER CALTRANS STANDARDS
- RIGHT TURN PAVEMENT MARKING, PLACEMENT AND TYPE PER CALTRANS STANDARDS
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GENERAL NOTES:

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5. BUS STOPS AND PULL–OUTS SHALL BE DESIGNED PER MONTEREY–SALINAS TRANSIT STANDARDS.

40 0 40 80
1" = 40' GRAPHIC SCALE

REVISIONS

NO.	DESCRIPTION	DATE	BY

FEHR & PEERS
TRANSPORTATION CONSULTANTS

Designed By: KC
Drawn By: DD/KC
Checked By: AO
Drawing No.: SJ10-1154
Date: SEPT. 2010

SALINAS (CLOVERFIELD) RETAIL CENTER

EXHIBIT 3

CONCEPTUAL STRIPING – EAST BORONDA ROAD – ULTIMATE

SHEET 3 OF 3

Oct 05, 2010 CADD FILE: N:\Projects_SJ10_Projects\SJ10_1154_Salinas_Lowes\CAD\1154 intersection–Sheet 1_3.dwg