EAST BAY MUNICIPAL UTILITY DISTRICT

39th Avenue Reservoir Replacement Project

Traffic and Circulation Technical Report

July 2012

Prepared for:

East Bay Municipal Utility District
375 Eleventh Street
P. O. Box 24055
Oakland, CA 94623-1055

Prepared by:

FEHR & PEERS

One Walnut Creek Center
100 Pringle Avenue, Suite 600
Walnut Creek, CA 94596

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1.0 INTRODUCTION

East Bay Municipal Utility District (EBMUD) is a publicly-owned utility formed under the Municipal Utility District Act. EBMUD's water system serves approximately 1.3 million people in a 325-square mile area extending from Crockett in the north, southward to Castro Valley, eastward from San Francisco Bay to Walnut Creek, and south through the San Ramon Valley.

EBMUD is planning to replace the current open-cut style 39th Avenue Reservoir in Oakland with a smaller tank type reservoir. The replacement tank type reservoir is intended to substantially improve the design standards and seismic stability of the facility.

This report evaluates transportation impacts related to construction activities. Upon completion of the Project, trips to the reservoir site would return to existing levels.

1.1 PROJECT OVERVIEW

The 39th Avenue Pressure Zone is located in the southern portion of the City of Oakland, which receives its supply from both the Piedmont and Aqueduct Pressure Zones. The 39th Avenue Pressure Zone provides water to approximately 8,700 water services between the elevations of 200 feet and 325 feet.

The 39th Avenue Reservoir is located at 4290 Maybelle Road in the City of Oakland; east of Interstate 580 and west of State Route 13, as shown on Figure 1-1. The 8.2 acre reservoir site is bounded by 39th Avenue to the northwest and Reinhardt Drive to the east, within a residential area. A portion of this site was originally a sag pond created by the Hayward Fault, which lies on the southwest portion of the reservoir. Vehicle access to the reservoir is provided from both 39th Avenue and Maybelle Avenue.

According to the Project description provided by EBMUD, the construction period would span approximately 1.3 years (67 weeks). The existing reservoir would first be drained, followed by removal of the roof structure and lining. The new reservoir foundation, walls and roof would then be constructed and the remainder of the old reservoir filled, with the valve pit and piping put in place after. Following field testing and startup, the site, landscaping and paving will be restored.

1.2 TRANSPORTATION ANALYSIS STUDY AREA

The Project transportation analysis study area focuses on the route that construction vehicles would take to/from the Project site. The City of Oakland has designated truck routes as seen in the official truck route guide in Appendix A. While designated routes do not provide direct access to the Project site, they were used as a starting point for determining potential truck routes. According to the City truck route map, trucks are prohibited on 39th Avenue between MacArthur Boulevard and Aliso Avenue. Therefore, trucks must use Maybelle Avenue to access the reservoir.

Interstate 580 provides the closest access to the Project site; however, trucks are prohibited from using this freeway. Therefore, construction vehicles would likely reach the site using either Interstate 880 (I-880) or State Route 13 (SR 13), depending on their origin/destination.

For trucks traveling to/from SR 13, a haul route was identified along 35th Avenue/Redwood Road to MacArthur Boulevard, then to Maybelle Avenue. For trucks traveling to/from I-880, a haul route was identified from San Leandro Street to 35th Avenue, then MacArthur Boulevard where it would follow the same route to Maybelle Avenue. Both haul routes are shown on Figure 1-1. The City of Oakland was consulted in the development of these routes.

Alternative truck routes along High Street and East 12th Street were investigated; however, the routes chosen provide the most direct connection along designated truck routes in Oakland.

1.3 APPROACH TO ANALYSIS

Fehr & Peers evaluated potential transportation impacts based on the following:

- Field reconnaissance of the Project site and surrounding roadway network, including intersection control and lane configurations, as well as roadway widths, on-street parking, sight distance, pedestrian and bicycle facilities, and transit routes.
- Peak period (7:00 to 9:00 AM and 4:00 to 6:00 PM) intersection traffic volume counts and 72-hour roadway segment volume counts for local roadways on a typical weekday (Tuesday – Thursday).
- Estimated Project-generated daily and peak-hour trips for each construction phase.

The following scenarios were analyzed, with Construction conditions analyzed to identify potential impacts during the construction phase of the Project:

- Existing Conditions – The analysis of existing traffic conditions intends to provide a basis for the remainder of the study.

- Existing Plus Average Construction Activity Conditions (SR 13 Alternative) – Represents existing traffic conditions plus average construction traffic activity. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via SR 13.
- Existing Plus Average Construction Activity Conditions (I-880 Alternative) – Represents existing traffic conditions plus average construction traffic activity. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via I-880.
- Existing Plus Maximum Construction Activity Conditions (SR 13 Alternative) – Represents existing traffic conditions plus maximum construction traffic activity. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via SR 13.
- Existing Plus Maximum Construction Activity Conditions (I-880 Alternative) – Represents existing traffic conditions plus maximum construction traffic activity. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via Interstate I-880.
- Cumulative Base Conditions – Represents traffic conditions in the year 2019 when construction of the Project is expected to begin. The objective of this scenario is to evaluate operating conditions that could be expected to result from additional traffic growth in the area and other projects in the Project vicinity. An annual growth rate of 1.5% was used to calculate cumulative base conditions.
- Cumulative Plus Average Construction Activity Conditions (SR 13 Alternative) – Represents traffic conditions with average construction traffic activity added to the cumulative base traffic projections. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via SR 13.
- Cumulative Plus Average Construction Activity Conditions (I-880 Alternative) – Represents traffic conditions with average construction traffic activity traffic added to the cumulative base traffic projections. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via I-880.
- Cumulative Plus Average Construction Activity Conditions (SR 13 Alternative) – Represents traffic conditions with maximum construction traffic activity added to the cumulative base traffic projections. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via SR 13.
- Cumulative Plus Maximum Construction Activity Conditions (I-880 Alternative) – Represents traffic conditions with maximum construction traffic activity added to the cumulative base traffic projections. This scenario assumes all truck traffic generated by the Project would enter and exit the study area via I-880.

1.4 ANALYSIS LOCATIONS

Four roadway segments and seven intersections along the haul routes were selected for analysis, as these locations are the major intersections and roadways on the proposed truck route and could be potentially impacted during Project construction. The locations are listed below and shown on Figure 1-1.

1.4.1 ROADWAY SEGMENTS

A. 35th Avenue, East of Wisconsin Street
B. 35th Avenue, East of Brookdale Avenue
C. MacArthur Boulevard, North of 39th Avenue
D. Maybelle Avenue, East of MacArthur Boulevard

1.4.2 STUDY INTERSECTIONS

1. Redwood Road/State Route 13 Off Ramp-Aliso Avenue
2. 35th Avenue/MacArthur Boulevard
3. 39th Avenue/MacArthur Boulevard
4. Maybelle Avenue/MacArthur Boulevard
5. 35th Avenue/Foothill Boulevard
6. 35th Avenue/International Boulevard
7. 35th Avenue/San Leandro Street

1.5 ANALYSIS 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 factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (i.e., best operating conditions) to LOS F (worst operating conditions). LOS E corresponds to operations "at capacity." When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

Different criteria and methods were used to assess operating conditions for the various types of facilities analyzed in this study, including signalized and unsignalized intersections, and roadway segments. The LOS criteria and methods for each of these facilities are described in the following sections.

1.5.1 SIGNALIZED INTERSECTIONS

Traffic conditions at signalized intersections were evaluated using the HCM Signalized Intersection Capacity Analysis method of the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM). This operations analysis method uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay experienced by motorists traveling through an intersection. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. Table 1-1 summarizes the relationship between average delay per vehicle and LOS for signalized intersections. Synchro software version 7 was used to calculate signalized intersection LOS.

TABLE 1-1 SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios . Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: 2000 Highway Capacity Manual.

1.5.2 UNSIGNALIZED INTERSECTIONS

Traffic conditions at unsignalized intersections were evaluated using the HCM Unsignalized Intersection method from the 2000 *Highway Capacity Manual*. With this method, operations are defined by the average control delay per vehicle (measured in seconds) for each movement that must yield the right-of-way. For all-way stop-controlled intersections, the average control delay is calculated for the intersection as a whole. This incorporates delay associated with deceleration, acceleration, stopping and moving up in the queue. At two-way or side street-controlled intersections, the control delay (and LOS) is calculated for each controlled movement, the left-turn movement from the major street, and the entire intersection. For controlled approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The delays for the entire intersection and for the movement or approach with the highest delay are reported. Table 1-2 summarizes the relationship between delay and LOS for unsignalized intersections.

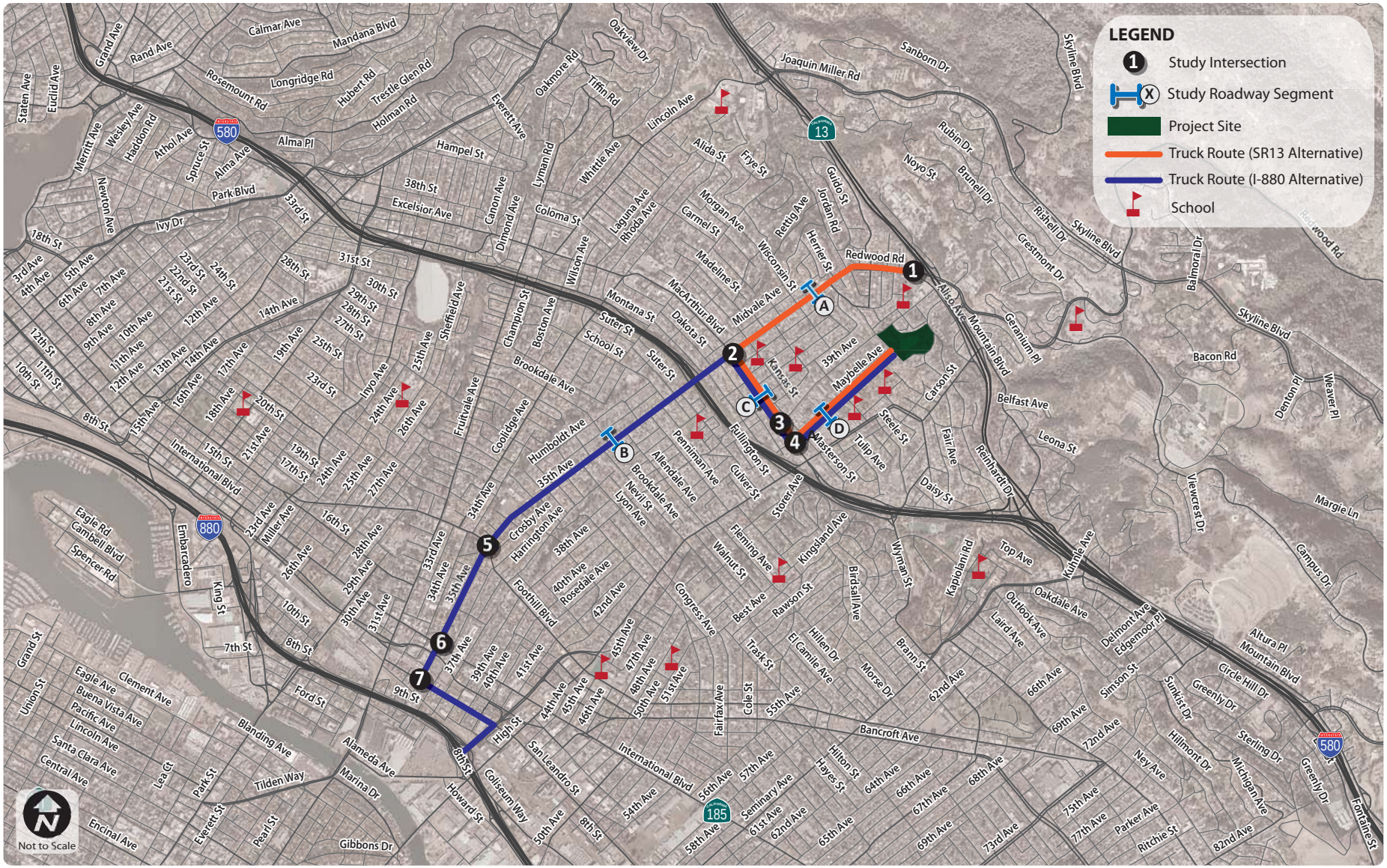
TABLE 1-2 UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Delay in Seconds
A	Little or no delay	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: 2000 Highway Capacity Manual.

1.5.3 ROADWAY SEGMENTS

Roadway segments were evaluated by comparing added Project volumes to existing roadway segment volumes. An increase in traffic volume caused by the Project of less than the typical daily fluctuations in traffic volume would be considered imperceptible. Typical daily fluctuations in traffic volume were calculated using three day traffic counts collected on each roadway segment.



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PROJECT STUDY AREA AND ANALYSIS LOCATIONS

FIGURE 1-1

1.6 SIGNIFICANCE CRITERIA

1.6.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Based on the California Environmental Quality Act (CEQA) guidelines, a significant transportation and circulation impact would occur if the Project would:

(a) conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
(b) conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;
(c) result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
(d) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
(e) result in inadequate emergency access;
(f) conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

1.6.2 CITY OF OAKLAND

Unlike other Lead Agencies under CEQA, such as cities or county governments, EBMUD does not have its own thresholds or criteria for identifying significant traffic impacts. And, as stated in Government Code Section 53091 (d), "…Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency." Thus, under CEQA and the California Government Code, EBMUD is not necessarily bound by local policies, standards, or significance criteria. Nevertheless, it is the practice of EBMUD to work with host jurisdictions and agencies during project planning so that their evaluation of potential impacts are consistent with the local environmental protection policies to the extent practicable.

In this case, and while the City of Oakland criteria do not strictly apply to EBMUD projects, EBMUD is electing to use the City of Oakland significance criteria in evaluating the potential traffic and circulation impacts.

Based on City of Oakland significance criteria[1], a project is considered to cause a significant impact at signalized and all-way stop controlled intersections if it causes the following:

(a) at a study, signalized intersection which is located **outside the Downtown** area, the project would cause the level of service (LOS) to degrade to worse than LOS D (i.e., E); or

(b) at a study, signalized intersection outside the Downtown area where the level of service is LOS E, the project would cause the total intersection average vehicle delay to increase by four (4) or more seconds, or degrade to worse than LOS E (i.e., F); or

(c) at a study, signalized intersection for all areas where the level of service is LOS F, the project would cause (a) the total intersection average vehicle delay to increase by two (2) or more seconds, or (b) an increase in average delay for any of the critical movements of four (4) seconds or more; or (c) the volume-to-capacity ("V/C") ratio exceeds three (3) percent (but only if the delay values cannot be measured accurately); or

(d) at a study, unsignalized intersection the project would add ten (10) or more vehicles and after project completion satisfy the Caltrans peak hour volume signal warrant[2].

[1] City of Oakland, CEQA Thresholds/Criteria of Significance Guidelines, (July 15, 2008)

[2] The *California Manual on Uniform Traffic Control Devices (Caltrans, 2010)* includes eight signal warrants based on traffic volumes, collision data, and other factors to determine if an intersection should be signalized. An intersection satisfying one or more of the warrants may be considered for signalization. However, meeting one or more of the signal warrants does not mean that the intersection must be signalized.

2.0 EXISTING CONDITIONS

This section discusses the existing transportation network in the vicinity of the Project site.

2.1 REGIONAL ROADWAYS

State Route 13 (SR 13) is a four-lane, north-south freeway that connects State Route 24 (SR 24) and Interstate 580 (I-580) in the City of Oakland. SR 13 is a designated truck route between Interstate 80 (I-80) and I-580, with a maximum truck length of 40 feet from kingpin to rear axle and 65 feet overall.

Interstate 880 (I-880) is a north-south freeway that runs through the City of Oakland. This portion of the freeway is a designated truck route and generally provides four travel lanes in each direction.

Interstate 580 (I-580) is an eight-lane, north-south freeway that parallels I-880 through the City of Oakland. Truck travel on I-580 is prohibited between Foothill Boulevard in San Leandro and Grand Avenue in Oakland, and thus would not provide direct access to the Project site for large construction vehicles.

2.2 LOCAL ROADWAYS

35th Avenue is primarily a four-lane, east-west arterial road that provides a connection between SR-13, I-580, and the Fruitvale BART station. It traverses mostly residential areas with some retail uses. Portions of 35th Avenue provide on-street parking and the speed limit is posted between 30 and 35 miles per hour (MPH) within the study area.

MacArthur Boulevard is a two- to four-lane, north-south arterial connecting I-580 with residential and retail land use in Oakland. Most of MacArthur Boulevard provides on-street parking and the speed limit is posted between 25 and 30 MPH through the study area. Many transit lines serve MacArthur Boulevard and are described in detail below in Section 2.4. This road is designated as a Class II bike route (bike lanes) north of the Project study area.

39th Avenue is a two-lane, east-west residential street that connects MacArthur Boulevard and Aliso Avenue, which also connects to SR 13. 39th Avenue forms the northern boundary of the Project site. On-street parking is permitted on most of the street and there are speed humps located between MacArthur Boulevard and Bayo Street with a 15 MPH speed hump crossing speed. An approximately 10-foot wide driveway to the site is provided from 39th Avenue just east of Victor Avenue. 39th Avenue is on a steep

grade rising from MacArthur Boulevard and increasing past the Reservoir to Reinhardt Drive. Redwood Heights Elementary School is located at the east end of 39th Avenue. Truck traffic is prohibited on 39th Avenue between MacArthur Boulevard and Aliso Avenue.

Maybelle Avenue is a two-lane, east-west residential collector that provides access to residences and the Project site from MacArthur Boulevard. Maybelle Avenue provides on-street parking and a speed limit of 25 MPH. Speed humps are located along this street with a 15 MPH speed hump crossing speed. There is a school crossing located on Maybelle Avenue between Masterson Street and Bayo Street to St. Lawrence O'Toole Catholic School. Oakland Garden School is also located on Maybelle Avenue east of Bayo Street. Maybelle Avenue terminates at the site entrance, where it becomes an approximately 14-foot wide driveway. Maybelle Avenue slopes up from MacArthur Boulevard with increasing grades heading east towards the reservoir.

2.3 TRAFFIC VOLUMES

Automatic machine traffic counts were conducted over a 72-hour period on clear days in May 2012 with area schools in normal session along the anticipated haul routes. Counts collected during the school year are representative of typical traffic conditions for the majority of the year. Counts collected during summer months may be lower due to increased vacations and fewer school related trips. The average daily traffic volumes on these roadways are summarized below in Table 2-1 and Figure 2-1. Maybelle Avenue experiences traffic volumes consistent with residential collectors of less than 3,000 vehicles per day. MacArthur Boulevard and 35th Avenue both carry traffic volumes consistent with their classifications of arterial roadway, between 12,000 and 20,000 vehicles per day.

Peak period turning movement counts were conducted between 7:00 and 9:00 AM and 4:00 and 6:00 PM on a clear day in May 2012 with area schools in normal session at the study intersections. For each intersection, the single hour with the highest traffic volumes during the two count periods was identified. The peak-hour volumes are presented on Figure 2-2. The peak-hour data is used as the basis for intersection operations analysis. Existing intersection lane configurations and traffic control are also shown on Figure 2-2. Traffic count worksheets are provided in Appendix B.

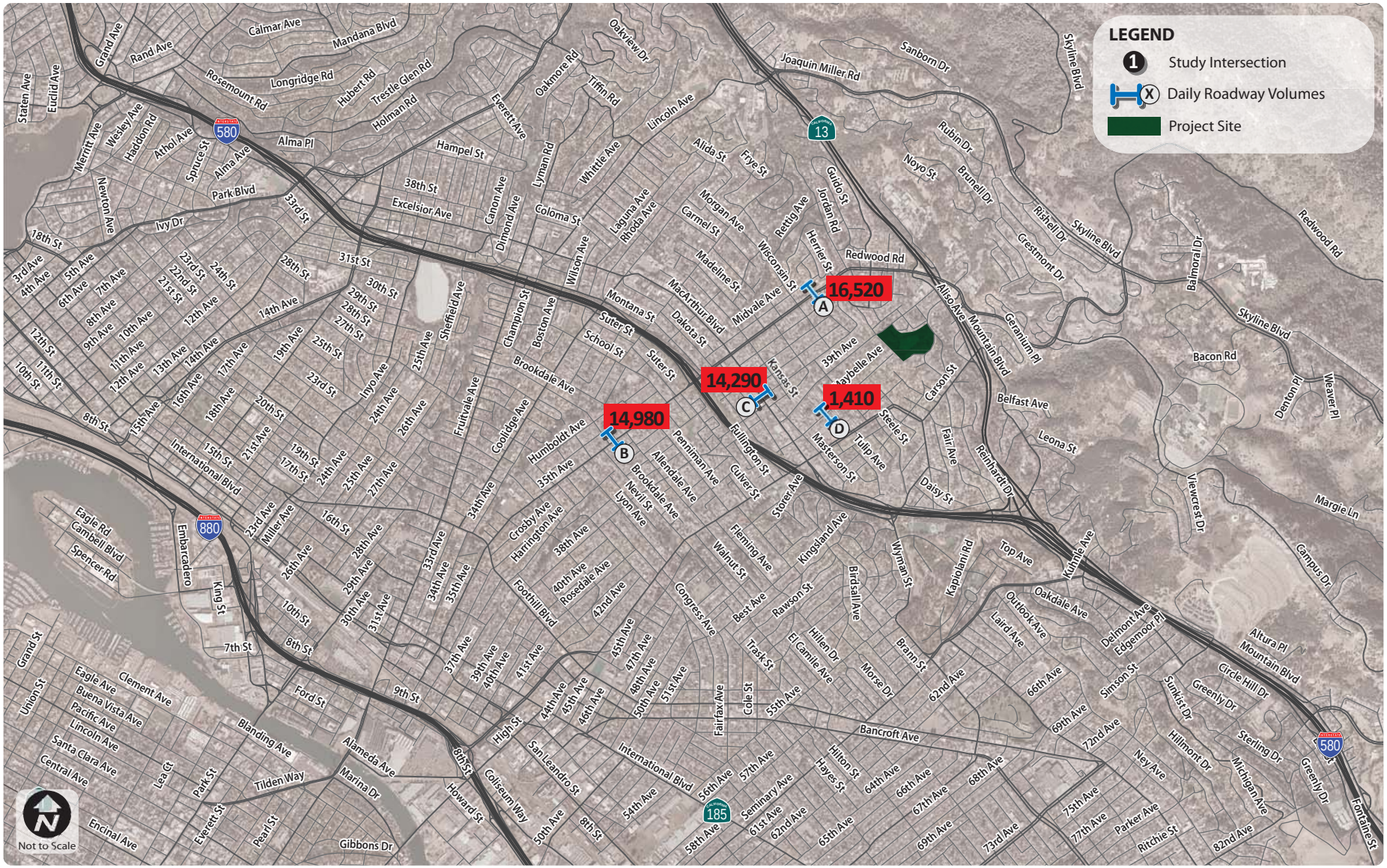
TABLE 2-1 EXISTING DAILY TRAFFIC VOLUMES

Roadway	Location	Average Daily Traffic[1]	Percent Daily Fluctuation	AM Peak Hour[2]	PM Peak Hour[3]
A. 35th Avenue	East of Wisconsin St	16,520	±2%	1,760	1,480
B. 35th Avenue	East of Brookdale Ave	14,980	±1%	1,220	1,260
C. MacArthur Blvd	North of 39th Ave	14,290	±3%	1,280	1,210
D. Maybelle Avenue	East of MacArthur Blvd	1,410	±6%	110	160

Notes:

1. Average daily two-way traffic measured over 3 days.
2. Maximum hourly volume between the hours of 7:00 and 9:00 AM.
3. Maximum hourly volume between the hours of 4:00 and 6:00 PM.

Source: Fehr & Peers, 2012



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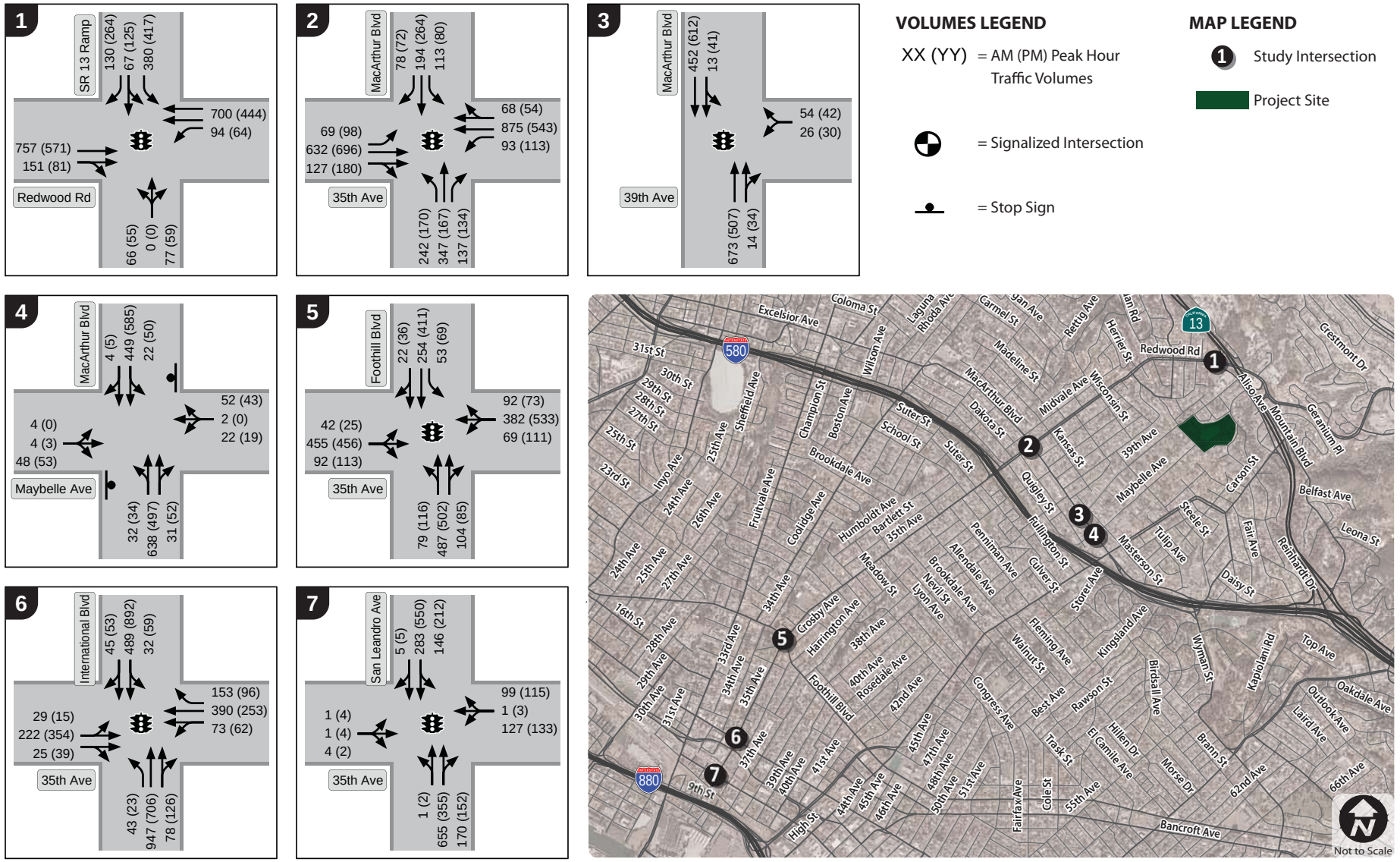
EXISTING DAILY ROADWAY VOLUMES

FIGURE 2-1



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EXISTING PEAK HOUR TRAFFIC VOLUMES

FIGURE 2-2

TABLE 2-2 EXISTING PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Peak Hour	Existing	
			Delay[1]	LOS[2]
Redwood Road/Aliso Road-SR13 Off-Ramp	Signal	AM	12	B
		PM	11	B
35th Avenue/MacArthur Boulevard	Signal	AM	34	C
		PM	30	C
39th Avenue/MacArthur Boulevard	Signal	AM	9	A
		PM	9	A
Maybelle Avenue/MacArthur Boulevard	Side-Street Stop[1]	AM	3 (24)	A (C)
		PM	2 (19)	A (C)
35th Avenue/Foothill Boulevard	Signal	AM	23	C
		PM	31	C
35th Avenue/International Boulevard	Signal	AM	12	B
		PM	12	B
35th Avenue/San Leandro Avenue	Signal	AM	10	B
		PM	13	B

Notes:
1. Average vehicle delay in seconds. For side-street stop control intersections, average delay is listed first followed by (delay for the worst approach)
2. LOS = Level of Service. See Section 1.5 for more information.

Source: Fehr & Peers, 2012

2.4 TRANSIT SERVICE

The Project study area is served by multiple Alameda-Contra Costa (AC) Transit routes. Bus lines 14, 57, 58L, 805, NL, NX, NX1, NX2, NXC travel along MacArthur Boulevard between 35th Avenue and High Street on weekdays and weekends all hours of the day. Bus line 54 travels along 35th Avenue between SR-13 and the Fruitvale BART station. Many AC transit routes serve the Fruitvale BART station at 35th Avenue

and San Leandro on weekdays and weekends from 4:00 AM to 12:00 midnight. No transit service serves Maybelle Avenue.

2.5 PEDESTRIAN AND BICYCLE CIRCULATION

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. Sidewalks are provided on 35th Avenue, MacArthur Boulevard, and Maybelle Avenue within the study area. Sidewalks are generally provided on both sides of the road within the neighborhood surrounding the Project site and the study area.

Bicycle facilities include:

- Bike paths (Class I) – Paved trails that are separated from roadways.
- Bike lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs.
- Bike routes (Class III) – Designated roadways for bicycle use by signs only; may or may not include additional pavement width for cyclists.

MacArthur Boulevard north of 35th Avenue is a designated Class II bike route. Portions of 38th Avenue south of MacArthur Boulevard to East 12th Street are designated Class II bike lanes and Class III bike routes. There are no designated bike routes along the recommended truck routes or within close proximity to the Project site.

3.0 PROJECT DESCRIPTION

This section describes the trip generating potential during the construction stage of the proposed Project. For all scenarios that include these Project trips, peak hour traffic volume figures are found in Appendix C. Upon completion of the Project, the Project would not generate any trips except for occasional maintenance, similar to existing conditions.

3.1 TRIP GENERATION

Project trips would be generated during the construction phase as trucks and workers travel to and from the site. Construction hours are designated between 7:00 AM and 7:00 PM, five days a week (Monday through Friday), with after hours or weekend construction activity limited to unexpected occurrences or critical shutdowns approved by EBMUD staff. EBMUD identified a preliminary construction schedule and the number of trucks and workers anticipated shown below in Table 3-1. Construction personnel may arrive/depart approximately one half-hour prior to or after the designated operating hours. Truck trip estimates were based on the amount of material at the site that would require removal and disposal, and the amount of new material that would be imported. In addition, trucks behave differently than passenger vehicles as they take longer to accelerate, decelerate, and negotiate turns. Therefore, they also affect intersection and roadway operations differently. Truck behavior was accounted for in the assessment of roadway and intersection operations.

The following assumptions were used in the development of the trip generation estimates:

- Truck trips operate over a seven hour day
- All AM peak hour trips travel towards and enter the Project site while all PM peak hour trips exit and travel away from the Project site
- Haul trucks average ten cubic yards per load.
- 550 cubic yards of roofing and roof structure debris would be removed from the site, 3,000 cubic yards of soil would be imported to the site and 4,300 cubic yards would be moved on-site. Concrete trucks with an average capacity of nine cubic yards would be used to transport concrete to the site
- Worker vehicles for reservoir construction consist of vehicles for trades, laborers, equipment operators, contractor superintendent, foreman and district inspector

TABLE 3-1 CONSTRUCTION SCHEDULE

Construction Activity	Major Equipment	Duration (weeks)	Material/ Haul Trucks (per day)	Worker Vehicles (per day)
Drain Reservoir (District)	Portable Pump (1)	4	1	5
Contractor Mobilization	Trailer, generator, excavators	2	4	5
Remove Roof Structure	Excavator, chain saw, haul trucks	4	10	6
Remove Lining	Excavator, hoe ram, haul trucks, air compressor	2	2	5
Access Road	Bulldozer, material truck, back-hoe	2	4	4
Temporary Retaining Wall	Excavator, bulldozer, material truck	3	2	4
Reservoir Foundation	Excavator, bulldozer, compacter	4	2	4
Import Fill	Bulldozer, compactor, material trucks	1	60	4
Reservoir Foundation Pour	Concrete truck, concrete pump	2 days	50	20
Reservoir Walls	Crane, delivery trucks, concrete trucks	8	2	15
Wall Pre-stressing	Pre-stressing tower, concrete truck, concrete pump	4	2	8
Reservoir Roof	Crane, delivery trucks, concrete truck, concrete pump	5	4	15
Reservoir Roof Pour	Concrete truck, concrete pump	2 days	50	20
Valve Pit and Piping	Backhoe, material trucks, concrete truck, concrete pumps	6	2	8
Field Testing and Startup		8	1	8
Site Restoration	Material trucks, bulldozer, backhoe, compactor	2	15	10
Landscaping	Material trucks, backhoe	6	1	10
Complete Civil Work	Asphalt paver, scraper, roller	2	2	2
Demobilization	Haul trucks, backhoe	2	4	4

Source: EBMUD, 2012

Based on the anticipated construction schedule summarized in Table 3-1 above, the expected maximum number of daily trips would be 60 truck trips and 20 on-site worker trips for a total of 80 round trips. It was assumed that truck trips would be spread out over the seven hours during the day, while all worker trips would occur during the AM and PM peak hours. The expected maximum number of peak hour trips would be 17 truck trips and 20 worker trips for a total of 37 one-way trips.

Peak traffic rates related to importing fill and concrete pouring phases are time sensitive and do not extend over the entire duration of construction. For example, peak truck traffic conditions associated with importing fill for the new reservoir foundation is a one-week peak. Peak worker traffic related to pouring concrete for the foundation and roof peaks over two days only.

The traffic generation characteristics for the Project were also determined for a "typical" or average day. This represents the level of activity that the area would experience on a day-to-day basis. The proposed Project is expected to generate and average of four daily truck trips and eight daily worker trips for a total of 12 daily one-way trips. Conservatively, it was assumed that the average daily traffic trips all occurred during the peak hours; therefore, the expected average peak hour trips would be four truck trips and eight worker trips for a total of 12 hourly one-way trips.

TABLE 3-2 TRIP GENERATION ESTIMATES

	Daily Trips Average	Daily Trips Maximum	Hourly Trips[1] Average (one-way)	Hourly Trips[1] Maximum (one-way)
Trucks[2]	4	60	4	17
Worker[3]	8	20	8	20

Note:
1. Hourly trips refer to the number of trips expected to occur during the AM and PM peak hours.
2. Hourly truck trips are daily trips over seven hours multiplied by two-trips (in/out), rounded.
3. All worker trips are conservatively assumed to occur during the AM and PM peak hour.

3.2 TRIP DISTRIBUTION

The Project would generate two types of trips; construction worker trips and truck trips, both with unique travel distribution patterns.

3.2.1 CONSTRUCTION WORKER TRIP DISTRIBUTION

Workers will access the site from both the Maybelle Avenue entrance and the 39th Avenue entrance. It is expected that approximately 50 percent of site workers would access the site via I-580, with 25 percent of trips from SR 13 and 25 percent from I-880. Of the trips to/from I-580, all would access the Project site via the MacArthur Blvd/Calaveras Avenue interchange, and travel north on MacArthur Boulevard, to Maybelle Avenue to the Project site. Worker trips from SR 13 would access the Project site via the Redwood Road interchange, take 35th Avenue west, turn left onto MacArthur Boulevard, then turn left onto Maybelle Avenue or 39th Avenue to the Project site. Worker trips from I-880 would access the Project site through the High Street interchange, turn left on San Leandro Street, turn right on 35th Avenue and travel east on 35th Avenue to MacArthur Boulevard and then Maybelle Avenue or 39th Avenue to the Project site. While construction workers would be encouraged to remain on the main travel routes, some may deviate and travel on High Street and Bayo Street.

3.2.2 TRUCK TRIP DISTRIBUTION

All trucks would be directed to use either SR 13 or I-880 depending on two possible origins for inbound truck traffic. Both of these alternatives were analyzed. The recommended truck route plan is shown in Figure 1-1 with both Alternative SR 13 and Alternative I-880. Outbound truck trips would follow the same paths away from the Project site.

With the SR 13 truck route alternative, inbound and outbound truck traffic would be directed to use the Redwood Road Interchange. The existing right-turn lane would allow trucks to turn right off of the SR 13 off-ramp and continue along Redwood Road which turns into 35th Avenue. Trucks would continue west on 35th Avenue to the signal at MacArthur Boulevard. The signal and left-turn lane would allow trucks to make the left-turn onto southbound MacArthur Boulevard. Trucks would continue along MacArthur Boulevard to Maybelle Avenue where they would turn left onto the residential street at an uncontrolled side-street stop intersection. Following Maybelle Avenue east to the Project site, trucks would encounter 15 MPH speed humps and a school crossing. There is a steep grade on Maybelle Avenue from Bayo Street up to the Project site. The grade levels out approximately 60 feet before the Project site gates.

With the I-880 truck route alternative, inbound and outbound truck traffic would be directed to use the High Street Interchange, a designated truck route facility. Trucks would turn left onto San Leandro Street and then right at the traffic signal on 35th Avenue. Trucks would continue east on 35th Avenue, across I-580, and turn right at the traffic signal onto MacArthur Boulevard. Following MacArthur Boulevard south, trucks would turn left onto Maybelle Avenue and follow the same route as trucks from SR 13.

Both truck routes pass by the American Indian Public High School, St. Lawrence O'Toole Catholic School and Oakland Garden Pre-School located near the vicinity of the Project. The American Indian Public High School is located on Magee Avenue just east of MacArthur Boulevard. St. Lawrence O'Toole Catholic School is located on High Street and has a school crossing on Maybelle Avenue. Oakland Garden Pre-School is located on Maybelle Avenue, two blocks away from the Project site.

3.3 EXISTING PLUS PROJECT CONDITIONS

3.3.1 EXISTING PLUS AVERAGE TRAFFIC PROJECTIONS

The existing plus average construction activity traffic scenario represents the existing traffic conditions with the addition of the proposed average construction activity Project traffic volumes. The average Project trip generation and trip distribution described above were used to assign the Project trips to the network.

3.3.2 EXISTING PLUS MAXIMUM TRAFFIC PROJECTIONS

The existing plus maximum construction activity traffic scenario represents the existing traffic conditions with the addition of the proposed maximum construction activity Project traffic volumes. The maximum Project trip generation and trip distribution described above were used to assign the Project trips to the network.

3.4 CUMULATIVE CONDITIONS

3.4.1 CUMULATIVE BASE (2019) TRAFFIC PROJECTIONS

The cumulative base traffic projections account for an annual 1.5 percent growth rate compounded over seven years added to the existing base traffic volumes. The Project is expected to begin construction in 2019. These projected traffic volumes represent cumulative base conditions.

3.4.2 CUMULATIVE PLUS AVERAGE TRAFFIC PROJECTIONS

The cumulative plus average construction activity traffic scenario represents cumulative base traffic conditions with the addition of the proposed average construction activity Project traffic volumes. The average Project traffic volumes, using the Project trip generation and trip distribution to assign the trips to the network, were added to the cumulative base traffic projections to develop the traffic forecasts.

3.4.3 CUMULATIVE PLUS MAXIMUM TRAFFIC PROJECTIONS

The cumulative plus maximum construction activity traffic scenario represents cumulative base traffic conditions with the addition of the proposed maximum construction activity Project traffic volumes. The maximum proposed Project traffic volumes, using the Project trip generation and trip distribution to assign the trips to the network, were added to the cumulative base traffic projections to develop the traffic forecasts.

4.0 IMPACTS AND MITIGATION MEASURES

This chapter discusses the potential transportation and circulation impacts during Project construction. The duration of Project impacts are limited to the construction period, as trip generation characteristics after construction would be similar to those before construction. Therefore, the mitigation measures below are designed to reduce the impact of the short-term effects of construction traffic. The CEQA checklist for transportation impacts is presented below:

	Environmental Factors and Focused Questions for Determination of Environmental Impact	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
	TRANSPORTATION/TRAFFIC — Would the Project:				
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	[ ]	[ ]	[X]	[ ]
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	[ ]	[ ]	[X]	[ ]
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	[ ]	[ ]	[ ]	[X]
d)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	[ ]	[ ]	[ ]	[X]
e)	Result in inadequate emergency access?	[ ]	[ ]	[ ]	[X]
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	[ ]	[ ]	[ ]	[X]

4.1 ANALYSIS RESULTS

4.1.1 EXISTING PLUS PROJECT CONSTRUCTION ACTIVITY CONDITIONS

Daily traffic volumes during the construction period were added to the existing daily traffic volumes based on the trip generation and trip distribution percentages presented in Chapter 3. The results are presented in Table 4-1. Roadway segments A, B, and C would experience an increase of 1.0, 1.0 and 1.1 percent respectively, which is less than or equal to the daily traffic volume fluctuation and would be considered imperceptible. Segment D, Maybelle Avenue would experience an increase of 10.8 percent. This increase exceeds the daily fluctuation in traffic volume; therefore, the addition of construction traffic is considered to have a near-term ***potentially significant impact*** on Segment D, Maybelle Avenue from MacArthur Boulevard to the Project site.

TABLE 4-1 EXISTING DAILY TRAFFIC VOLUME PLUS CONSTRUCTION TRAFFIC

Roadway	Location	Existing Daily Traffic	Maximum Project Daily Added Traffic[1]	Total Maximum Daily Traffic	Maximum Percent Increase	Percent Daily Fluctuation
A. 35th Avenue	East of Wisconsin St	16,520	65 (155)	16,675	1.0%	±2%
B. 35th Avenue	East of Brookdale Ave	14,980	65 (155)	15,135	1.0%	±1%
C. MacArthur Blvd	North of 39th Ave	14,290	70 (160)	14,450	1.1%	±3%
D. Maybelle Avenue	East of MacArthur Blvd	1,410	80 (170)	1,580	10.8%	±6%

Note:
1. Truck trips included followed by (passenger car equivalent values). Passenger car equivalent values were used to calculate Maximum Percent Increase.
Source: Fehr & Peers, 2012

Peak-hour hour intersection operations with average and maximum construction traffic volumes assigned to the roadway network are summarized in Table 4-2. It was assumed that all worker vehicle and truck trips would travel to the Project site during the AM peak hour and leave during the PM peak hour. Additionally, there were two truck routes presented (Alternative SR 13 and Alternative I-880) so the maximum number of trucks was assumed for each route as a conservative estimate. As shown Table 4-2, Project construction traffic is not expected to significantly degrade intersection operations significantly at any of the study intersections. Therefore, the addition of project traffic is not expected to result in a

significant impact during periods of average or maximum construction activity. LOS calculation worksheets can be found in Appendix D.

TABLE 4-2 EXISTING PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Peak Hour	Existing		Existing Plus Project Average				Existing Plus Project Maximum			
					SR 13 Alternative		I-880 Alternative		SR 13 Alternative		I-880 Alternative	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1. Redwood Road/Aliso Road-SR13 Off-Ramp	Signal	AM	12	B	12	B	12	B	12	B	12	B
		PM	11	B	11	B	11	B	11	B	11	B
2. 35th Avenue/MacArthur Boulevard	Signal	AM	34	C	35	C	35	C	36	D	35	D
		PM	30	C	31	C	31	C	31	C	33	C
3. 39th Avenue/MacArthur Boulevard	Signal	AM	9	A	9	A	9	A	9	A	9	A
		PM	9	A	9	A	9	A	9	A	9	A
4. Maybelle Avenue/MacArthur Boulevard	SSSC	AM	3 (24)	A (C)	3 (26)	A (D)	3 (26)	A (D)	3 (31)	A (D)	3 (31)	A (D)
		PM	2 (19)	A (C)	2 (20)	A (C)	2 (20)	A (C)	3 (21)	A (C)	3 (20)	A (C)
5. 35th Avenue/Foothill Boulevard	Signal	AM	23	C	23	C	23	C	23	C	23	C
		PM	31	C	32	C	32	C	32	C	36	D
6. 35th Avenue/International Boulevard	Signal	AM	12	B	12	B	12	B	12	B	13	B
		PM	12	B	12	B	12	B	12	B	12	B
7. 35th Avenue/San Leandro Avenue	Signal	AM	11	B	11	B	11	B	11	B	11	B
		PM	13	B	14	B	15	B	15	B	18	B

1. Average delay per vehicle in seconds. For side-street stop control intersections, average delay is listed first followed by (delay for the worst approach)
2. LOS = Level of Service. See Section 1.5 for more information.

Source: Fehr & Peers, 2012

4.1.2 CUMULATIVE BASE (2019) CONDITIONS

The cumulative base traffic projections account for an annual 1.5 percent growth rate compounded over seven years added to the existing base traffic volumes. The Project is expected to begin construction in 2019. These projected traffic volumes represent cumulative base conditions. Daily traffic volumes are presented in Table 4-3. Traffic volumes are not expected to increase on Maybelle Avenue since this area is already built out and does not provide through access for regional traffic.

Peak-hour hour operations at each study intersection under Cumulative Base conditions are summarized in Table 4-4. LOS calculation worksheets can be found in Appendix D.

4.1.3 CUMULATIVE PLUS PROJECT CONSTRUCTION ACTIVITY CONDITIONS

Daily traffic volumes during the construction period were added to the cumulative daily traffic volumes based on the trip generation and trip distribution percentages presented in Chapter 3. The results are presented in Table 4-3. Roadway segments A, B, and C would experience an increase of 0.9, 1.0 and 1.1 percent respectively, which is less than or equal to the daily traffic volume fluctuation and would be considered imperceptible. Segment D, Maybelle Avenue would experience an increase of 12.0 percent. This increase exceeds the daily fluctuation in traffic volume; therefore, the addition of construction traffic is considered to have a near-term ***potentially significant impact*** on Segment D, Maybelle Avenue between MacArthur Boulevard and the Project site.

TABLE 4-3 CUMULATIVE DAILY TRAFFIC VOLUME PLUS CONSTRUCTION TRAFFIC

Roadway	Location	Cumulative Daily Traffic	Maximum Project Daily Added Traffic[1]	Total Maximum Daily Traffic	Maximum Percent Increase	Percent Daily Fluctuation
A. 35th Avenue	East of Wisconsin St	17,270	65 (155)	17,430	0.9%	±2%
B. 35th Avenue	East of Brookdale Ave	15,660	65 (155)	15,130	1.0%	±1%
C. MacArthur Blvd	North of 39th Ave	14,940	70 (160)	15,100	1.1%	±3%
D. Maybelle Avenue	East of MacArthur Blvd	1,410	80 (170)	1,580	12.0%	±6%

Note:
1. Truck trips included followed by (passenger car equivalent values). Passenger car equivalent values were used to calculate Maximum Percent Increase.
Source: Fehr & Peers, 2012

Peak-hour hour intersection operations with average and maximum construction traffic volumes assigned to the cumulative roadway network volumes are summarized in Table 4-4. It was assumed that all worker vehicle and truck trips would travel to the Project site during the AM peak hour and leave during the PM peak hour. Additionally, there were two truck routes presented (Alternative SR-13 and Alternative I-880) so the maximum number of trucks was assumed for each route as a conservative estimate. As shown in Table 4-3, Project construction traffic is expected to significantly degrade the intersection operations of one signalized and one unsignalized intersection under maximum construction activity from an acceptable level to an unacceptable level, namely:

- Maybelle Avenue/MacArthur Boulevard for the SR 13 and I-880 alternatives (AM Peak Hour)
- 35th Avenue/Foothill Boulevard for the I-880 truck route alternative (PM Peak Hour)

Thus, during maximum construction activity the added Project traffic is considered to have a near-term ***potentially significant impact*** to intersection operations under the City of Oakland significance criteria. LOS calculation worksheets can be found in Appendix D.

TABLE 4-4 CUMULATIVE AND CUMULATIVE PLUS PROJECT PEAK HOUR INTERSECTION LEVELS OF SERVICE

Intersection	Control	Peak Hour	Cumulative		Cumulative Plus Project Average				Cumulative Plus Project Maximum			
					SR 13 Alternative		I-880 Alternative		SR 13 Alternative		I-880 Alternative	
			Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]	Delay[1]	LOS[2]
1. Redwood Road/Aliso Road-SR13 Off-Ramp	Signal	AM	14	B	14	B	14	B	14	B	14	B
		PM	13	B	12	B	13	B	13	B	12	B
2. 35th Avenue/MacArthur Boulevard	Signal	AM	42	D	43	D	42	D	44	D	43	D
		PM	36	D	36	D	37	D	36	D	40	D
3. 39th Avenue/MacArthur Boulevard	Signal	AM	9	A	9	A	9	A	9	A	9	A
		PM	9	A	9	A	9	A	9	A	9	A
4. Maybelle Avenue/MacArthur Boulevard	SSSC	AM	3 (31)	A (D)	3 (34)	A (D)	3 (34)	A (D)	***4 (43)***	***A (E)***	***4 (43)***	***A (E)***
		PM	3 (24)	A (C)	3 (25)	A (C)	3 (25)	A (C)	4 (26)	A (D)	4 (26)	A (D)
5. 35th Avenue/Foothill Boulevard	Signal	AM	26	C	26	C	26	C	26	C	27	C
		PM	50	D	50	D	52	D	51	D	***57***	***E***
6. 35th Avenue/International Boulevard	Signal	AM	14	B	14	B	15	B	14	B	15	B
		PM	12	B	13	B	14	B	13	B	14	B
7. 35th Avenue/San Leandro Avenue	Signal	AM	13	B	13	B	13	B	13	B	13	B
		PM	17	B	18	B	19	B	18	B	26	C

Source: Fehr & Peers, 2012
1. Delay is in seconds. For side-street stop control intersections, average delay is listed first followed by (delay for the worst approach)
2. LOS = Level of Service. See Section 1.5 for more information. ***Bold italics*** indicates deficient service level.

4.2 PARKING ASSESSMENT

On-street parking is available along Maybelle Avenue and 39th Avenue in the vicinity of the site. Sufficient parking to accommodate the maximum of 20 worker vehicles expected during construction was available during mid-day observations at the site. However, since this parking serves the neighboring residences, on-site parking should be utilized when possible. Depending on the type of construction work taking place, there is sufficient room to accommodate 20 vehicles on site. The driveway from 39th Avenue may serve as potential worker vehicle parking, as well as access roadways around the existing reservoir.

4.3 PAVEMENT ASSESSMENT

Large trucks would be used to haul material to and from the Project site. Although arterials such as San Leandro Street, 35th Avenue and MacArthur Boulevard are designed to withstand substantial truck volumes, minor residential roads such as Maybelle Avenue are not. These roadways would likely experience increased wear-and-tear as a result of Project construction.

4.4 IMPACTS AND MITIGATION MEASURES

Project construction would generate short-term vehicle trips by trucks and construction workers and would represent an increased traffic load on the residential streets surrounding the Project site. The existing impact of the Project is less-than-significant. The cumulative (2019) impact of the Project is significant but mitigable.

> **Impact T-1:** The addition of construction activity traffic during Project construction would cause an increase in traffic on **Maybelle Avenue** by more than the daily fluctuation of traffic experienced on this roadway. Also, the additional maximum Project traffic would cause the unsignalized **Maybelle Avenue/MacArthur Boulevard** intersection to operate unacceptably in the AM and PM peak hour under cumulative conditions. Based on the significance criteria, this is considered a significant impact.

Mitigation Measure T-1: EBMUD contract specifications will require preparation and implementation of a Traffic Management Plan, which will include the following elements:

- The work hours for each phase of Project construction, the process for notifying residents of construction activity, and the means for people to report construction-related problems.
- A haul route, based on the route shown on Figure 1-1 that will be provided to all trucks serving the site during the construction period. The haul route will identify the schools in the vicinity of the Project site, including the school crossing on Maybelle Avenue between Masterson Street and Bayo Street. The map will also indicate the existence of speed humps on Maybelle Avenue.
- A truck staging area to be used when there is insufficient space for trucks within the site. This may occur during periods of peak truck activity such as during the import fill construction phase. The staging area should be located such that trucks would not be queued onto the steep portion of Maybelle Avenue east of Bayo Street.
- A flagger at the MacArthur Boulevard/Maybelle Avenue intersection to assist truck turning into and out of Maybelle Avenue during periods of peak construction activity, including import fill and site restoration activities. This will minimize delays caused by slower moving trucks at this intersection as well as assist them with maneuvering onto Maybelle Avenue in a timely manner.
- Signage on Maybelle Avenue warning motorists of the construction work ahead and presence of trucks entering the roadway.
- Documentation of road pavement conditions for all routes that would be used by construction vehicles both before and after Project construction. Roads found to have been damaged by construction vehicles shall be repaired to the level at which they existed prior to Project construction.

The Traffic Management Plan would be enforced by EBMUD construction inspectors. With implementation of this mitigation measure, impact T-1 would be reduced to less-than significant.

Impact T-2: The addition of maximum construction activity traffic during Project construction would cause the signalized **35th Avenue/Foothill Boulevard** intersection to operate unacceptably in the PM peak hour under cumulative I-880 alternative conditions. Based on City of Oakland significance criteria, this is considered a significant impact.

Mitigation Measure T-1: Limit construction trucks to 11 or less through this intersection during the PM peak hour for the I-880 truck route alternative. EBMUD construction inspectors shall enforce this vehicle limit. With implementation of this measure, the impact would be reduced to less-than-significant.

Subsequent to completion of the Project, no additional traffic would be generated by the site and the long-term cumulative impact of the Project is less-than significant.

5.0 REFERENCES

Alameda-Contra Costa Transit District Bus System Map, available online at

http://www.actransit.org/

Caltrans, *Truck Networks on California State Highways,* available online at

http://www.dot.ca.gov/hq/traffops/trucks/truckmap/truckmap-d04.pdf

City of Oakland Truck Routes and Prohibited Streets, available online at

http://www2.oaklandnet.com/Government/o/PWA/o/EC/o/TS/OAK026471

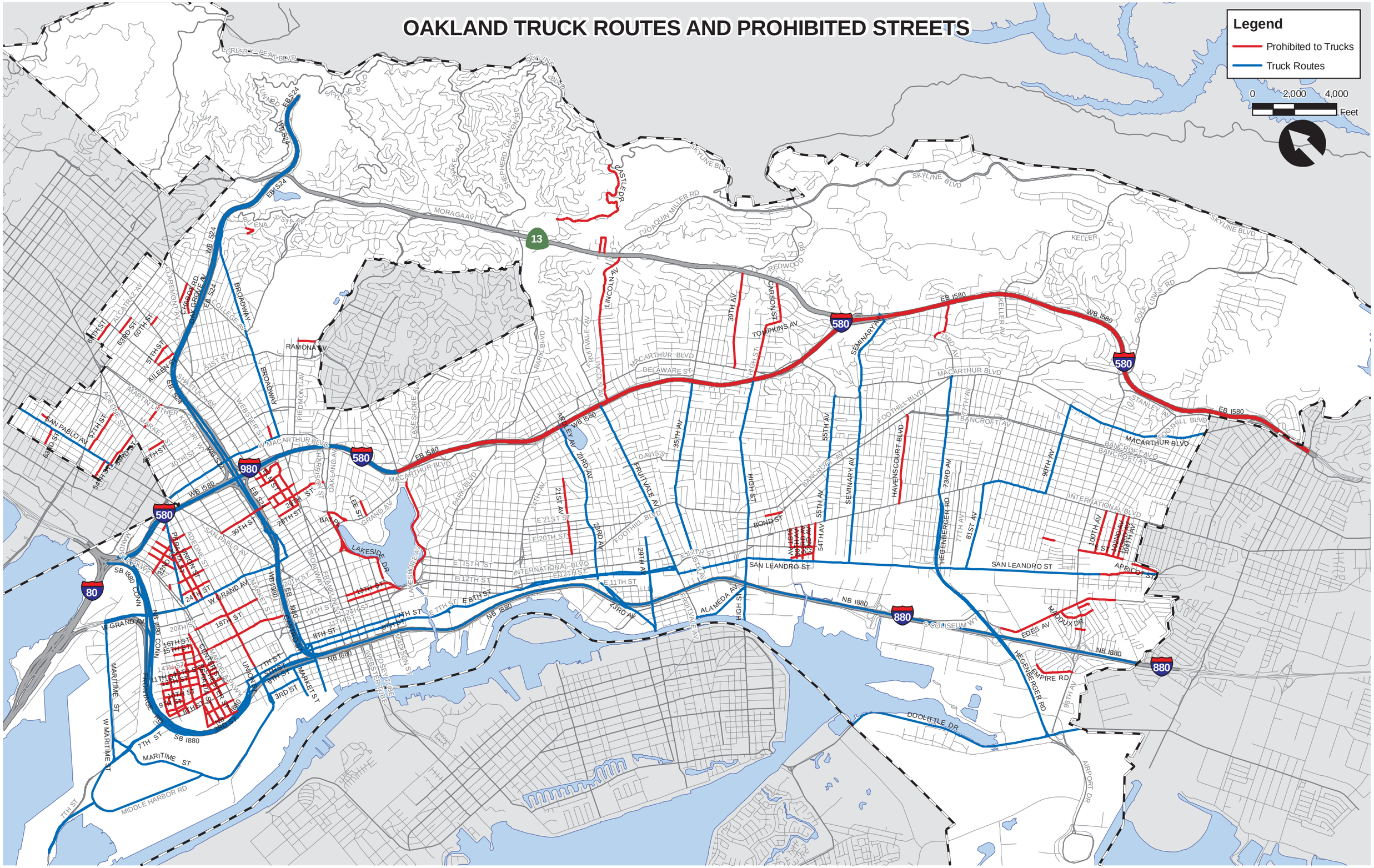
City of Oakland, *CEQA Thresholds/Criteria of Significance Guidelines*, (July 15, 2008)

http://www.oaklandnet.com/government/ceda/revised/AttachH.pdf

Transportation Research Board's 2000 *Highway Capacity Manual*.

APPENDIX A: OAKLAND TRUCK ROUTE MAP

OAKLAND TRUCK ROUTES AND PROHIBITED STREETS



APPENDIX B: TRAFFIC COUNT DATA

Volumes for: Tuesday, May 15, 2012 City: Oakland Project #: 12-7210-001

Location: 35th Avenue near Victor Avenue.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	18	93			12	128				
12:15	9	80			9	131				
12:30	9	108			3	104				
12:45	7	109	43	390	7	104	31	467	74	857
1:00	5	95			5	113				
1:15	4	105			4	109				
1:30	6	106			4	141				
1:45	7	123	22	429	2	110	15	473	37	902
2:00	1	99			3	122				
2:15	3	110			4	123				
2:30	4	127			2	119				
2:45	3	149	11	485	2	122	11	486	22	971
3:00	1	151			2	149				
3:15	3	154			0	206				
3:30	4	160			3	155				
3:45	5	173	13	638	2	158	7	668	20	1306
4:00	4	155			4	154				
4:15	4	136			2	178				
4:30	5	140			5	146				
4:45	7	164	20	595	6	151	17	629	37	1224
5:00	12	182			11	201				
5:15	5	169			9	188				
5:30	24	156			17	177				
5:45	21	199	62	706	27	192	64	758	126	1464
6:00	22	176			23	181				
6:15	32	184			15	149				
6:30	50	146			47	139				
6:45	55	140	159	646	50	103	135	572	294	1218
7:00	77	115			79	129				
7:15	125	109			85	101				
7:30	210	94			135	108				
7:45	230	85	642	403	202	88	501	426	1143	829
8:00	168	75			266	90				
8:15	198	61			235	86				
8:30	196	78			222	95				
8:45	190	56	752	270	181	98	904	369	1656	639
9:00	134	58			159	105				
9:15	164	64			118	112				
9:30	104	49			116	61				
9:45	114	45	516	216	107	47	500	325	1016	541
10:00	109	39			100	50				
10:15	93	36			79	28				
10:30	118	40			87	27				
10:45	113	32	433	147	94	29	360	134	793	281
11:00	107	28			115	18				
11:15	86	19			98	19				
11:30	90	20			108	7				
11:45	102	19	385	86	100	13	421	57	806	143
Total	3058	5011	3058	5011	2966	5364	2966	5364	6024	10375
Combined Total	8069		8069		8330		8330		16399	
AM Peak	7:30 AM				7:45 AM					
Vol.	806				925					
P.H.F.	0.876				0.869					
PM Peak		5:30 PM				5:00 PM				
Vol.		715				758				
P.H.F.		0.898				0.943				
Percentage	37.9%	62.1%			35.6%	64.4%				

Volumes for: Wednesday, May 16, 2012 City: Oakland Project #: 12-7210-001

Location: 35th Avenue near Victor Avenue.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	8	107			10	105				
12:15	7	116			9	134				
12:30	6	124			1	113				
12:45	6	128	27	475	6	127	26	479	53	954
1:00	2	133			9	138				
1:15	9	148			10	127				
1:30	4	107			5	161				
1:45	2	115	17	503	6	152	30	578	47	1081
2:00	7	119			4	112				
2:15	4	97			3	114				
2:30	3	96			1	101				
2:45	5	125	19	437	0	133	8	460	27	897
3:00	1	120			3	163				
3:15	4	127			4	188				
3:30	2	136			0	137				
3:45	4	132	11	515	1	148	8	636	19	1151
4:00	3	144			2	156				
4:15	4	127			3	156				
4:30	2	158			7	158				
4:45	11	162	20	591	4	151	16	621	36	1212
5:00	9	154			8	162				
5:15	16	157			14	180				
5:30	17	172			21	187				
5:45	23	184	65	667	30	183	73	712	138	1379
6:00	24	202			25	202				
6:15	36	183			24	167				
6:30	50	136			32	141				
6:45	54	133	164	654	43	156	124	666	288	1320
7:00	63	105			62	139				
7:15	119	78			84	113				
7:30	211	119			141	111				
7:45	264	101	657	403	225	106	512	469	1169	872
8:00	178	84			228	133				
8:15	208	82			220	93				
8:30	218	60			216	84				
8:45	157	63	761	289	175	68	839	378	1600	667
9:00	118	78			140	61				
9:15	119	62			119	81				
9:30	106	64			112	58				
9:45	109	50	452	254	109	38	480	238	932	492
10:00	93	45			93	51				
10:15	87	37			100	35				
10:30	86	34			106	31				
10:45	92	27	358	143	85	23	384	140	742	283
11:00	78	30			108	11				
11:15	91	19			96	17				
11:30	104	21			113	11				
11:45	105	11	378	81	102	14	419	53	797	134
Total	2929	5012	2929	5012	2919	5430	2919	5430	5848	10442
Combined Total	7941		7941		8349		8349		16290	
AM Peak	7:45 AM				7:45 AM					
Vol.	868				889					
P.H.F.	0.822				0.975					
PM Peak		5:30 PM				5:15 PM				
Vol.		741				752				
P.H.F.		0.917				0.931				
Percentage	36.9%	63.1%			35.0%	65.0%				

Volumes for: Thursday, May 17, 2012 City: Oakland Project #: 12-7210-001

Location: 35th Avenue near Victor Avenue.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	17	84			6	129				
12:15	15	108			7	127				
12:30	12	119			9	118				
12:45	9	124	53	435	7	104	29	478	82	913
1:00	5	92			5	132				
1:15	7	105			9	117				
1:30	9	122			8	107				
1:45	8	102	29	421	9	111	31	467	60	888
2:00	6	99			4	112				
2:15	5	119			3	119				
2:30	5	134			4	118				
2:45	6	186	22	538	3	127	14	476	36	1014
3:00	1	164			5	163				
3:15	3	180			1	247				
3:30	3	131			1	164				
3:45	5	172	12	647	1	167	8	741	20	1388
4:00	2	145			2	156				
4:15	3	151			6	145				
4:30	4	165			5	158				
4:45	10	159	19	620	8	184	21	643	40	1263
5:00	17	153			5	191				
5:15	12	200			11	174				
5:30	21	189			22	182				
5:45	24	192	74	734	26	180	64	727	138	1461
6:00	23	140			27	212				
6:15	34	183			27	174				
6:30	54	167			40	139				
6:45	55	163	166	653	51	131	145	656	311	1309
7:00	86	114			64	128				
7:15	132	126			97	145				
7:30	205	92			142	111				
7:45	260	71	683	403	203	104	506	488	1189	891
8:00	173	71			268	95				
8:15	195	72			215	89				
8:30	225	74			202	111				
8:45	175	67	768	284	176	81	861	376	1629	660
9:00	159	66			140	87				
9:15	148	57			140	73				
9:30	114	53			102	66				
9:45	116	63	537	239	104	53	486	279	1023	518
10:00	97	44			101	31				
10:15	108	43			88	47				
10:30	93	45			105	38				
10:45	95	34	393	166	100	21	394	137	787	303
11:00	101	27			120	25				
11:15	83	16			89	22				
11:30	97	21			90	22				
11:45	110	13	391	77	101	9	400	78	791	155
Total	3147	5217	3147	5217	2959	5546	2959	5546	6106	10763
Combined Total	8364		8364		8505		8505		16869	
AM Peak	7:45 AM				7:45 AM					
Vol.	853				888					
P.H.F.	0.820				0.828					
PM Peak		5:00 PM				5:15 PM				
Vol.		734				748				
P.H.F.		0.918				0.882				
Percentage	37.6%	62.4%			34.8%	65.2%				

Volumes for: Tuesday, May 15, 2012 City: Oakland Project #: 12-7210-002

Location: 35th Avenue neast Brookdale Avenue.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	21	80			18	104				
12:15	24	85			19	97				
12:30	12	83			14	88				
12:45	10	93	67	341	19	85	70	374	137	715
1:00	12	86			9	96				
1:15	4	100			16	105				
1:30	7	105			8	91				
1:45	11	92	34	383	8	99	41	391	75	774
2:00	10	112			9	102				
2:15	9	111			8	115				
2:30	13	120			8	138				
2:45	8	121	40	464	10	131	35	486	75	950
3:00	2	132			3	138				
3:15	5	130			4	149				
3:30	10	143			9	123				
3:45	8	125	25	530	3	119	19	529	44	1059
4:00	3	144			2	162				
4:15	4	136			13	155				
4:30	6	141			11	137				
4:45	13	139	26	560	9	145	35	599	61	1159
5:00	12	159			8	142				
5:15	12	164			17	142				
5:30	26	151			15	156				
5:45	25	165	75	639	33	146	73	586	148	1225
6:00	45	170			39	135				
6:15	50	164			29	169				
6:30	70	119			62	142				
6:45	53	121	218	574	73	101	203	547	421	1121
7:00	85	113			79	115				
7:15	114	120			97	96				
7:30	147	90			137	116				
7:45	137	103	483	426	172	98	485	425	968	851
8:00	152	84			162	60				
8:15	131	69			162	95				
8:30	120	87			157	88				
8:45	121	81	524	321	138	76	619	319	1143	640
9:00	101	65			106	79				
9:15	108	64			89	67				
9:30	75	78			79	80				
9:45	90	60	374	267	96	63	370	289	744	556
10:00	80	71			70	48				
10:15	82	60			78	63				
10:30	94	49			78	46				
10:45	76	55	332	235	91	39	317	196	649	431
11:00	70	40			94	27				
11:15	71	43			76	33				
11:30	77	23			97	36				
11:45	96	23	314	129	94	26	361	122	675	251
Total	2512	4869	2512	4869	2628	4863	2628	4863	5140	9732
Combined Total	7381		7381		7491		7491		14872	
AM Peak	7:30 AM				7:45 AM					
Vol.	567				653					
P.H.F.	0.933				0.949					
PM Peak		5:15 PM				5:30 PM				
Vol.		650				606				
P.H.F.		0.956				0.896				
Percentage	34.0%	66.0%			35.1%	64.9%				

Volumes for: Wednesday, May 16, 2012 City: Oakland Project #: 12-7210-002

Location: 35th Avenue neast Brookdale Avenue.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	24	103			19	90				
12:15	15	110			27	110				
12:30	14	95			14	102				
12:45	14	112	67	420	20	107	80	409	147	829
1:00	14	86			16	109				
1:15	14	110			10	122				
1:30	10	114			18	125				
1:45	5	109	43	419	14	113	58	469	101	888
2:00	6	119			4	124				
2:15	12	120			9	130				
2:30	12	123			7	116				
2:45	9	109	39	471	7	136	27	506	66	977
3:00	10	114			10	119				
3:15	5	126			8	150				
3:30	9	106			5	132				
3:45	8	117	32	463	3	151	26	552	58	1015
4:00	5	134			2	159				
4:15	10	145			11	156				
4:30	11	124			14	143				
4:45	17	157	43	560	15	138	42	596	85	1156
5:00	15	152			9	163				
5:15	15	166			16	158				
5:30	35	162			16	137				
5:45	36	141	101	621	30	149	71	607	172	1228
6:00	43	160			42	142				
6:15	47	150			41	131				
6:30	78	130			54	126				
6:45	64	135	232	575	51	118	188	517	420	1092
7:00	113	100			78	110				
7:15	128	96			89	121				
7:30	170	93			117	112				
7:45	142	112	553	401	156	106	440	449	993	850
8:00	135	71			153	105				
8:15	132	98			157	101				
8:30	127	56			135	93				
8:45	121	74	515	299	132	84	577	383	1092	682
9:00	96	64			104	72				
9:15	67	57			83	69				
9:30	89	80			89	76				
9:45	90	64	342	265	74	46	350	263	692	528
10:00	77	52			74	55				
10:15	58	49			87	58				
10:30	84	50			90	47				
10:45	96	49	315	200	101	35	352	195	667	395
11:00	71	42			99	36				
11:15	97	35			74	41				
11:30	92	30			73	29				
11:45	83	24	343	131	92	29	338	135	681	266
Total	2625	4825	2625	4825	2549	5081	2549	5081	5174	9906
Combined Total	7450		7450		7630		7630		15080	
AM Peak	7:30 AM				7:45 AM					
Vol.	579				601					
P.H.F.	0.851				0.957					
PM Peak		4:45 PM				3:45 PM				
Vol.		637				609				
P.H.F.		0.959				0.958				
Percentage	35.2%	64.8%			33.4%	66.6%				

Volumes for: Thursday, May 17, 2012 City: Oakland Project #: 12-7210-002

Location: 35th Avenue neast Brookdale Avenue.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	24	98			17	89				
12:15	23	80			16	93				
12:30	13	101			20	102				
12:45	20	93	80	372	14	94	67	378	147	750
1:00	14	85			7	104				
1:15	10	100			16	96				
1:30	10	86			17	87				
1:45	7	115	41	386	18	99	58	386	99	772
2:00	8	107			12	101				
2:15	14	110			12	119				
2:30	9	107			6	123				
2:45	5	116	36	440	7	133	37	476	73	916
3:00	4	128			5	136				
3:15	8	113			7	146				
3:30	10	116			10	139				
3:45	13	111	35	468	8	141	30	562	65	1030
4:00	2	117			8	125				
4:15	15	130			7	144				
4:30	12	154			10	143				
4:45	15	146	44	547	10	146	35	558	79	1105
5:00	17	170			14	143				
5:15	26	168			16	157				
5:30	35	163			24	154				
5:45	37	145	115	646	32	137	86	591	201	1237
6:00	47	160			36	137				
6:15	49	147			56	128				
6:30	73	127			69	116				
6:45	53	135	222	569	77	129	238	510	460	1079
7:00	95	131			76	112				
7:15	140	110			88	114				
7:30	161	87			128	96				
7:45	133	85	529	413	177	97	469	419	998	832
8:00	146	71			154	77				
8:15	124	76			140	78				
8:30	133	66			127	85				
8:45	124	85	527	298	150	87	571	327	1098	625
9:00	118	80			87	86				
9:15	92	74			86	76				
9:30	89	82			73	64				
9:45	89	68	388	304	108	69	354	295	742	599
10:00	78	78			82	56				
10:15	85	51			63	66				
10:30	91	43			75	43				
10:45	99	39	353	211	99	42	319	207	672	418
11:00	82	42			109	31				
11:15	91	34			101	23				
11:30	85	33			98	35				
11:45	80	22	338	131	91	19	399	108	737	239
Total	2708	4785	2708	4785	2663	4817	2663	4817	5371	9602
Combined Total	7493		7493		7480		7480		14973	
AM Peak	7:15 AM				7:30 AM					
Vol.	580				599					
P.H.F.	0.901				0.846					
PM Peak		4:45 PM				4:45 PM				
Vol.		647				600				
P.H.F.		0.951				0.955				
Percentage	36.1%	63.9%			35.6%	64.4%				

Volumes for: Tuesday, May 15, 2012 City: Oakland Project #: 12-7210-003

Location: MacArthur Boulevard near Patterson Avenue.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	18	94			26	85				
12:15	20	85			19	105				
12:30	12	89			15	102				
12:45	15	97	65	365	19	107	79	399	144	764
1:00	7	98			3	115				
1:15	4	106			10	116				
1:30	2	93			5	105				
1:45	5	106	18	403	10	99	28	435	46	838
2:00	9	104			2	127				
2:15	6	108			10	111				
2:30	4	104			4	105				
2:45	5	126	24	442	4	129	20	472	44	914
3:00	0	129			7	156				
3:15	4	105			2	155				
3:30	3	120			6	150				
3:45	4	114	11	468	6	125	21	586	32	1054
4:00	6	110			4	158				
4:15	3	106			6	142				
4:30	4	100			9	168				
4:45	4	119	17	435	3	127	22	595	39	1030
5:00	7	136			8	157				
5:15	11	117			10	177				
5:30	15	125			11	167				
5:45	22	118	55	496	6	180	35	681	90	1177
6:00	16	114			21	153				
6:15	27	101			18	128				
6:30	37	104			29	118				
6:45	40	110	120	429	35	141	103	540	223	969
7:00	50	87			39	102				
7:15	73	98			52	116				
7:30	122	97			82	109				
7:45	148	90	393	372	96	107	269	434	662	806
8:00	178	73			118	89				
8:15	248	75			127	85				
8:30	180	65			126	71				
8:45	173	64	779	277	98	79	469	324	1248	601
9:00	158	61			89	78				
9:15	110	72			89	69				
9:30	118	48			89	48	0			
9:45	103	37	489	218	78	59	345	254	834	472
10:00	82	34			64	43				
10:15	77	41			73	35				
10:30	75	40			85	38				
10:45	76	36	310	151	94	43	316	159	626	310
11:00	98	21			84	26				
11:15	98	18			95	21				
11:30	90	16			102	23				
11:45	95	19	381	74	102	20	383	90	764	164
Total	2662	4130	2662	4130	2090	4969	2090	4969	4752	9099
Combined Total	6792		6792		7059		7059		13851	
AM Peak	8:00 AM				8:00 AM					
Vol.	779				469					
P.H.F.	0.785				0.923					
PM Peak		4:45 PM				5:00 PM				
Vol.		497				681				
P.H.F.		0.899				0.946				
Percentage	39.2%	60.8%			29.6%	70.4%				

Volumes for: Wednesday, May 16, 2012 City: Oakland Project #: 12-7210-003

Location: MacArthur Boulevard near Patterson Avenue.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	10	103			26	107				
12:15	16	117			18	105				
12:30	17	92			13	94				
12:45	5	139	48	451	10	117	67	423	115	874
1:00	7	120			6	144				
1:15	8	95			10	149				
1:30	3	126			10	140				
1:45	4	103	22	444	11	130	37	563	59	1007
2:00	10	98			8	124				
2:15	8	127			5	113				
2:30	6	118			7	128				
2:45	3	103	27	446	4	111	24	476	51	922
3:00	4	109			3	136				
3:15	3	117			11	151				
3:30	5	104			10	120				
3:45	8	118	20	448	5	138	29	545	49	993
4:00	5	138			4	127				
4:15	4	124			2	143				
4:30	8	118			7	133				
4:45	8	141	25	521	4	153	17	556	42	1077
5:00	7	154			13	161				
5:15	9	158			9	155				
5:30	16	124			19	160				
5:45	22	132	54	568	17	161	58	637	112	1205
6:00	19	123			13	133				
6:15	35	109			24	131				
6:30	39	100			29	129				
6:45	36	112	129	444	43	128	109	521	238	965
7:00	60	109			40	130				
7:15	81	102			58	138				
7:30	131	94			63	114				
7:45	156	80	428	385	93	106	254	488	682	873
8:00	191	92			107	98				
8:15	244	75			133	99				
8:30	176	72			118	78				
8:45	181	66	792	305	103	76	461	351	1253	656
9:00	122	57			103	80				
9:15	108	64			83	81				
9:30	101	52			76	56	0			
9:45	91	57	422	230	93	64	355	281	777	511
10:00	81	56			96	29				
10:15	82	37			81	45				
10:30	85	42			89	39				
10:45	105	28	353	163	93	27	359	140	712	303
11:00	94	25			92	28				
11:15	112	22			115	38				
11:30	82	26			103	18				
11:45	89	16	377	89	113	16	423	100	800	189
Total	2697	4494	2697	4494	2193	5081	2193	5081	4890	9575
Combined Total	7191		7191		7274		7274		14465	
AM Peak	8:00 AM				8:00 AM					
Vol.	792				461					
P.H.F.	0.811				0.867					
PM Peak		4:45 PM				5:00 PM				
Vol.		577				637				
P.H.F.		0.967				0.989				
Percentage	37.5%	62.5%			30.1%	69.9%				

Volumes for: Thursday, May 17, 2012 City: Oakland Project #: 12-7210-003

Location: MacArthur Boulevard near Patterson Avenue.

Start	Northbound		Hour Totals		Southbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	19	111			15	112				
12:15	17	97			13	108				
12:30	12	124			20	111				
12:45	3	98	51	430	13	110	61	441	112	871
1:00	6	112			7	130				
1:15	9	117			13	108				
1:30	5	111			10	130				
1:45	5	105	25	445	9	107	39	475	64	920
2:00	8	120			5	118				
2:15	10	106			9	126				
2:30	5	108			5	122				
2:45	4	138	27	472	11	107	30	473	57	945
3:00	6	148			12	163				
3:15	4	125			4	167				
3:30	5	129			7	130				
3:45	7	128	22	530	7	121	30	581	52	1111
4:00	2	124			5	144				
4:15	5	116			7	125				
4:30	7	134			5	143				
4:45	7	119	21	493	6	137	23	549	44	1042
5:00	6	130			11	153				
5:15	15	122			9	177				
5:30	14	124			13	159				
5:45	26	151	61	527	15	151	48	640	109	1167
6:00	21	117			21	142				
6:15	32	109			19	146				
6:30	31	111			37	148				
6:45	43	126	127	463	34	136	111	572	238	1035
7:00	65	103			35	115				
7:15	85	98			65	104				
7:30	132	87			64	90				
7:45	166	84	448	372	105	97	269	406	717	778
8:00	222	80			108	110				
8:15	239	73			145	84				
8:30	174	67			116	75				
8:45	164	56	799	276	110	75	479	344	1278	620
9:00	138	61			84	81				
9:15	103	77			86	60				
9:30	95	75			78	82	0			
9:45	97	49	433	262	105	52	353	275	786	537
10:00	89	46			86	62				
10:15	88	44			72	56				
10:30	85	37			104	39				
10:45	101	26	363	153	105	43	367	200	730	353
11:00	76	28			92	34				
11:15	91	24			98	36				
11:30	89	12			97	29				
11:45	123	18	379	82	111	21	398	120	777	202
Total	2756	4505	2756	4505	2208	5076	2208	5076	4964	9581
Combined Total	7261		7261		7284		7284		14545	
AM Peak	7:45 AM				8:00 AM					
Vol.	801				479					
P.H.F.	0.838				0.826					
PM Peak		2:45 PM				5:00 PM				
Vol.		540				640				
P.H.F.		0.905				0.904				
Percentage	38.0%	62.0%			30.3%	69.7%				

Volumes for: Tuesday, May 15, 2012 City: Oakland Project #: 12-7210-004

Location: Maybelle Avenue near Masterson Street.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	6			4	6				
12:15	3	10			4	4				
12:30	1	3			1	4				
12:45	1	9	8	28	2	12	11	26	19	54
1:00	0	10			2	5				
1:15	0	11			0	9				
1:30	0	6			2	10				
1:45	0	3	0	30	1	7	5	31	5	61
2:00	2	6			1	10				
2:15	0	9			1	13				
2:30	0	8			0	7				
2:45	0	5	2	28	1	13	3	43	5	71
3:00	0	13			0	8				
3:15	0	38			0	16				
3:30	0	6			1	6				
3:45	1	7	1	64	1	10	2	40	3	104
4:00	1	7			1	13				
4:15	0	11			0	16				
4:30	2	6			0	4				
4:45	3	9	6	33	0	19	1	52	7	85
5:00	0	9			0	13				
5:15	3	8			1	18				
5:30	9	8			1	21				
5:45	2	17	14	42	0	19	2	71	16	113
6:00	3	10			1	16				
6:15	4	8			0	13				
6:30	7	13			3	20				
6:45	7	8	21	39	3	17	7	66	28	105
7:00	13	13			3	14				
7:15	7	11			3	16				
7:30	15	14			6	16				
7:45	13	6	48	44	7	13	19	59	67	103
8:00	10	9			5	17				
8:15	19	6			10	14				
8:30	16	4			7	10				
8:45	8	7	53	26	7	10	29	51	82	77
9:00	14	5			15	6				
9:15	11	8			8	16				
9:30	6	8			5	15				
9:45	6	4	37	25	8	5	36	42	73	67
10:00	7	7			8	10				
10:15	9	3			9	12				
10:30	5	4			4	11				
10:45	8	3	29	17	6	2	27	35	56	52
11:00	6	3			4	9				
11:15	7	5			5	2				
11:30	7	4			8	4				
11:45	8	1	28	13	10	4	27	19	55	32
Total	247	389	247	389	169	535	169	535	416	924
Combined Total	636		636		704		704		1340	
AM Peak	7:45 AM				8:15 AM					
Vol.	58				39					
P.H.F.	0.763				0.650					
PM Peak		2:30 PM				5:15 PM				
Vol.		64				74				
P.H.F.		0.421				0.881				
Percentage	38.8%	61.2%			24.0%	76.0%				

Volumes for: Wednesday, May 16, 2012 City: Oakland Project #: 12-7210-004

Location: Maybelle Avenue near Masterson Street.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	10			1	8				
12:15	2	12			2	9				
12:30	0	9			1	9				
12:45	0	11	3	42	2	11	6	37	9	79
1:00	0	6			2	8				
1:15	0	13			3	9				
1:30	3	5			2	9				
1:45	1	10	4	34	1	8	8	34	12	68
2:00	2	6			1	16				
2:15	2	8			1	6				
2:30	0	21			0	11				
2:45	0	7	4	42	2	13	4	46	8	88
3:00	1	8			1	9				
3:15	0	15			1	10				
3:30	0	6			0	5				
3:45	1	12	2	41	1	15	3	39	5	80
4:00	0	8			0	13				
4:15	1	9			0	12				
4:30	1	15			0	19				
4:45	3	6	5	38	0	11	0	55	5	93
5:00	4	7			1	15				
5:15	3	7			1	23				
5:30	4	20			2	26				
5:45	2	15	13	49	0	20	4	84	17	133
6:00	8	13			2	25				
6:15	7	14			0	24				
6:30	6	9			5	20				
6:45	6	14	27	50	2	20	9	89	36	139
7:00	9	11			1	23				
7:15	7	17			3	20				
7:30	13	12			6	15				
7:45	17	13	46	53	4	11	14	69	60	122
8:00	18	12			8	8				
8:15	21	8			10	24				
8:30	11	6			12	17				
8:45	15	5	65	31	8	11	38	60	103	91
9:00	9	5			17	17				
9:15	6	4			13	8				
9:30	10	7			11	11				
9:45	6	3	31	19	7	14	48	50	79	69
10:00	7	8			6	6				
10:15	7	7			6	7				
10:30	8	4			5	5				
10:45	6	7	28	26	9	8	26	26	54	52
11:00	13	6			8	9				
11:15	2	1			7	1				
11:30	5	6			9	3				
11:45	10	0	30	13	8	6	32	19	62	32
Total	258	438	258	438	192	608	192	608	450	1046
Combined Total	696		696		800		800		1496	
AM Peak	7:30 AM				8:30 AM					
Vol.	69				50					
P.H.F.	0.821				0.735					
PM Peak		5:30 PM				5:30 PM				
Vol.		62				95				
P.H.F.		0.775				0.913				
Percentage	37.1%	62.9%			24.0%	76.0%				

Volumes for: Thursday, May 17, 2012 City: Oakland Project #: 12-7210-004

Location: Maybelle Avenue near Masterson Street.

Start	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	7			2	9				
12:15	1	10			1	6				
12:30	1	4			2	10				
12:45	1	8	3	29	3	10	8	35	11	64
1:00	0	9			5	12				
1:15	1	16			2	8				
1:30	1	6			1	11				
1:45	1	11	3	42	0	9	8	40	11	82
2:00	0	10			1	13				
2:15	2	5			0	11				
2:30	0	10			0	10				
2:45	0	13	2	38	0	19	1	53	3	91
3:00	0	21			0	6				
3:15	0	23			1	10				
3:30	0	7			0	12				
3:45	2	11	2	62	1	12	2	40	4	102
4:00	1	4			0	9				
4:15	0	9			0	13				
4:30	2	10			1	9				
4:45	1	9	4	32	0	17	1	48	5	80
5:00	2	6			0	15				
5:15	3	14			1	22				
5:30	4	10			1	7				
5:45	4	11	13	41	0	30	2	74	15	115
6:00	4	8			0	19				
6:15	1	10			1	22				
6:30	5	9			3	15				
6:45	5	10	15	37	1	15	5	71	20	108
7:00	10	10			1	14				
7:15	7	5			4	23				
7:30	13	10			5	12				
7:45	11	19	41	44	5	12	15	61	56	105
8:00	21	7			9	14				
8:15	14	7			14	12				
8:30	19	6			9	11				
8:45	14	2	68	22	6	7	38	44	106	66
9:00	15	3			11	12				
9:15	7	9			8	7				
9:30	9	7			10	13				
9:45	7	1	38	20	4	5	33	37	71	57
10:00	11	5			8	8				
10:15	9	3			7	16				
10:30	5	7			9	10				
10:45	14	7	39	22	12	8	36	42	75	64
11:00	8	5			7	7				
11:15	6	0			5	5				
11:30	7	2			12	2				
11:45	8	1	29	8	12	6	36	20	65	28
Total	257	397	257	397	185	565	185	565	442	962
Combined Total	654		654		750		750		1404	
AM Peak	8:00 AM				8:15 AM					
Vol.	68				40					
P.H.F.	0.810				0.714					
PM Peak		2:30 PM				5:45 PM				
Vol.		67				86				
P.H.F.		0.728				0.717				
Percentage	39.3%	60.7%			24.7%	75.3%				

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-001 SR13-Redwood
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	SR-13 Southbound Off-Ramp Southbound				Redwood Road Westbound				Aliso Avenue Northbound				Redwood Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	27	6	13	46	1	37	0	38	6	0	9	15	0	69	12	81	180
07:15	32	3	18	53	1	62	0	63	4	0	8	12	0	124	12	136	264
07:30	46	8	16	70	12	103	0	115	6	0	17	23	0	191	21	212	420
07:45	92	6	32	130	33	160	0	193	14	0	21	35	0	246	33	279	637
Total	197	23	79	299	47	362	0	409	30	0	55	85	0	630	78	708	1501
08:00	95	16	32	143	27	185	0	212	18	0	14	32	0	161	20	181	568
08:15	104	20	30	154	16	127	0	143	18	0	19	37	0	168	32	200	534
08:30	89	25	36	150	18	228	0	246	16	0	23	39	0	182	66	248	683
08:45	94	12	35	141	12	107	0	119	21	0	18	39	0	177	33	210	509
Total	382	73	133	588	73	647	0	720	73	0	74	147	0	688	151	839	2294
16:00	58	22	59	139	5	100	0	105	9	0	9	18	0	121	15	136	398
16:15	54	20	59	133	3	98	0	101	12	0	9	21	0	109	15	124	379
16:30	70	22	66	158	7	89	0	96	9	0	11	20	0	138	17	155	429
16:45	86	13	62	161	9	85	0	94	9	0	13	22	0	141	18	159	436
Total	268	77	246	591	24	372	0	396	39	0	42	81	0	509	65	574	1642
17:00	76	30	64	170	15	95	0	110	16	0	15	31	0	122	18	140	451
17:15	112	33	57	202	12	115	0	127	14	0	15	29	0	130	20	150	508
17:30	89	30	78	197	23	112	0	135	13	0	13	26	0	154	26	180	538
17:45	140	32	65	237	14	122	0	136	12	0	16	28	0	165	17	182	583
Total	417	125	264	806	64	444	0	508	55	0	59	114	0	571	81	652	2080
Grand Total	1264	298	722	2284	208	1825	0	2033	197	0	230	427	0	2398	375	2773	7517
Apprch %	55.3	13	31.6		10.2	89.8	0		46.1	0	53.9		0	86.5	13.5		
Total %	16.8	4	9.6	30.4	2.8	24.3	0	27	2.6	0	3.1	5.7	0	31.9	5	36.9	

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-001 SR13-Redwood
Site Code : 00000000
Start Date : 5/16/2012
Page No : 2

	SR-13 Southbound Off-Ramp Southbound				Redwood Road Westbound				Aliso Avenue Northbound				Redwood Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	92	6	32	130	**33**	160	0	193	14	0	21	35	0	**246**	33	**279**	637
08:00	95	16	32	143	27	185	0	212	**18**	0	14	32	0	161	20	181	568
08:15	**104**	20	30	**154**	16	127	0	143	18	0	19	37	0	168	32	200	534
08:30	89	**25**	**36**	150	18	**228**	0	**246**	16	0	**23**	**39**	0	182	**66**	248	**683**
Total Volume	380	67	130	577	94	700	0	794	66	0	77	143	0	757	151	908	2422
% App. Total	65.9	11.6	22.5		11.8	88.2	0		46.2	0	53.8		0	83.4	16.6		
PHF	.913	.670	.903	.937	.712	.768	.000	.807	.917	.000	.837	.917	.000	.769	.572	.814	.887

All Traffic Data

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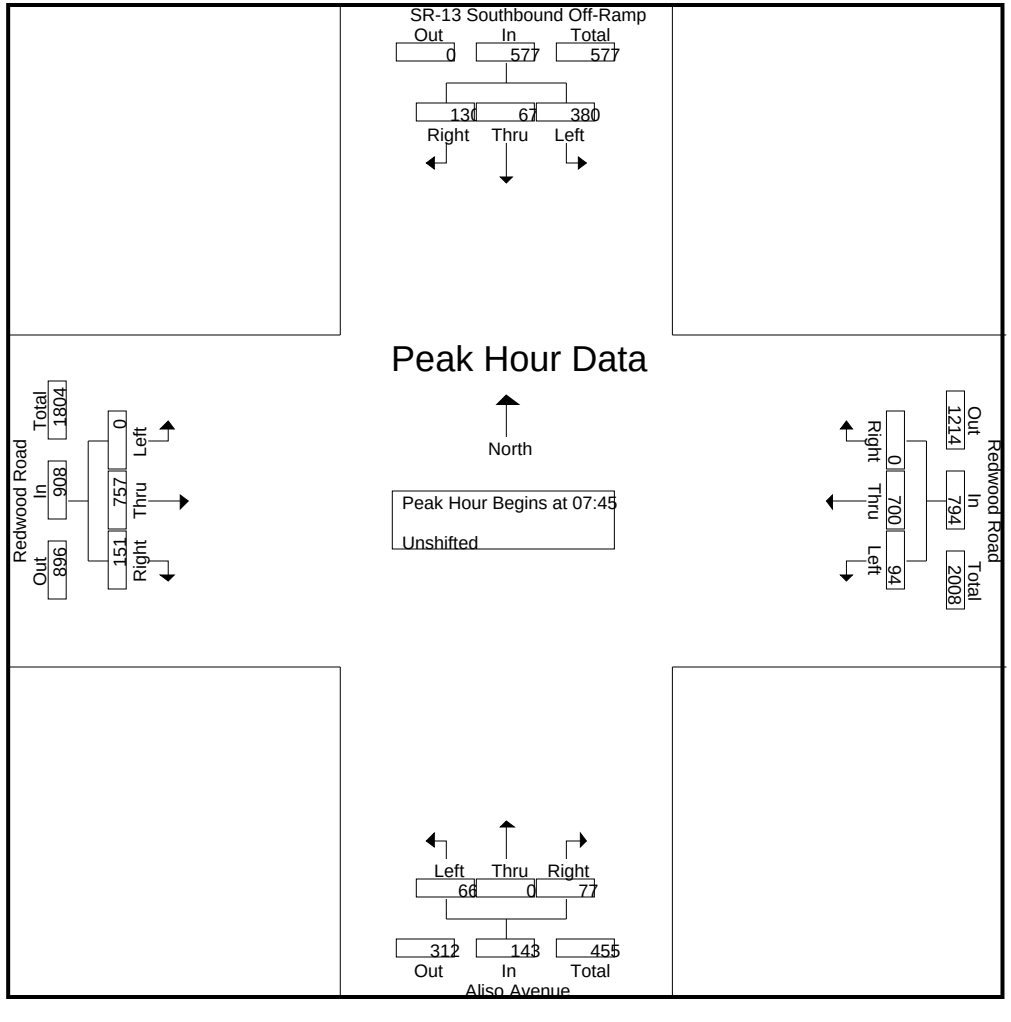
City of Oakland

File Name : 12-7209-001 SR13-Redwood
Site Code : 00000000
Start Date : 5/16/2012
Page No : 3

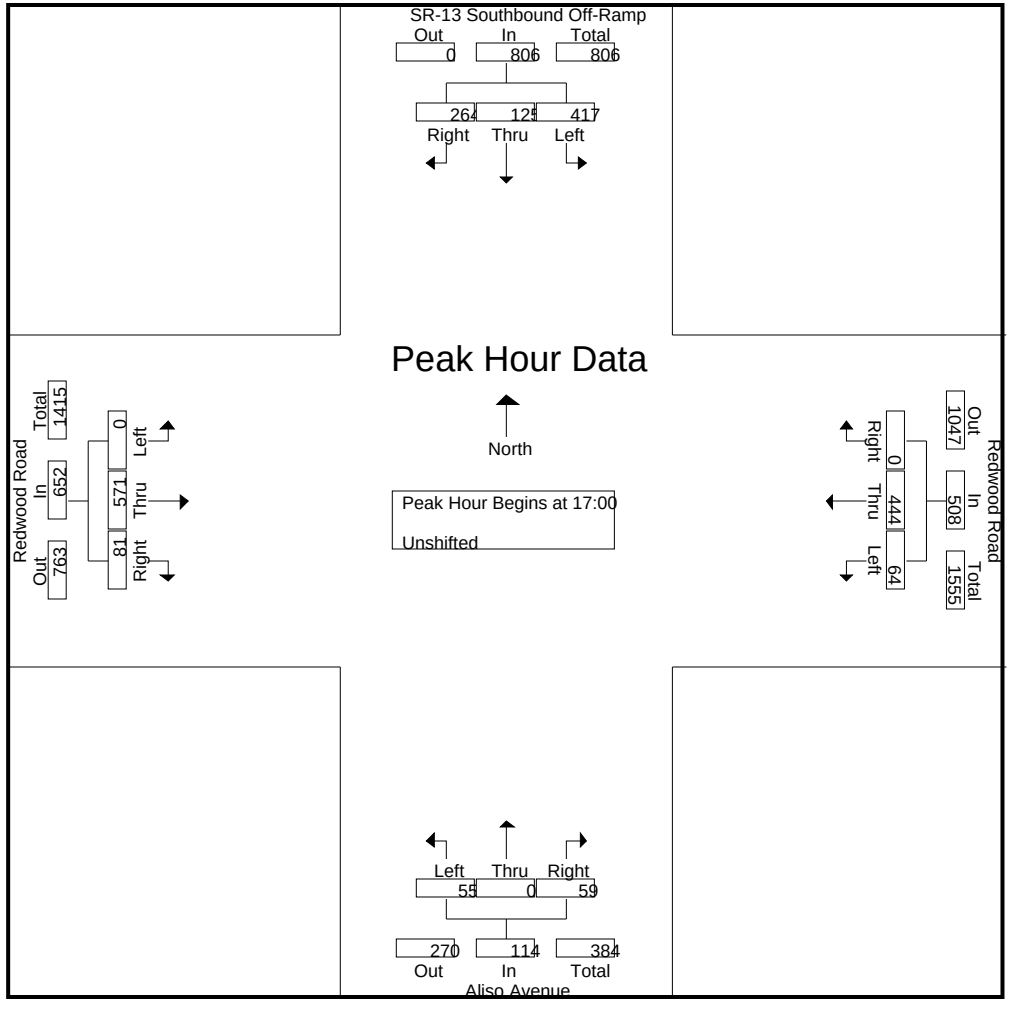


All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-001 SR13-Redwood
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-002 MacArthur-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	MacArthur Boulevard Southbound				35th Avenue Westbound				MacArthur Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	6	9	11	26	4	74	6	84	21	13	7	41	7	46	9	62	213
07:15	10	15	14	39	5	100	4	109	31	17	13	61	10	115	30	155	364
07:30	16	27	19	62	16	175	10	201	34	29	21	84	9	160	24	193	540
07:45	33	36	25	94	31	238	13	282	59	51	53	163	10	191	19	220	759
Total	65	87	69	221	56	587	33	676	145	110	94	349	36	512	82	630	1876
08:00	30	51	15	96	25	211	20	256	66	92	34	192	27	137	31	195	739
08:15	24	65	20	109	22	245	20	287	50	102	28	180	21	181	36	238	814
08:30	26	42	18	86	15	181	15	211	67	102	22	191	11	123	41	175	663
08:45	13	41	23	77	26	147	16	189	41	68	18	127	15	101	40	156	549
Total	93	199	76	368	88	784	71	943	224	364	102	690	74	542	148	764	2765
16:00	20	47	22	89	22	121	17	160	46	36	29	111	16	148	49	213	573
16:15	17	50	12	79	33	129	14	176	36	52	32	120	29	129	35	193	568
16:30	14	48	17	79	22	115	13	150	44	49	31	124	20	156	61	237	590
16:45	24	53	14	91	30	132	9	171	39	54	27	120	19	165	56	240	622
Total	75	198	65	338	107	497	53	657	165	191	119	475	84	598	201	883	2353
17:00	24	55	23	102	30	133	9	172	48	39	41	128	29	149	50	228	630
17:15	23	63	22	108	26	141	15	182	45	36	46	127	20	160	51	231	648
17:30	23	69	15	107	28	142	12	182	38	54	19	111	22	192	47	261	661
17:45	10	77	12	99	29	127	18	174	39	38	28	105	27	195	32	254	632
Total	80	264	72	416	113	543	54	710	170	167	134	471	98	696	180	974	2571
Grand Total	313	748	282	1343	364	2411	211	2986	704	832	449	1985	292	2348	611	3251	9565
Apprch %	23.3	55.7	21		12.2	80.7	7.1		35.5	41.9	22.6		9	72.2	18.8		
Total %	3.3	7.8	2.9	14	3.8	25.2	2.2	31.2	7.4	8.7	4.7	20.8	3.1	24.5	6.4	34	

All Traffic Data

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City of Oakland

File Name : 12-7209-001 SR13-Redwood
Site Code : 00000000
Start Date : 5/16/2012
Page No : 4

	SR-13 Southbound Off-Ramp Southbound				Redwood Road Westbound				Aliso Avenue Northbound				Redwood Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	76	30	64	170	15	95	0	110	**16**	0	15	**31**	0	122	18	140	451
17:15	112	**33**	57	202	12	115	0	127	14	0	15	29	0	130	20	150	508
17:30	89	30	**78**	197	**23**	112	0	135	13	0	13	26	0	154	**26**	180	538
17:45	**140**	32	65	**237**	14	**122**	0	**136**	12	0	**16**	28	0	**165**	17	**182**	**583**
Total Volume	417	125	264	806	64	444	0	508	55	0	59	114	0	571	81	652	2080
% App. Total	51.7	15.5	32.8		12.6	87.4	0		48.2	0	51.8		0	87.6	12.4		
PHF	.745	.947	.846	.850	.696	.910	.000	.934	.859	.000	.922	.919	.000	.865	.779	.896	.892

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-002 MacArthur-35th
Site Code : 00000000
Start Date : 5/16/2012

	MacArthur Boulevard Southbound				35th Avenue Westbound				MacArthur Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	**33**	36	**25**	94	**31**	238	13	282	59	51	**53**	163	10	**191**	19	220	759
08:00	30	51	15	96	25	211	**20**	256	66	92	34	**192**	**27**	137	31	195	739
08:15	24	**65**	20	**109**	22	**245**	20	**287**	50	**102**	28	180	21	181	36	**238**	**814**
08:30	26	42	18	86	15	181	15	211	**67**	102	22	191	11	123	**41**	175	663
Total Volume	113	194	78	385	93	875	68	1036	242	347	137	726	69	632	127	828	2975
% App. Total	29.4	50.4	20.3		9	84.5	6.6		33.3	47.8	18.9		8.3	76.3	15.3		
PHF	.856	.746	.780	.883	.750	.893	.850	.902	.903	.850	.646	.945	.639	.827	.774	.870	.914

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-002 MacArthur-35th
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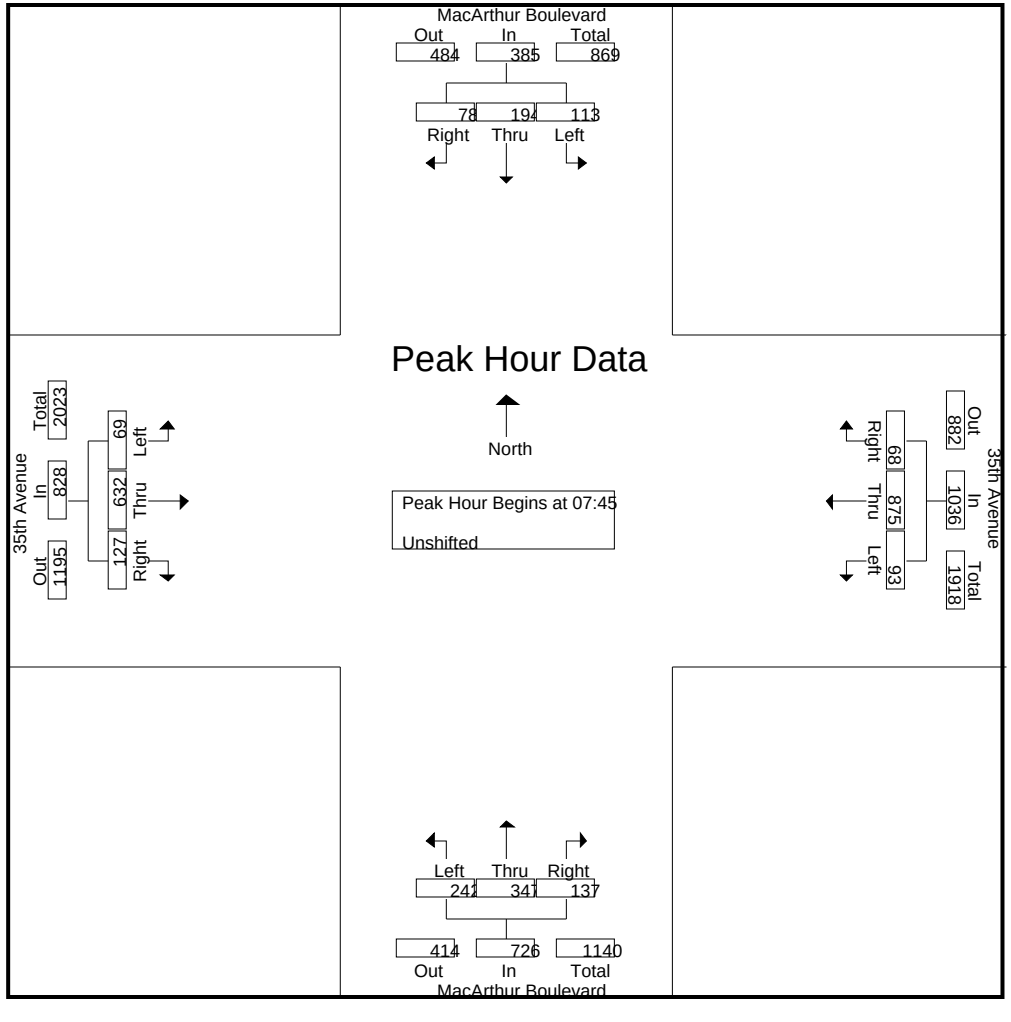
Start Date : 5/16/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-002 MacArthur-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 4

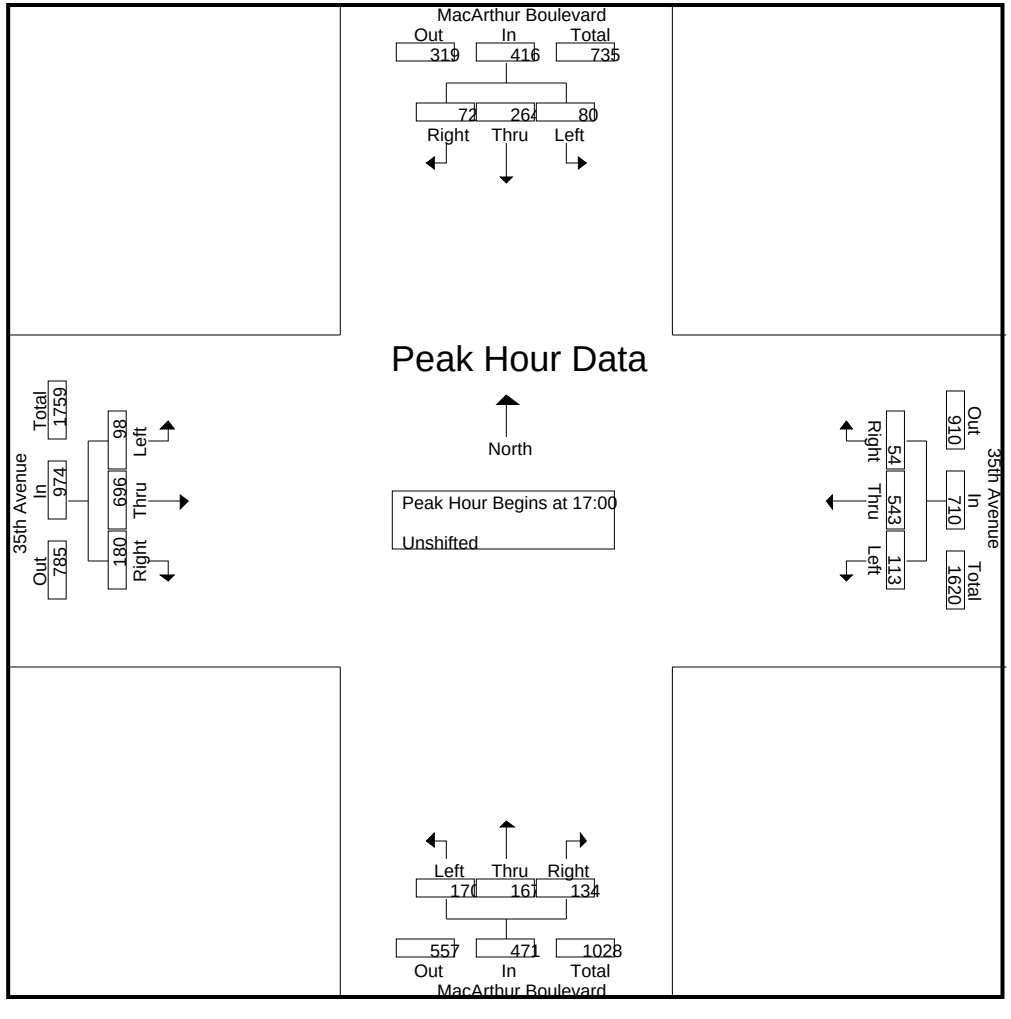
	MacArthur Boulevard Southbound				35th Avenue Westbound				MacArthur Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**24**	55	**23**	102	**30**	133	9	172	**48**	39	41	**128**	**29**	149	50	228	630
17:15	23	63	22	**108**	26	141	15	**182**	45	36	**46**	127	20	160	**51**	231	648
17:30	23	69	15	107	28	**142**	12	182	38	**54**	19	111	22	192	47	**261**	**661**
17:45	10	**77**	12	99	29	127	**18**	174	39	38	28	105	27	**195**	32	254	632
Total Volume	80	264	72	416	113	543	54	710	170	167	134	471	98	696	180	974	2571
% App. Total	19.2	63.5	17.3		15.9	76.5	7.6		36.1	35.5	28.5		10.1	71.5	18.5		
PHF	.833	.857	.783	.963	.942	.956	.750	.975	.885	.773	.728	.920	.845	.892	.882	.933	.972

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-002 MacArthur-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-003 MacArthur-39th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	MacArthur Boulevard Southbound				39th Avenue Westbound				MacArthur Boulevard Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	3	39	0	42	2	0	6	8	0	47	2	49	0	0	0	0	99
07:15	1	60	0	61	4	0	4	8	0	60	4	64	0	0	0	0	133
07:30	1	66	0	67	4	0	4	8	0	105	3	108	0	0	0	0	183
07:45	4	101	0	105	8	0	12	20	0	123	7	130	0	0	0	0	255
Total	9	266	0	275	18	0	26	44	0	335	16	351	0	0	0	0	670
08:00	1	102	0	103	5	0	17	22	0	186	2	188	0	0	0	0	313
08:15	5	133	0	138	7	0	12	19	0	179	4	183	0	0	0	0	340
08:30	2	110	0	112	8	0	18	26	0	154	3	157	0	0	0	0	295
08:45	5	107	0	112	6	0	7	13	0	154	5	159	0	0	0	0	284
Total	13	452	0	465	26	0	54	80	0	673	14	687	0	0	0	0	1232
16:00	8	136	0	144	5	0	11	16	0	121	9	130	0	0	0	0	290
16:15	13	137	0	150	6	0	13	19	0	111	7	118	0	0	0	0	287
16:30	14	135	0	149	3	0	12	15	0	110	7	117	0	0	0	0	281
16:45	6	137	0	143	5	0	10	15	0	112	5	117	0	0	0	0	275
Total	41	545	0	586	19	0	46	65	0	454	28	482	0	0	0	0	1133
17:00	15	152	0	167	9	0	10	19	0	141	10	151	0	0	0	0	337
17:15	7	131	0	138	6	0	11	17	0	136	3	139	0	0	0	0	294
17:30	12	167	0	179	7	0	10	17	0	126	8	134	0	0	0	0	330
17:45	7	162	0	169	8	0	11	19	0	104	13	117	0	0	0	0	305
Total	41	612	0	653	30	0	42	72	0	507	34	541	0	0	0	0	1266
Grand Total	104	1875	0	1979	93	0	168	261	0	1969	92	2061	0	0	0	0	4301
Apprch %	5.3	94.7	0		35.6	0	64.4		0	95.5	4.5		0	0	0		
Total %	2.4	43.6	0	46	2.2	0	3.9	6.1	0	45.8	2.1	47.9	0	0	0	0	

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-003 MacArthur-39th
Site Code : 00000000
Start Date : 5/16/2012

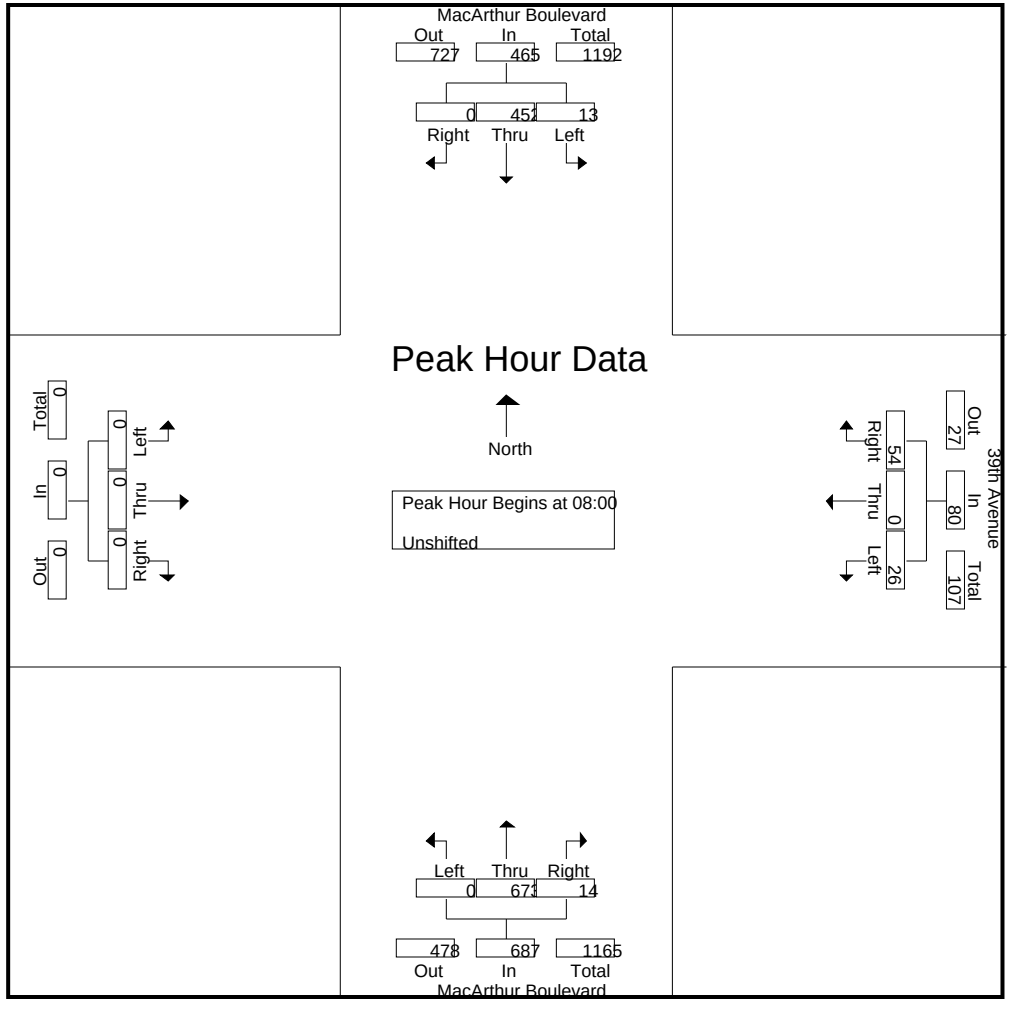
	MacArthur Boulevard Southbound				39th Avenue Westbound				MacArthur Boulevard Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	1	102	0	103	5	0	17	22	0	**186**	2	**188**	0	0	0	0	313
08:15	**5**	**133**	0	**138**	7	0	12	19	0	179	4	183	0	0	0	0	**340**
08:30	2	110	0	112	**8**	0	**18**	**26**	0	154	3	157	0	0	0	0	295
08:45	5	107	0	112	6	0	7	13	0	154	**5**	159	0	0	0	0	284
Total Volume	13	452	0	465	26	0	54	80	0	673	14	687	0	0	0	0	1232
% App. Total	2.8	97.2	0		32.5	0	67.5		0	98	2		0	0	0		
PHF	.650	.850	.000	.842	.813	.000	.750	.769	.000	.905	.700	.914	.000	.000	.000	.000	.906

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-003 MacArthur-39th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-003 MacArthur-39th
Site Code : 00000000
Start Date : 5/16/2012

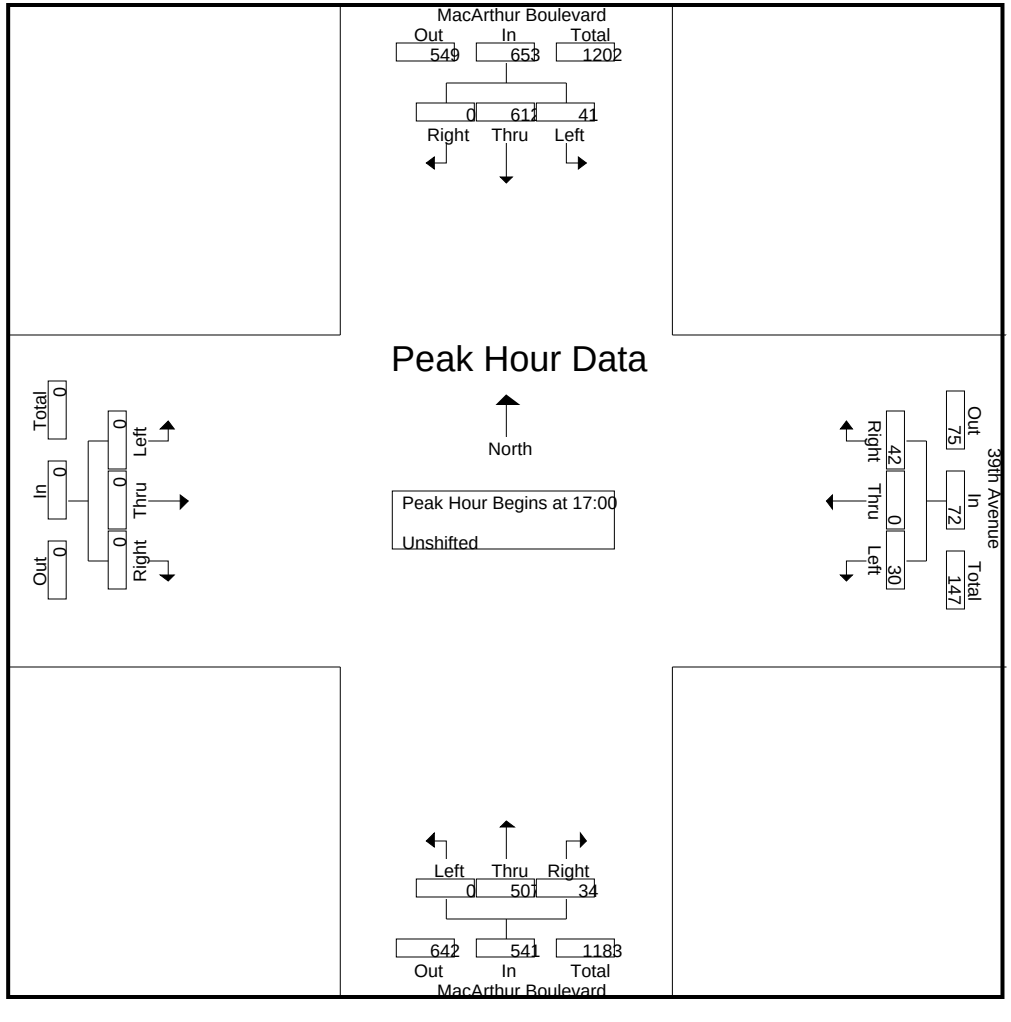
	MacArthur Boulevard Southbound				39th Avenue Westbound				MacArthur Boulevard Northbound				Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**15**	152	0	167	**9**	0	10	**19**	0	**141**	10	**151**	0	0	0	0	**337**
17:15	7	131	0	138	6	0	**11**	17	0	136	3	139	0	0	0	0	294
17:30	12	**167**	0	**179**	7	0	10	17	0	126	8	134	0	0	0	0	330
17:45	7	162	0	169	8	0	11	19	0	104	**13**	117	0	0	0	0	305
Total Volume	41	612	0	653	30	0	42	72	0	507	34	541	0	0	0	0	1266
% App. Total	6.3	93.7	0		41.7	0	58.3		0	93.7	6.3		0	0	0		
PHF	.683	.916	.000	.912	.833	.000	.955	.947	.000	.899	.654	.896	.000	.000	.000	.000	.939

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-003 MacArthur-39th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-004 MacArthur-Maybelle
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	MacArthur Boulevard Southbound				Maybelle Avenue Westbound				MacArthur Boulevard Northbound				Maybelle Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	1	43	0	44	8	0	4	12	3	49	2	54	0	0	1	1	111
07:15	1	63	0	64	7	1	4	12	0	63	2	65	0	1	13	14	155
07:30	0	72	0	72	5	0	11	16	2	99	5	106	0	1	8	9	203
07:45	3	107	0	110	6	0	9	15	4	120	3	127	1	2	10	13	265
Total	5	285	0	290	26	1	28	55	9	331	12	352	1	4	32	37	734
08:00	6	97	1	104	6	1	19	26	6	171	11	188	0	0	9	9	327
08:15	8	132	1	141	5	1	14	20	9	168	10	187	2	1	16	19	367
08:30	2	114	2	118	7	0	9	16	6	152	1	159	1	0	13	14	307
08:45	6	106	0	112	4	0	10	14	11	147	9	167	1	3	10	14	307
Total	22	449	4	475	22	2	52	76	32	638	31	701	4	4	48	56	1308
16:00	7	139	0	146	4	2	6	12	9	122	6	137	2	3	8	13	308
16:15	12	131	4	147	6	1	14	21	12	106	16	134	0	1	11	12	314
16:30	10	124	1	135	4	0	10	14	5	108	6	119	0	1	10	11	279
16:45	17	131	1	149	4	1	13	18	9	104	5	118	2	2	22	26	311
Total	46	525	6	577	18	4	43	65	35	440	33	508	4	7	51	62	1212
17:00	10	150	2	162	5	0	11	16	8	137	18	163	0	1	8	9	350
17:15	15	127	0	142	9	0	15	24	7	126	14	147	0	1	16	17	330
17:30	11	155	2	168	3	0	8	11	9	129	7	145	0	0	11	11	335
17:45	14	153	1	168	2	0	9	11	10	105	13	128	0	1	18	19	326
Total	50	585	5	640	19	0	43	62	34	497	52	583	0	3	53	56	1341
Grand Total	123	1844	15	1982	85	7	166	258	110	1906	128	2144	9	18	184	211	4595
Apprch %	6.2	93	0.8		32.9	2.7	64.3		5.1	88.9	6		4.3	8.5	87.2		
Total %	2.7	40.1	0.3	43.1	1.8	0.2	3.6	5.6	2.4	41.5	2.8	46.7	0.2	0.4	4	4.6	

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-004 MacArthur-Maybelle
Site Code : 00000000
Start Date : 5/16/2012

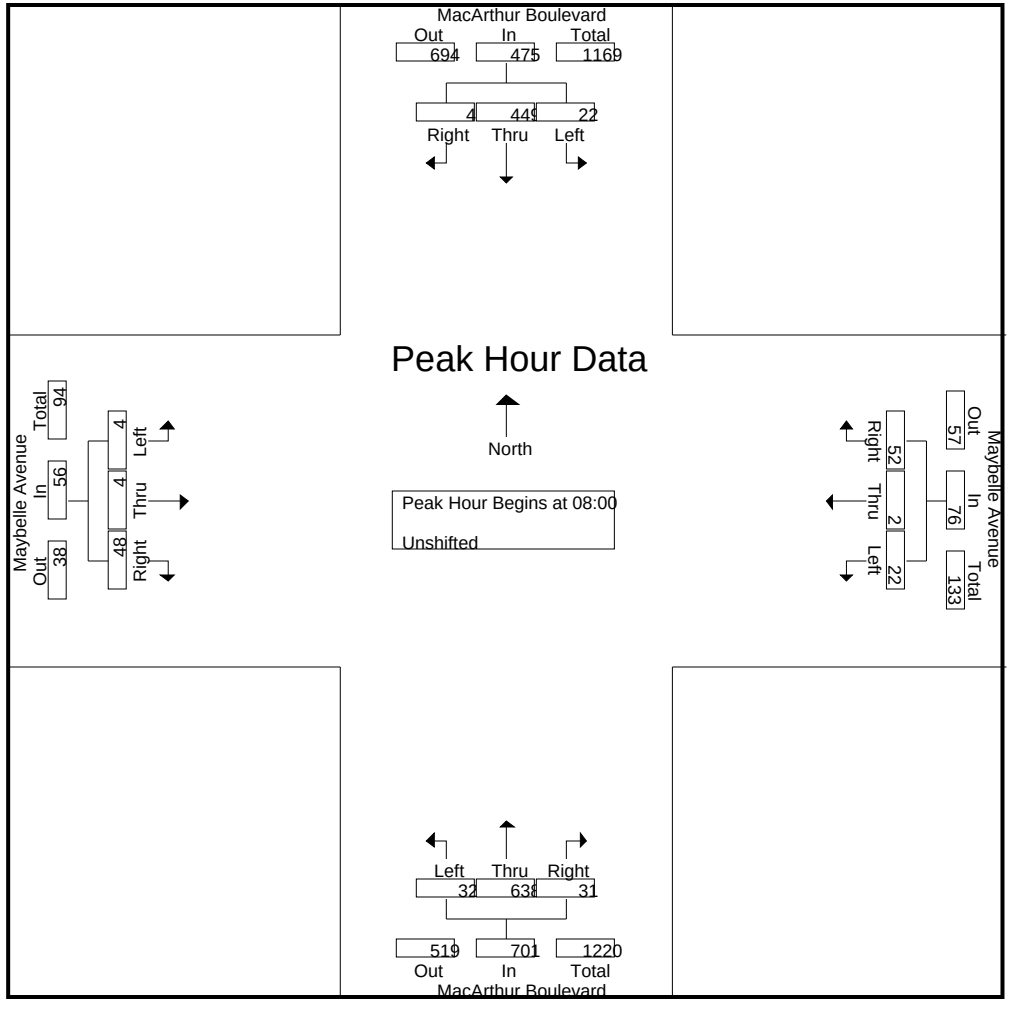
	MacArthur Boulevard Southbound				Maybelle Avenue Westbound				MacArthur Boulevard Northbound				Maybelle Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	6	97	1	104	6	**1**	**19**	**26**	6	**171**	**11**	**188**	0	0	9	9	327
08:15	**8**	**132**	1	**141**	5	1	14	20	9	168	10	187	**2**	1	**16**	**19**	**367**
08:30	2	114	**2**	118	**7**	0	9	16	6	152	1	159	1	0	13	14	307
08:45	6	106	0	112	4	0	10	14	**11**	147	9	167	1	**3**	10	14	307
Total Volume	22	449	4	475	22	2	52	76	32	638	31	701	4	4	48	56	1308
% App. Total	4.6	94.5	0.8		28.9	2.6	68.4		4.6	91	4.4		7.1	7.1	85.7		
PHF	.688	.850	.500	.842	.786	.500	.684	.731	.727	.933	.705	.932	.500	.333	.750	.737	.891

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-004 MacArthur-Maybelle
Site Code : 00000000
Start Date : 5/16/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-004 MacArthur-Maybelle
Site Code : 00000000
Start Date : 5/16/2012
Page No : 4

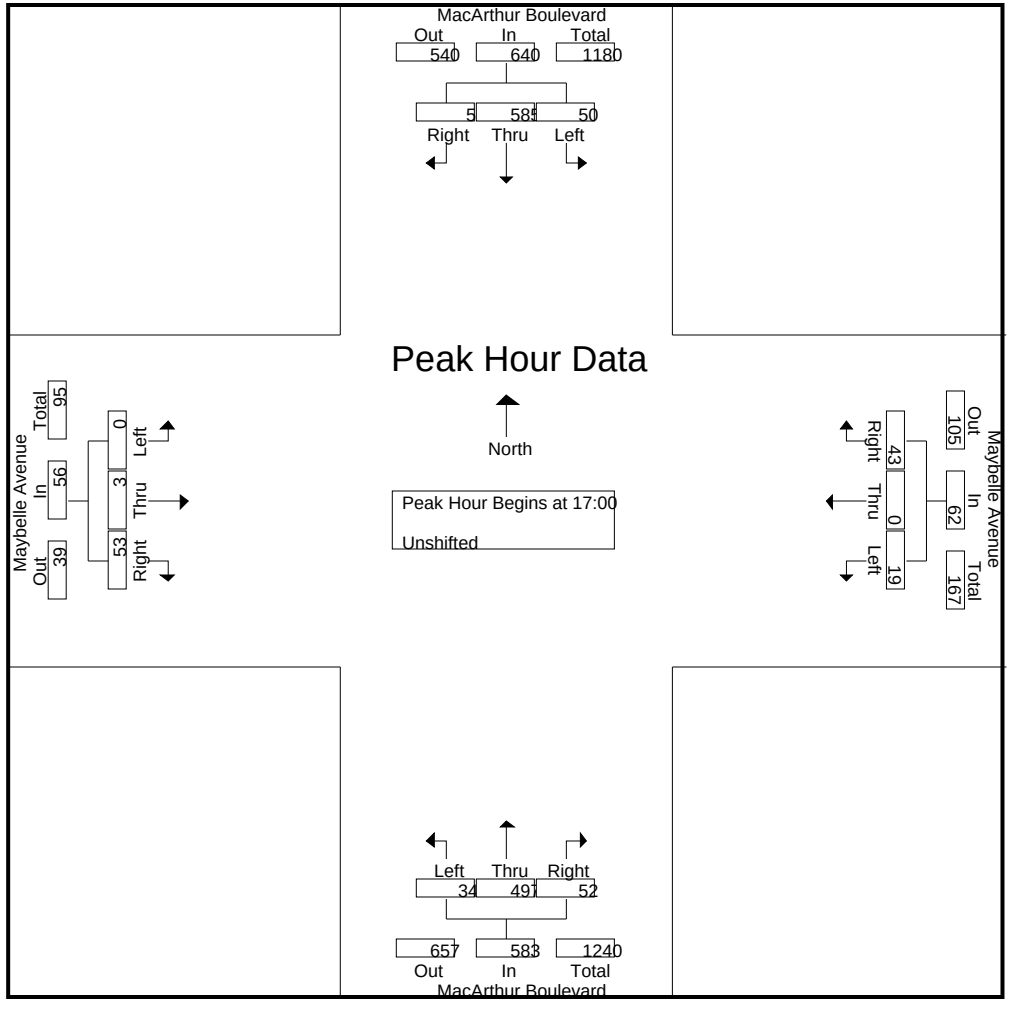
	MacArthur Boulevard Southbound				Maybelle Avenue Westbound				MacArthur Boulevard Northbound				Maybelle Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	10	150	**2**	162	5	0	11	16	8	**137**	**18**	**163**	0	**1**	8	9	**350**
17:15	**15**	127	0	142	**9**	0	**15**	**24**	7	126	14	147	0	1	16	17	330
17:30	11	**155**	2	**168**	3	0	8	11	9	129	7	145	0	0	11	11	335
17:45	14	153	1	168	2	0	9	11	**10**	105	13	128	0	1	**18**	**19**	326
Total Volume	50	585	5	640	19	0	43	62	34	497	52	583	0	3	53	56	1341
% App. Total	7.8	91.4	0.8		30.6	0	69.4		5.8	85.2	8.9		0	5.4	94.6		
PHF	.833	.944	.625	.952	.528	.000	.717	.646	.850	.907	.722	.894	.000	.750	.736	.737	.958

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-004 MacArthur-Maybelle
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-005 Foothill-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	Foothill Boulevard Southbound				35th Avenue Westbound				Foothill Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	8	34	5	47	9	37	21	67	7	60	10	77	6	47	11	64	255
07:15	7	56	7	70	9	55	17	81	16	76	14	106	3	59	10	72	329
07:30	11	72	5	88	14	68	27	109	12	107	18	137	8	86	24	118	452
07:45	7	49	5	61	13	100	22	135	20	139	23	182	15	124	27	166	544
Total	33	211	22	266	45	260	87	392	55	382	65	502	32	316	72	420	1580
08:00	9	59	7	75	17	101	25	143	23	115	33	171	11	115	23	149	538
08:15	20	74	3	97	18	88	28	134	16	128	19	163	8	119	18	145	539
08:30	17	72	7	96	21	93	17	131	20	105	29	154	8	97	24	129	510
08:45	6	59	7	72	20	69	20	109	16	124	40	180	12	87	22	121	482
Total	52	264	24	340	76	351	90	517	75	472	121	668	39	418	87	544	2069
16:00	25	123	9	157	43	73	26	142	5	92	24	121	16	82	7	105	525
16:15	23	134	15	172	28	68	24	120	6	99	36	141	12	80	15	107	540
16:30	18	109	19	146	32	85	17	134	9	103	27	139	15	82	10	107	526
16:45	20	133	17	170	27	60	24	111	5	116	34	155	22	100	7	129	565
Total	86	499	60	645	130	286	91	507	25	410	121	556	65	344	39	448	2156
17:00	25	84	15	124	25	126	22	173	31	85	17	133	4	115	21	140	570
17:15	17	116	4	137	35	133	10	178	37	75	22	134	3	113	29	145	594
17:30	10	108	9	127	28	139	18	185	29	71	24	124	6	104	35	145	581
17:45	17	103	8	128	23	135	23	181	19	70	22	111	12	124	28	164	584
Total	69	411	36	516	111	533	73	717	116	301	85	502	25	456	113	594	2329
Grand Total	240	1385	142	1767	362	1430	341	2133	271	1565	392	2228	161	1534	311	2006	8134
Apprch %	13.6	78.4	8		17	67	16		12.2	70.2	17.6		8	76.5	15.5		
Total %	3	17	1.7	21.7	4.5	17.6	4.2	26.2	3.3	19.2	4.8	27.4	2	18.9	3.8	24.7	

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-005 Foothill-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 2

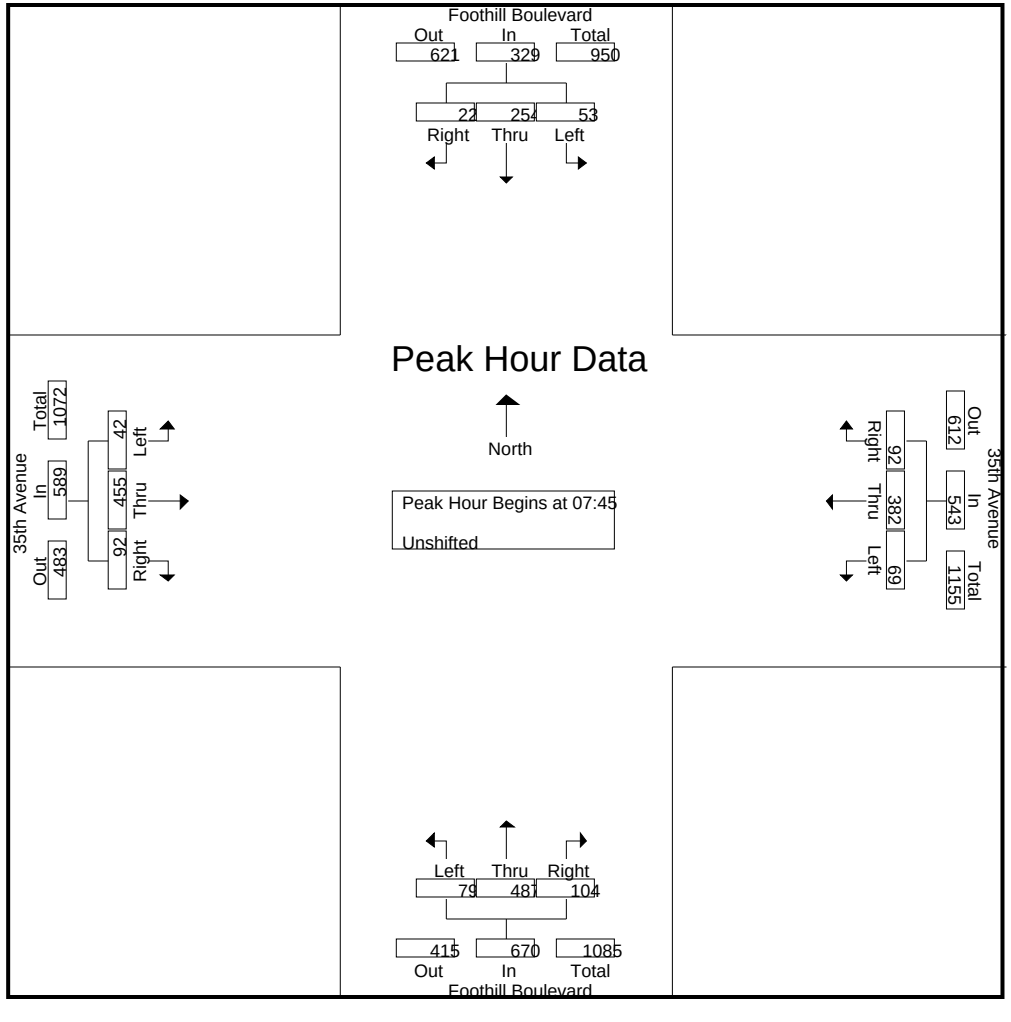
	Foothill Boulevard Southbound				35th Avenue Westbound				Foothill Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	7	49	5	61	13	100	22	135	20	**139**	23	**182**	**15**	**124**	**27**	**166**	**544**
08:00	9	59	**7**	75	17	**101**	25	**143**	**23**	115	**33**	171	11	115	23	149	538
08:15	**20**	**74**	3	**97**	18	88	**28**	134	16	128	19	163	8	119	18	145	539
08:30	17	72	7	96	**21**	93	17	131	20	105	29	154	8	97	24	129	510
Total Volume	53	254	22	329	69	382	92	543	79	487	104	670	42	455	92	589	2131
% App. Total	16.1	77.2	6.7		12.7	70.3	16.9		11.8	72.7	15.5		7.1	77.2	15.6		
PHF	.663	.858	.786	.848	.821	.946	.821	.949	.859	.876	.788	.920	.700	.917	.852	.887	.979

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-005 Foothill-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-005 Foothill-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 4

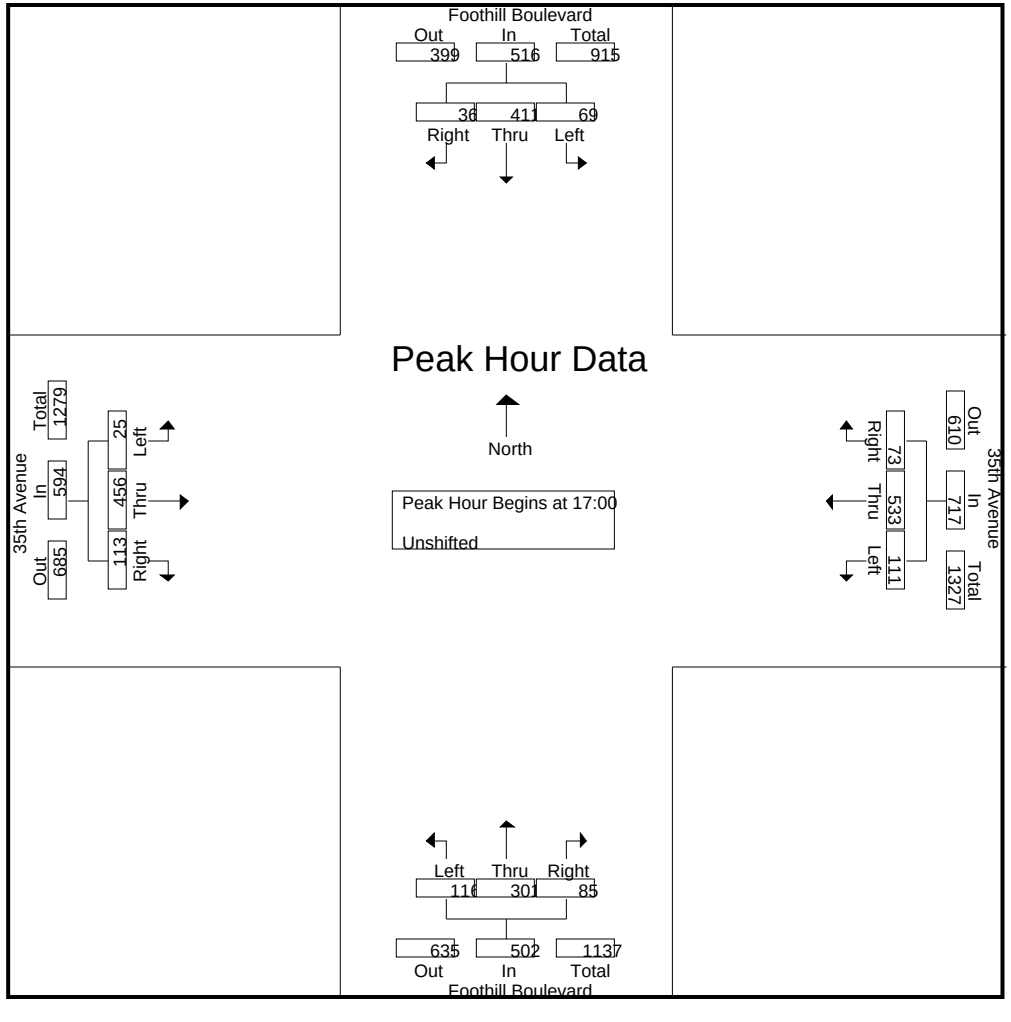
	Foothill Boulevard Southbound				35th Avenue Westbound				Foothill Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	**25**	84	**15**	124	25	126	22	173	31	**85**	17	133	4	115	21	140	570
17:15	17	**116**	4	**137**	**35**	133	10	178	**37**	75	22	**134**	3	113	29	145	**594**
17:30	10	108	9	127	28	**139**	18	**185**	29	71	**24**	124	6	104	**35**	145	581
17:45	17	103	8	128	23	135	**23**	181	19	70	22	111	**12**	**124**	28	**164**	584
Total Volume	69	411	36	516	111	533	73	717	116	301	85	502	25	456	113	594	2329
% App. Total	13.4	79.7	7		15.5	74.3	10.2		23.1	60	16.9		4.2	76.8	19		
PHF	.690	.886	.600	.942	.793	.959	.793	.969	.784	.885	.885	.937	.521	.919	.807	.905	.980

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-005 Foothill-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-006 International-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	International Boulevard Southbound				35th Avenue Westbound				International Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	4	64	3	71	17	54	17	88	15	101	17	133	0	21	8	29	321
07:15	7	72	7	86	20	62	23	105	12	118	22	152	5	31	7	43	386
07:30	4	101	5	110	20	95	27	142	10	175	29	214	4	50	8	62	528
07:45	8	106	8	122	29	109	30	168	10	255	26	291	8	46	5	59	640
Total	23	343	23	389	86	320	97	503	47	649	94	790	17	148	28	193	1875
08:00	10	116	12	138	13	94	45	152	14	252	11	277	5	50	5	60	627
08:15	7	145	12	164	20	114	43	177	9	236	22	267	7	53	2	62	670
08:30	7	122	13	142	11	73	35	119	10	204	19	233	9	73	13	95	589
08:45	9	142	13	164	14	89	51	154	4	213	14	231	12	47	5	64	613
Total	33	525	50	608	58	370	174	602	37	905	66	1008	33	223	25	281	2499
16:00	11	190	18	219	16	57	28	101	7	171	20	198	5	83	11	99	617
16:15	16	213	10	239	16	49	20	85	7	163	27	197	3	54	7	64	585
16:30	8	187	13	208	19	70	24	113	10	173	24	207	7	78	9	94	622
16:45	15	213	16	244	15	53	22	90	4	190	35	229	4	89	7	100	663
Total	50	803	57	910	66	229	94	389	28	697	106	831	19	304	34	357	2487
17:00	15	220	13	248	15	69	29	113	6	176	24	206	6	75	14	95	662
17:15	13	222	16	251	19	61	26	106	7	170	33	210	4	100	8	112	679
17:30	16	237	8	261	13	70	19	102	6	170	34	210	1	90	10	101	674
17:45	10	188	11	209	14	80	26	120	9	185	27	221	9	90	7	106	656
Total	54	867	48	969	61	280	100	441	28	701	118	847	20	355	39	414	2671
Grand Total	160	2538	178	2876	271	1199	465	1935	140	2952	384	3476	89	1030	126	1245	9532
Apprch %	5.6	88.2	6.2		14	62	24		4	84.9	11		7.1	82.7	10.1		
Total %	1.7	26.6	1.9	30.2	2.8	12.6	4.9	20.3	1.5	31	4	36.5	0.9	10.8	1.3	13.1	

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-006 International-35th
Site Code : 00000000
Start Date : 5/16/2012

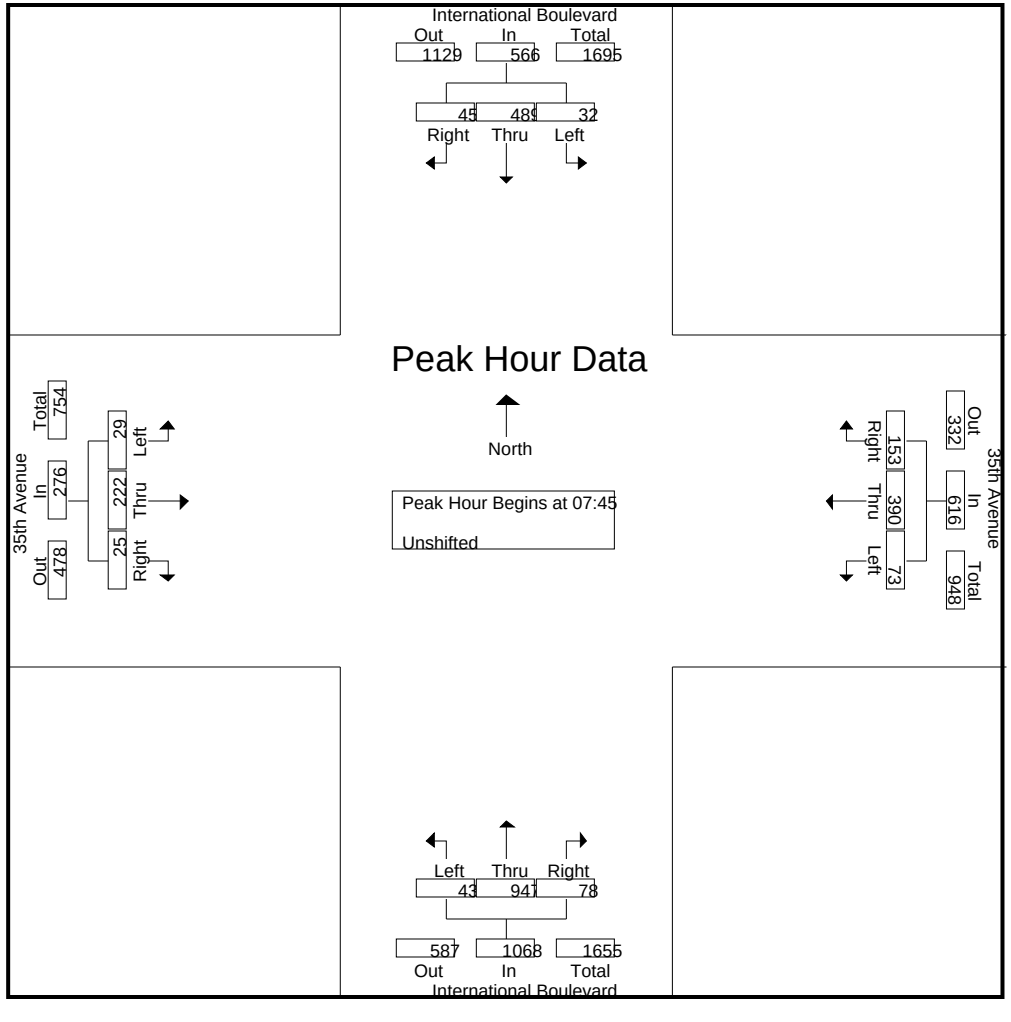
	International Boulevard Southbound				35th Avenue Westbound				International Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	8	106	8	122	**29**	109	30	168	10	**255**	**26**	**291**	8	46	5	59	640
08:00	**10**	116	12	138	13	94	**45**	152	**14**	252	11	277	5	50	5	60	627
08:15	7	**145**	12	**164**	20	**114**	43	**177**	9	236	22	267	7	53	2	62	**670**
08:30	7	122	**13**	142	11	73	35	119	10	204	19	233	**9**	**73**	**13**	**95**	589
Total Volume	32	489	45	566	73	390	153	616	43	947	78	1068	29	222	25	276	2526
% App. Total	5.7	86.4	8		11.9	63.3	24.8		4	88.7	7.3		10.5	80.4	9.1		
PHF	.800	.843	.865	.863	.629	.855	.850	.870	.768	.928	.750	.918	.806	.760	.481	.726	.943

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-006 International-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-006 International-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 4

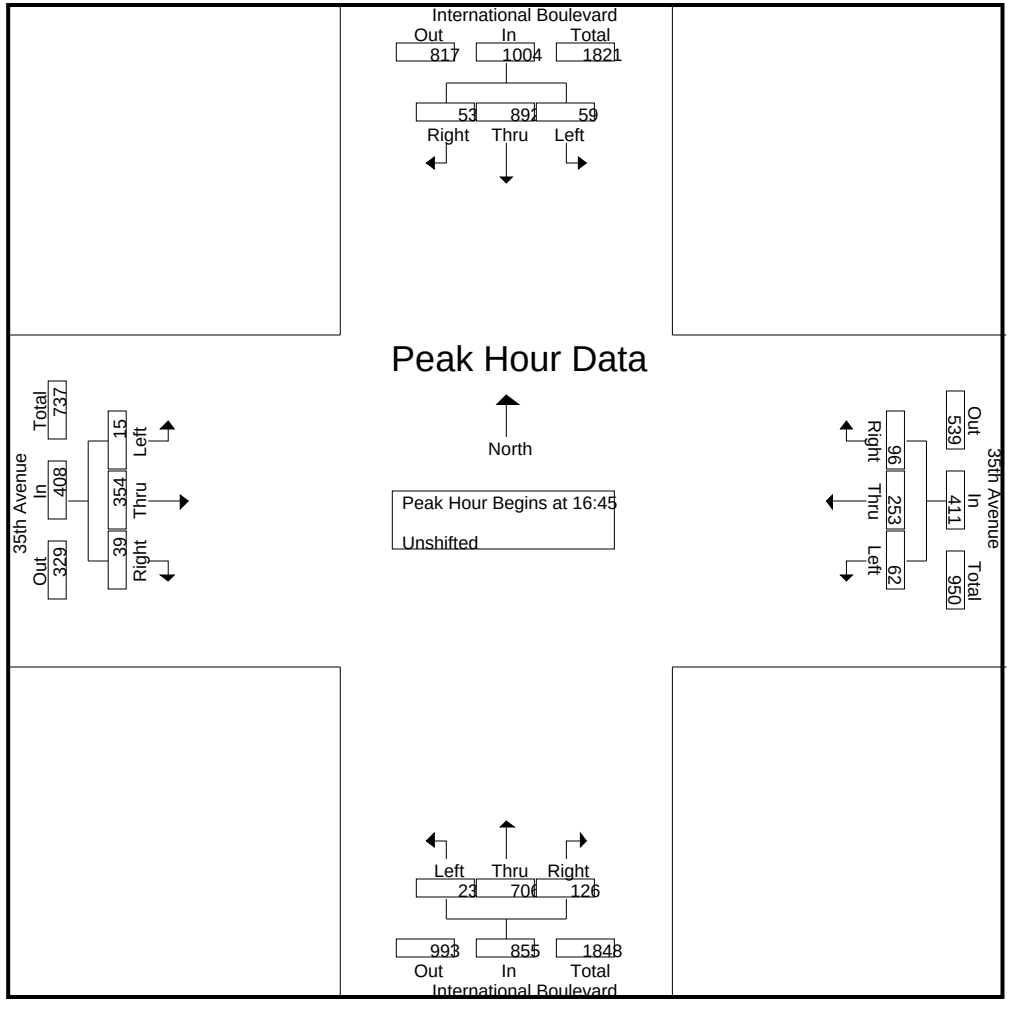
	International Boulevard Southbound				35th Avenue Westbound				International Boulevard Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:45																	
16:45	15	213	**16**	244	15	53	22	90	4	**190**	**35**	**229**	4	89	7	100	663
17:00	15	220	13	248	15	69	**29**	**113**	6	176	24	206	**6**	75	**14**	95	662
17:15	13	222	16	251	**19**	61	26	106	**7**	170	33	210	4	**100**	8	**112**	**679**
17:30	**16**	**237**	8	**261**	13	**70**	19	102	6	170	34	210	1	90	10	101	674
Total Volume	59	892	53	1004	62	253	96	411	23	706	126	855	15	354	39	408	2678
% App. Total	5.9	88.8	5.3		15.1	61.6	23.4		2.7	82.6	14.7		3.7	86.8	9.6		
PHF	.922	.941	.828	.962	.816	.904	.828	.909	.821	.929	.900	.933	.625	.885	.696	.911	.986

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-006 International-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-007 San Leandro-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 1

Groups Printed- Unshifted

	San Leandro Street Southbound				35th Avenue Westbound				San Leandro Street Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	33	46	0	79	18	0	13	31	0	45	27	72	0	0	0	0	182
07:15	33	48	0	81	18	0	6	24	0	59	34	93	1	0	0	1	199
07:30	47	53	0	100	20	0	10	30	1	85	29	115	0	0	0	0	245
07:45	22	73	0	95	37	0	22	59	1	129	33	163	0	0	0	0	317
Total	135	220	0	355	93	0	51	144	2	318	123	443	1	0	0	1	943
08:00	36	67	2	105	35	0	20	55	0	179	42	221	0	0	0	0	381
08:15	39	81	0	120	32	1	24	57	0	165	46	211	1	0	1	2	390
08:30	40	74	1	115	28	0	23	51	1	166	45	212	0	0	2	2	380
08:45	31	61	2	94	32	0	32	64	0	145	37	182	0	1	1	2	342
Total	146	283	5	434	127	1	99	227	1	655	170	826	1	1	4	6	1493
16:00	41	120	0	161	25	1	27	53	1	91	38	130	1	0	0	1	345
16:15	39	100	0	139	17	0	18	35	1	62	25	88	2	0	1	3	265
16:30	38	136	1	175	38	1	22	61	0	85	31	116	0	0	1	1	353
16:45	50	120	2	172	23	0	22	45	1	99	37	137	1	1	1	3	357
Total	168	476	3	647	103	2	89	194	3	337	131	471	4	1	3	8	1320
17:00	38	140	0	178	34	0	28	62	0	88	41	129	0	1	0	1	370
17:15	60	156	3	219	29	3	29	61	1	100	43	144	2	3	0	5	429
17:30	56	128	1	185	30	0	27	57	0	75	27	102	1	0	2	3	347
17:45	58	126	1	185	40	0	31	71	1	92	41	134	1	0	0	1	391
Total	212	550	5	767	133	3	115	251	2	355	152	509	4	4	2	10	1537
Grand Total	661	1529	13	2203	456	6	354	816	8	1665	576	2249	10	6	9	25	5293
Apprch %	30	69.4	0.6		55.9	0.7	43.4		0.4	74	25.6		40	24	36		
Total %	12.5	28.9	0.2	41.6	8.6	0.1	6.7	15.4	0.2	31.5	10.9	42.5	0.2	0.1	0.2	0.5	

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-007 San Leandro-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 2

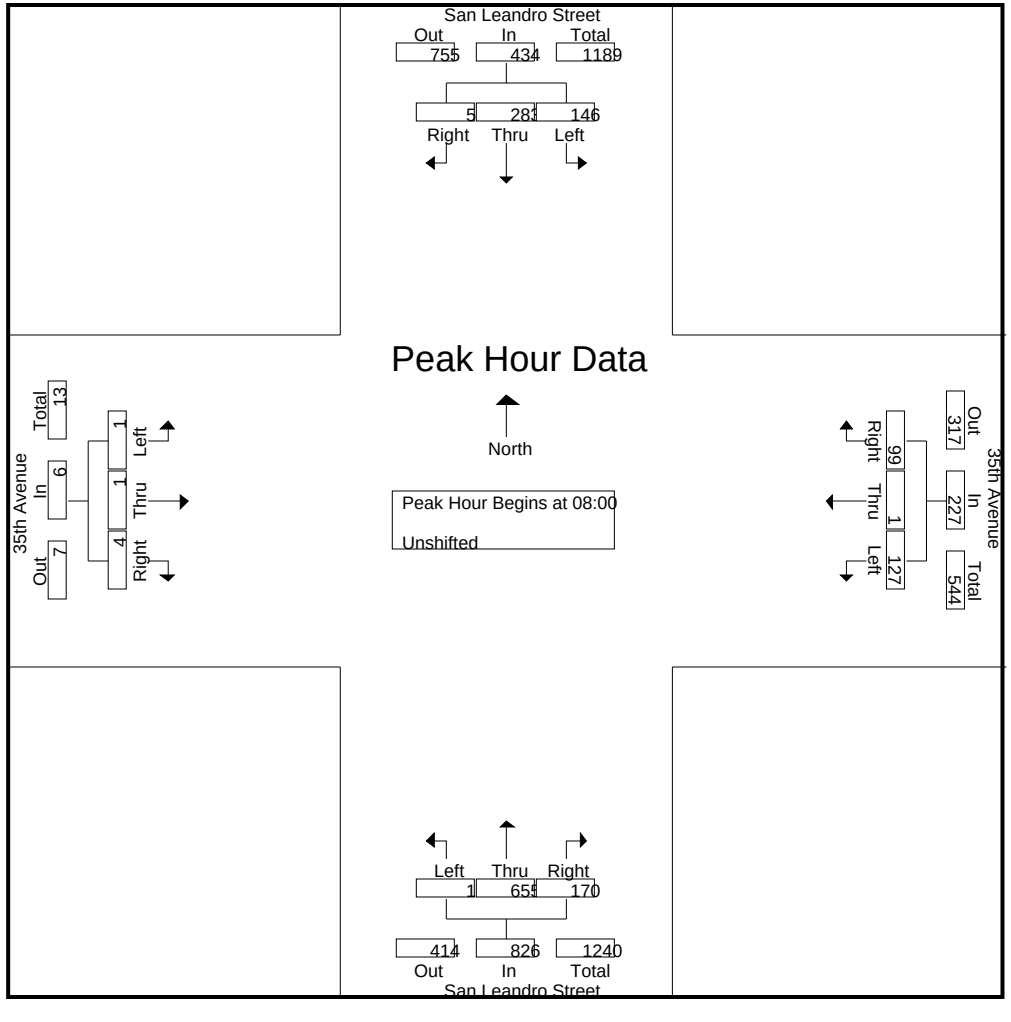
	San Leandro Street Southbound				35th Avenue Westbound				San Leandro Street Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	36	67	**2**	105	**35**	0	20	55	0	**179**	42	**221**	0	0	0	0	381
08:15	39	**81**	0	**120**	32	**1**	24	57	0	165	**46**	211	**1**	0	1	**2**	**390**
08:30	**40**	74	1	115	28	0	23	51	**1**	166	45	212	0	0	**2**	2	380
08:45	31	61	2	94	32	0	**32**	**64**	0	145	37	182	0	**1**	1	2	342
Total Volume	146	283	5	434	127	1	99	227	1	655	170	826	1	1	4	6	1493
% App. Total	33.6	65.2	1.2		55.9	0.4	43.6		0.1	79.3	20.6		16.7	16.7	66.7		
PHF	.913	.873	.625	.904	.907	.250	.773	.887	.250	.915	.924	.934	.250	.250	.500	.750	.957

All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-007 San Leandro-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 3



All Traffic Data

(916) 771-8700

City of Oakland

File Name : 12-7209-007 San Leandro-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 4

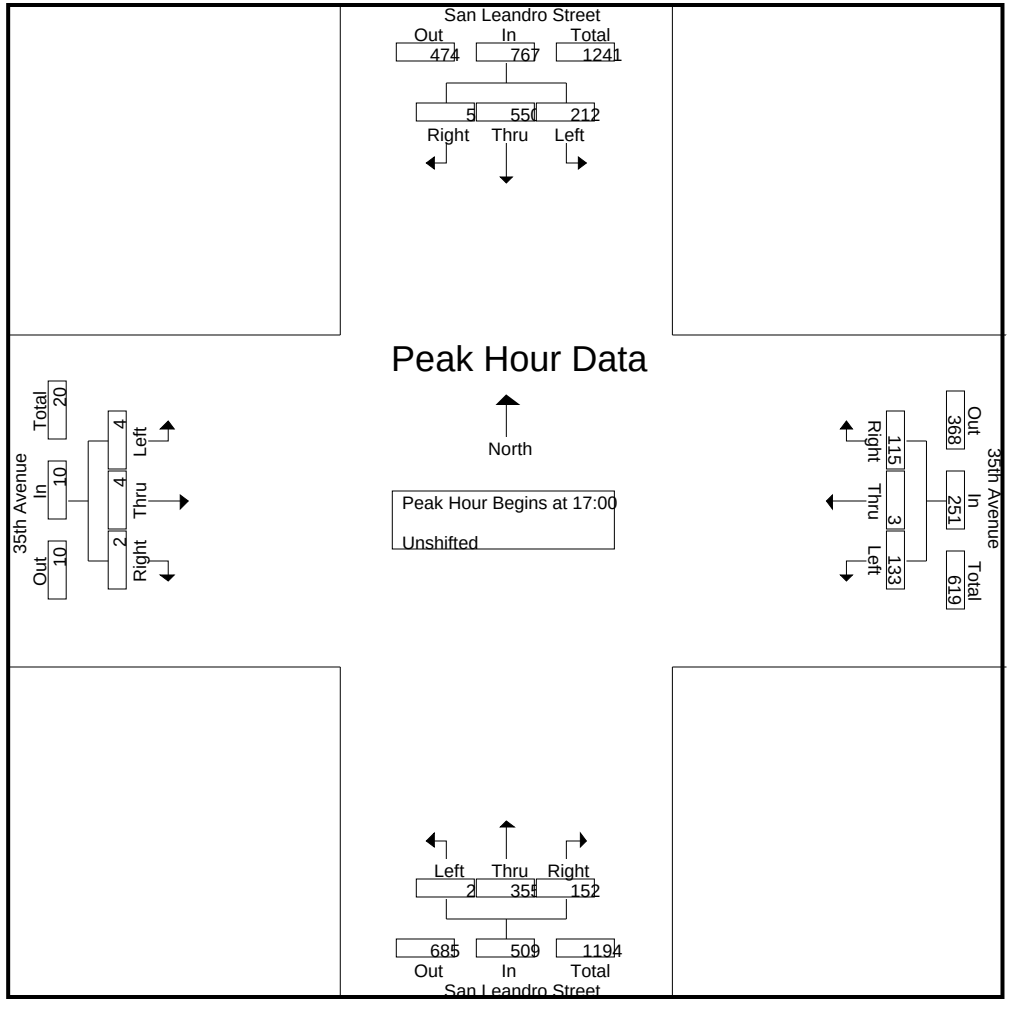
	San Leandro Street Southbound				35th Avenue Westbound				San Leandro Street Northbound				35th Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	38	140	0	178	34	0	28	62	0	88	41	129	0	1	0	1	370
17:15	**60**	**156**	**3**	**219**	29	**3**	29	61	**1**	**100**	**43**	**144**	**2**	**3**	0	**5**	**429**
17:30	56	128	1	185	30	0	27	57	0	75	27	102	1	0	**2**	3	347
17:45	58	126	1	185	**40**	0	**31**	**71**	1	92	41	134	1	0	0	1	391
Total Volume	212	550	5	767	133	3	115	251	2	355	152	509	4	4	2	10	1537
% App. Total	27.6	71.7	0.7		53	1.2	45.8		0.4	69.7	29.9		40	40	20		
PHF	.883	.881	.417	.876	.831	.250	.927	.884	.500	.888	.884	.884	.500	.333	.250	.500	.896

All Traffic Data

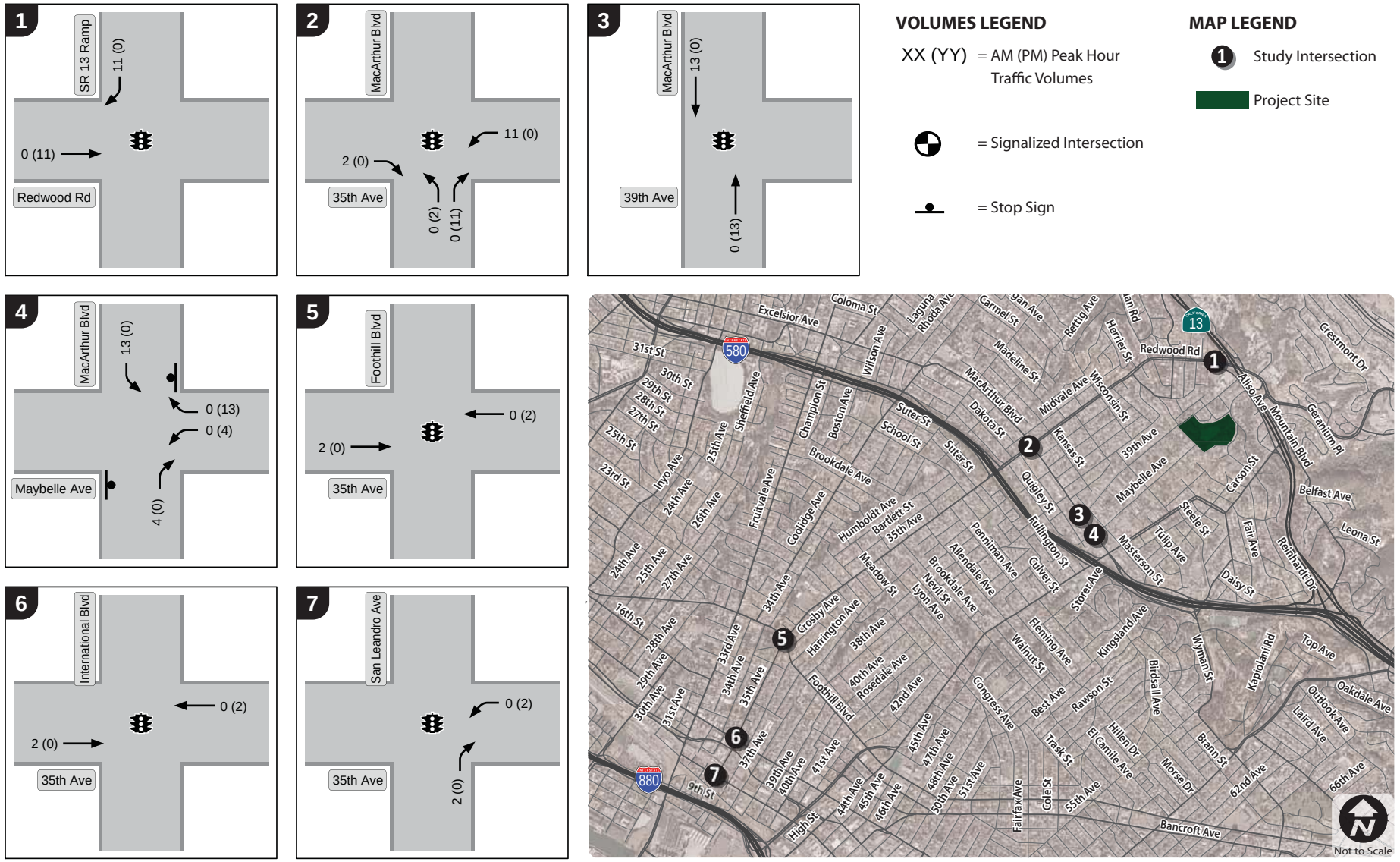
(916) 771-8700

City of Oakland

File Name : 12-7209-007 San Leandro-35th
Site Code : 00000000
Start Date : 5/16/2012
Page No : 5



APPENDIX C: VOLUME FIGURES

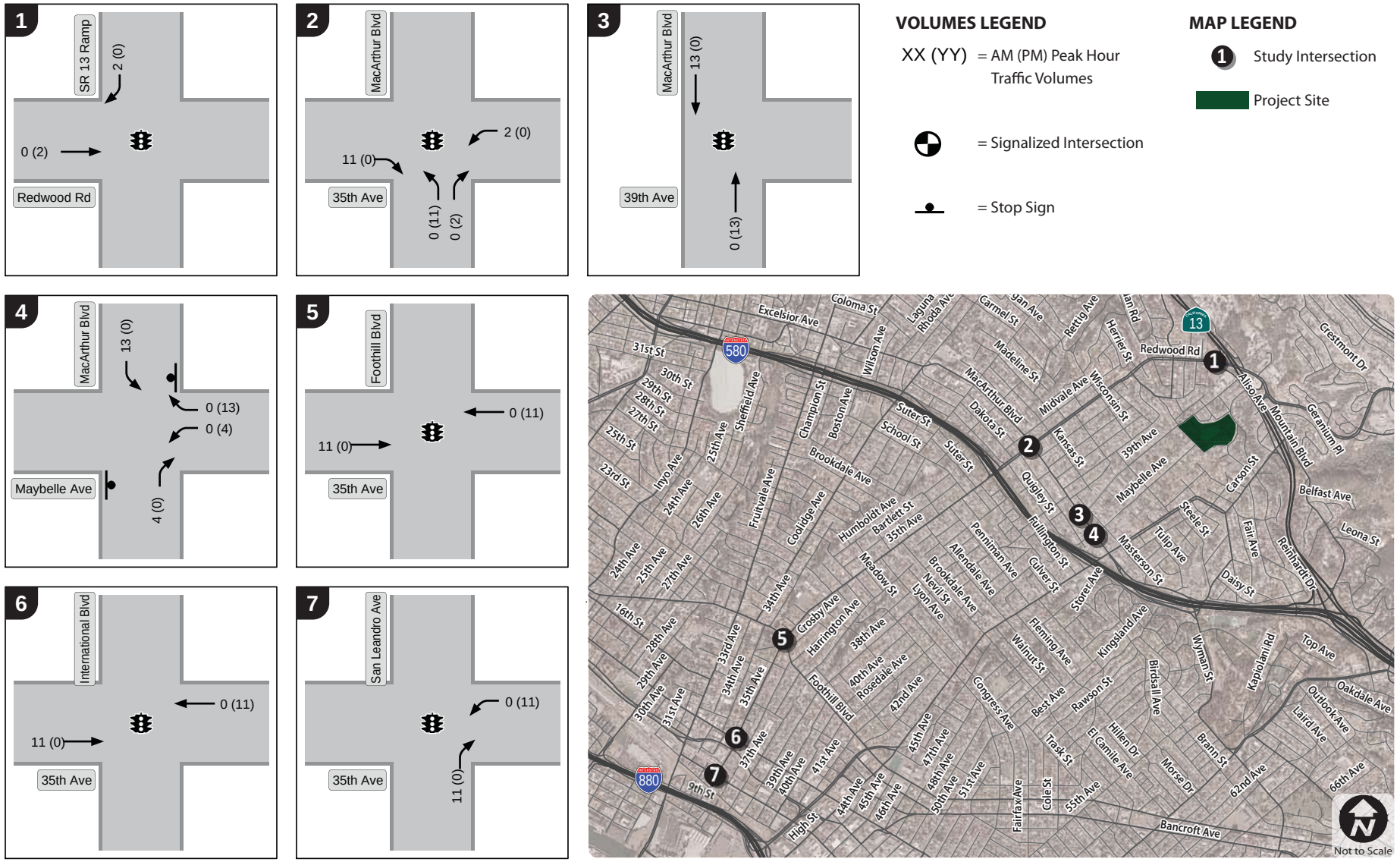


FEHR PEERS

WC12-2915

PROJECT TRIP ASSIGNMENT AVERAGE
SR 13 ALTERNATIVE

FIGURE B-1

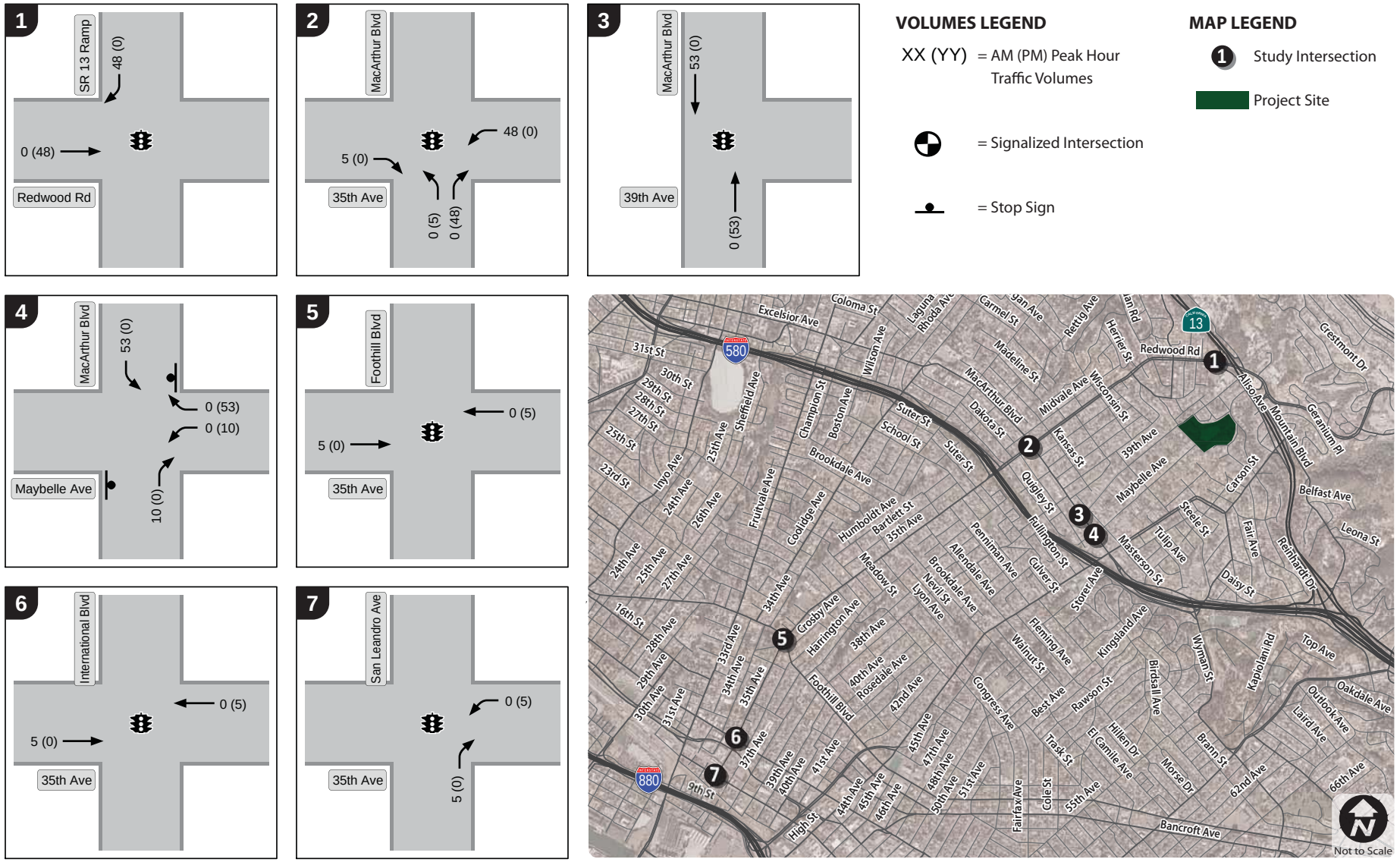


FEHR PEERS

WC12-2915

PROJECT TRIP ASSIGNMENT AVERAGE
I-880 ALTERNATIVE

FIGURE B-2

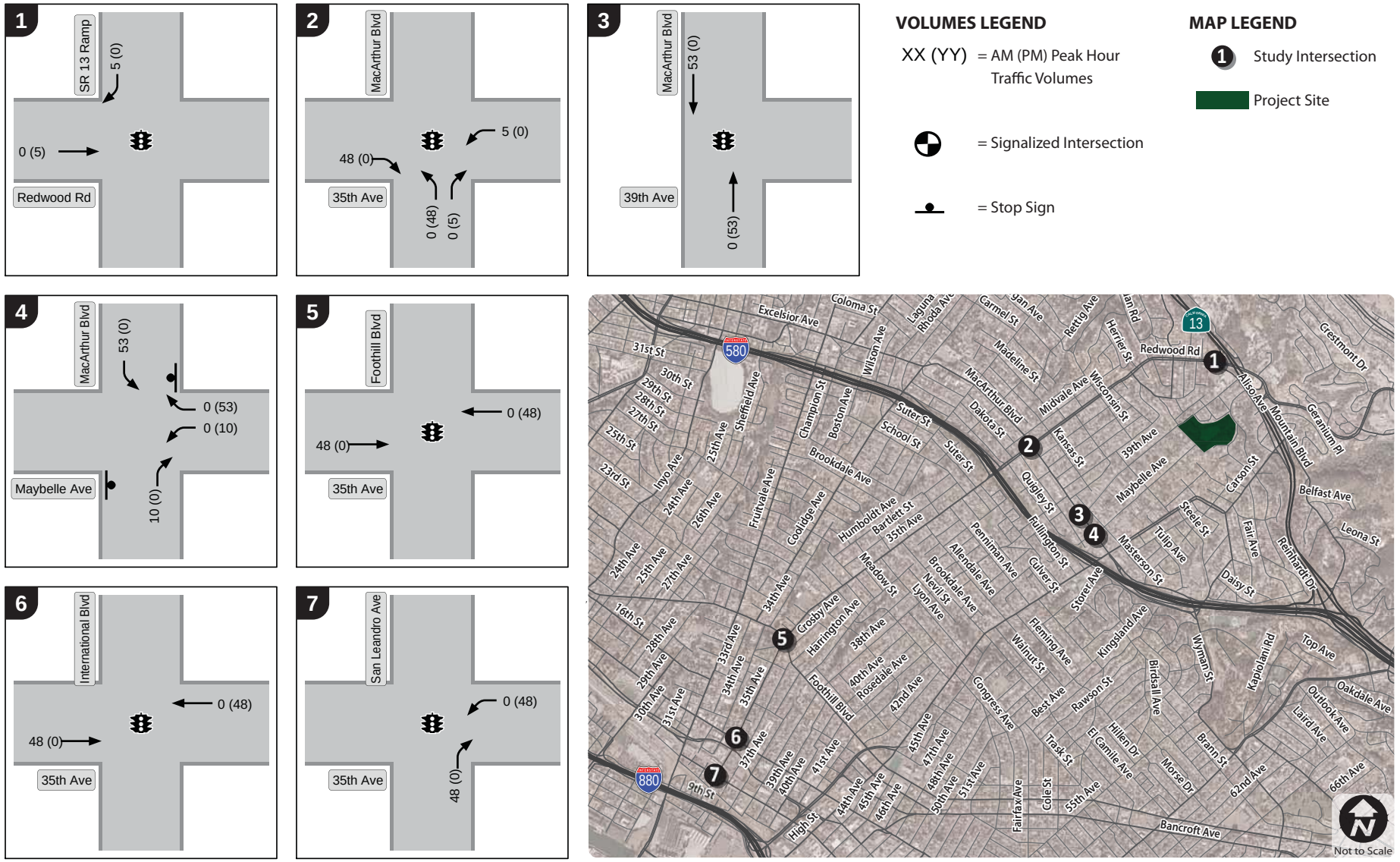


FEHR PEERS

WC12-2915

PROJECT TRIP ASSIGNMENT MAXIMUM
SR 13 ALTERNATIVE

FIGURE B-3

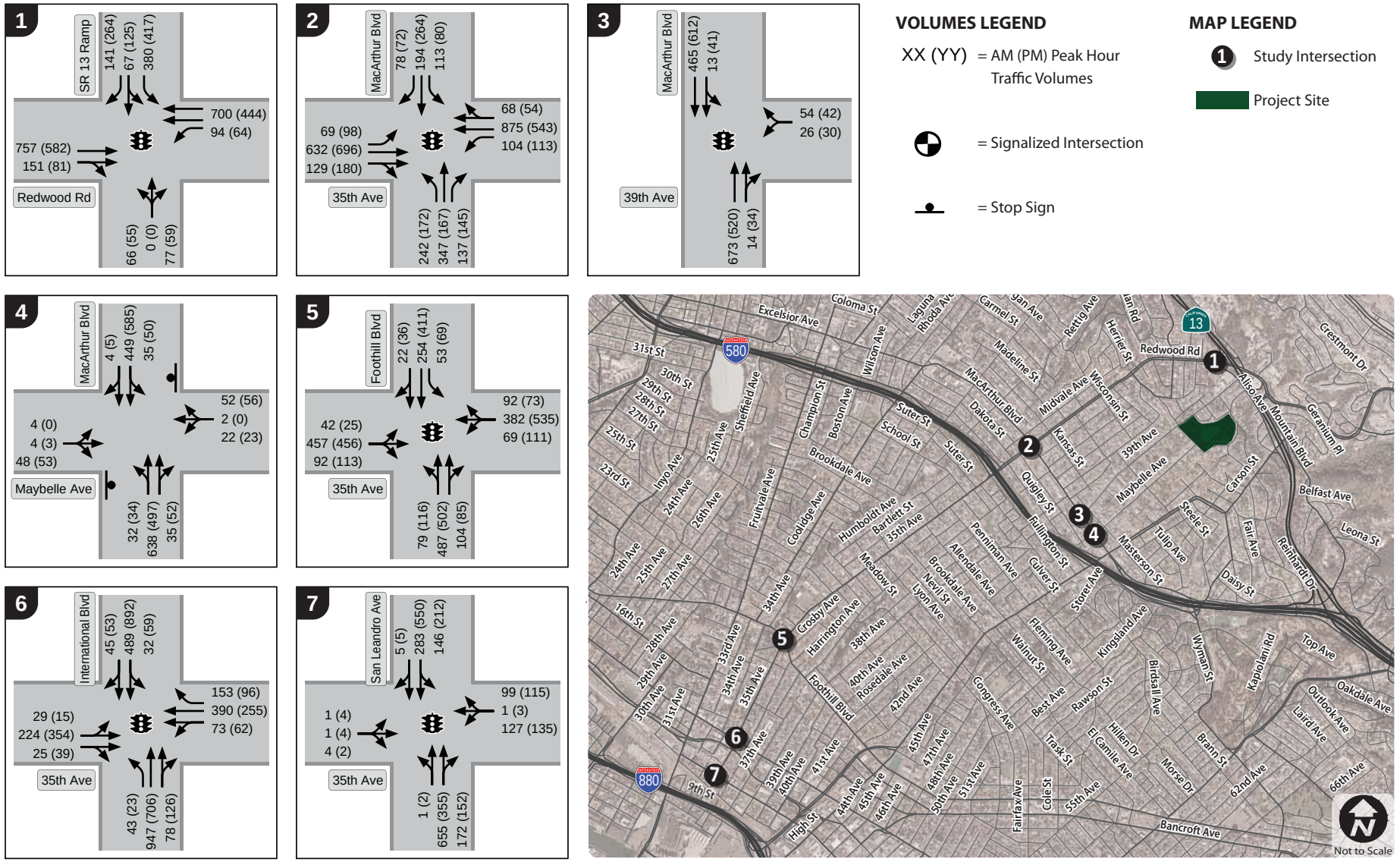


FEHR PEERS

WC12-2915

PROJECT TRIP ASSIGNMENT MAXIMUM
I-880 ALTERNATIVE

FIGURE B-4

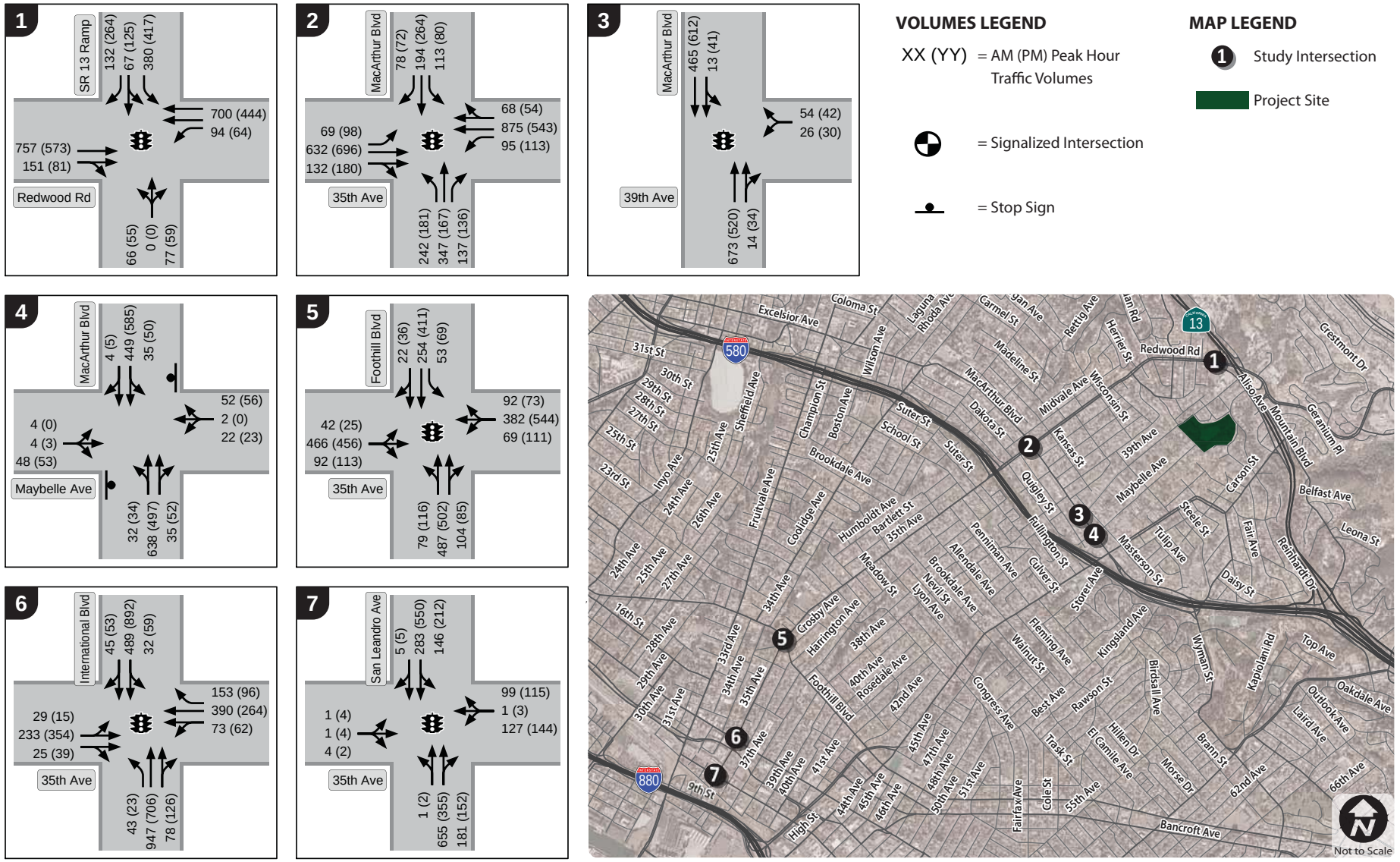


FEHR PEERS

WC12-2915

EXISTING PLUS PROJECT AVERAGE VOLUMES
SR 13 ALTERNATIVE

FIGURE B-5

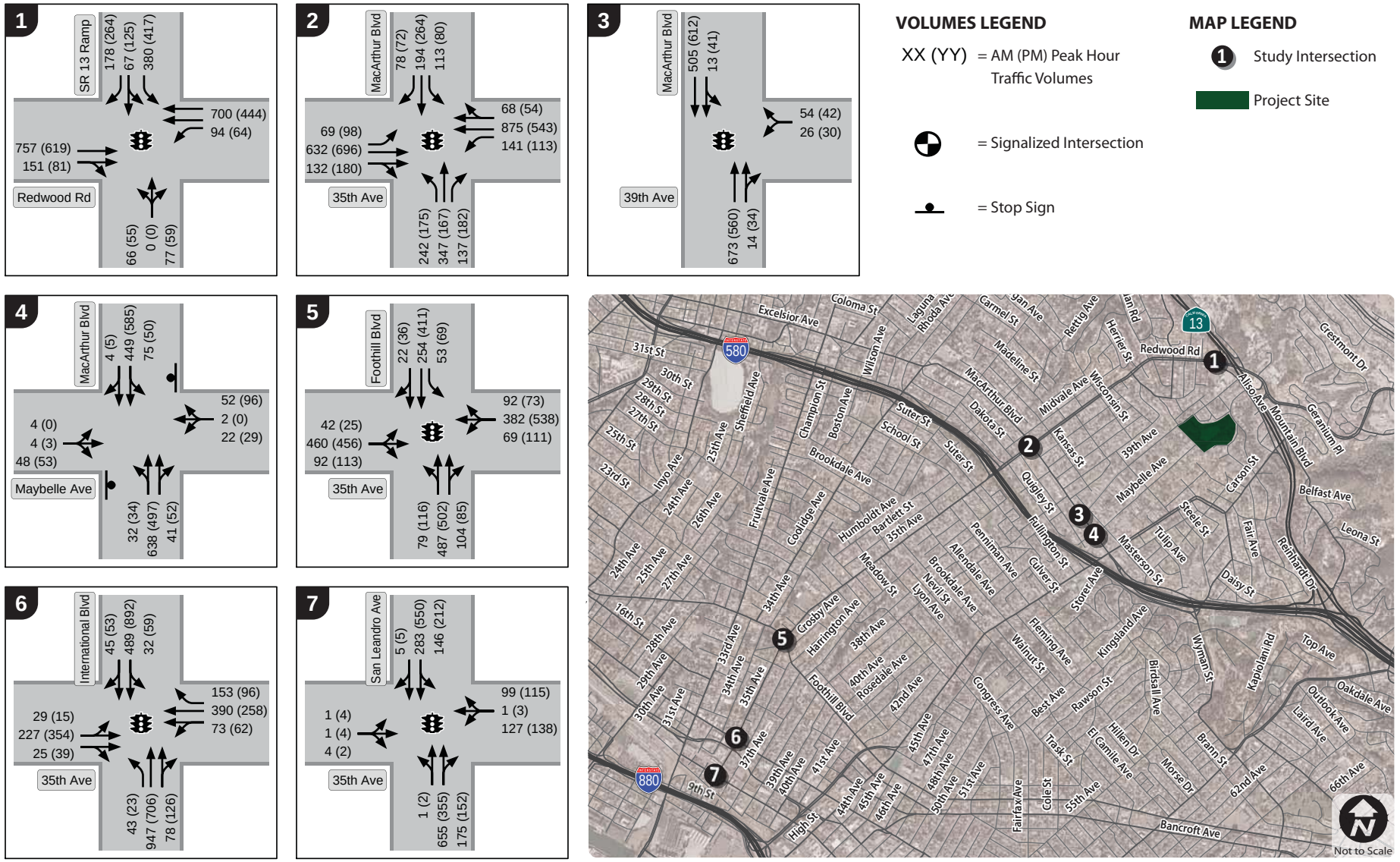


FEHR PEERS

WC12-2915

EXISTING PLUS PROJECT AVERAGE VOLUMES
I-880 ALTERNATIVE

FIGURE B-6

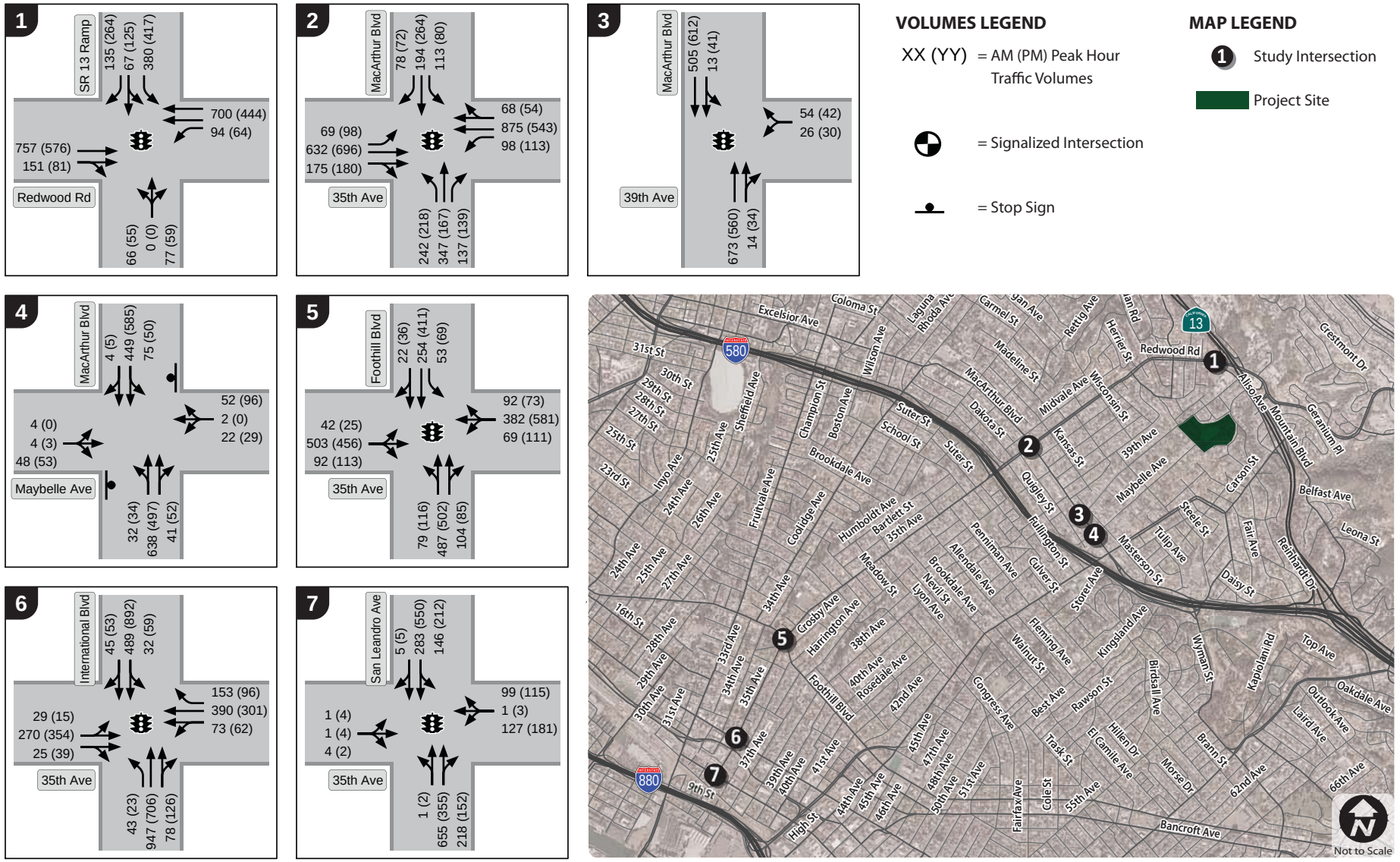


FEHR PEERS

WC12-2915

EXISTING PLUS PROJECT MAXIMUM VOLUMES
SR 13 ALTERNATIVE

FIGURE B-7

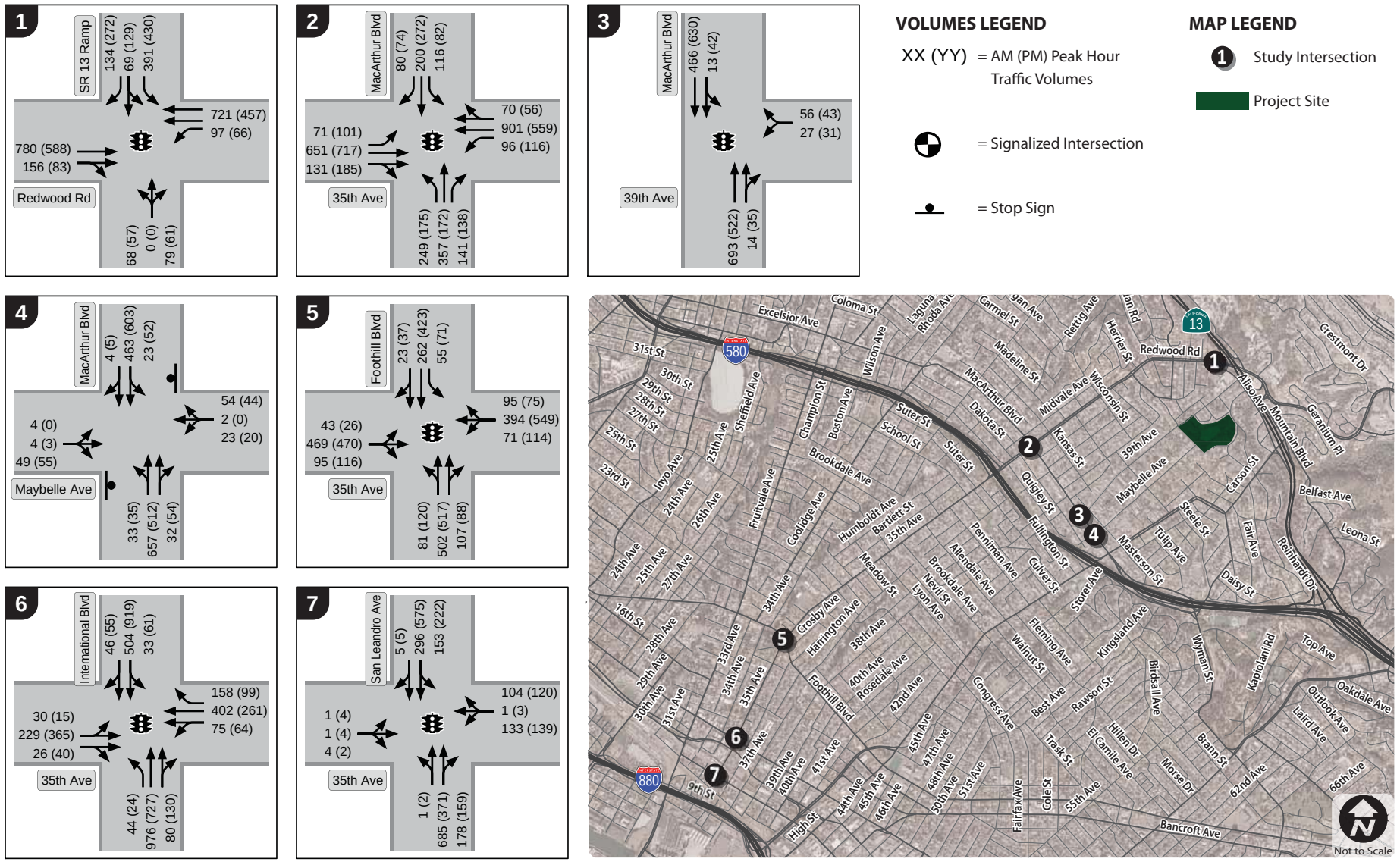


FEHR PEERS

WC12-2915

EXISTING PLUS PROJECT MAXIMUM VOLUMES
I-880 ALTERNATIVE

FIGURE B-8

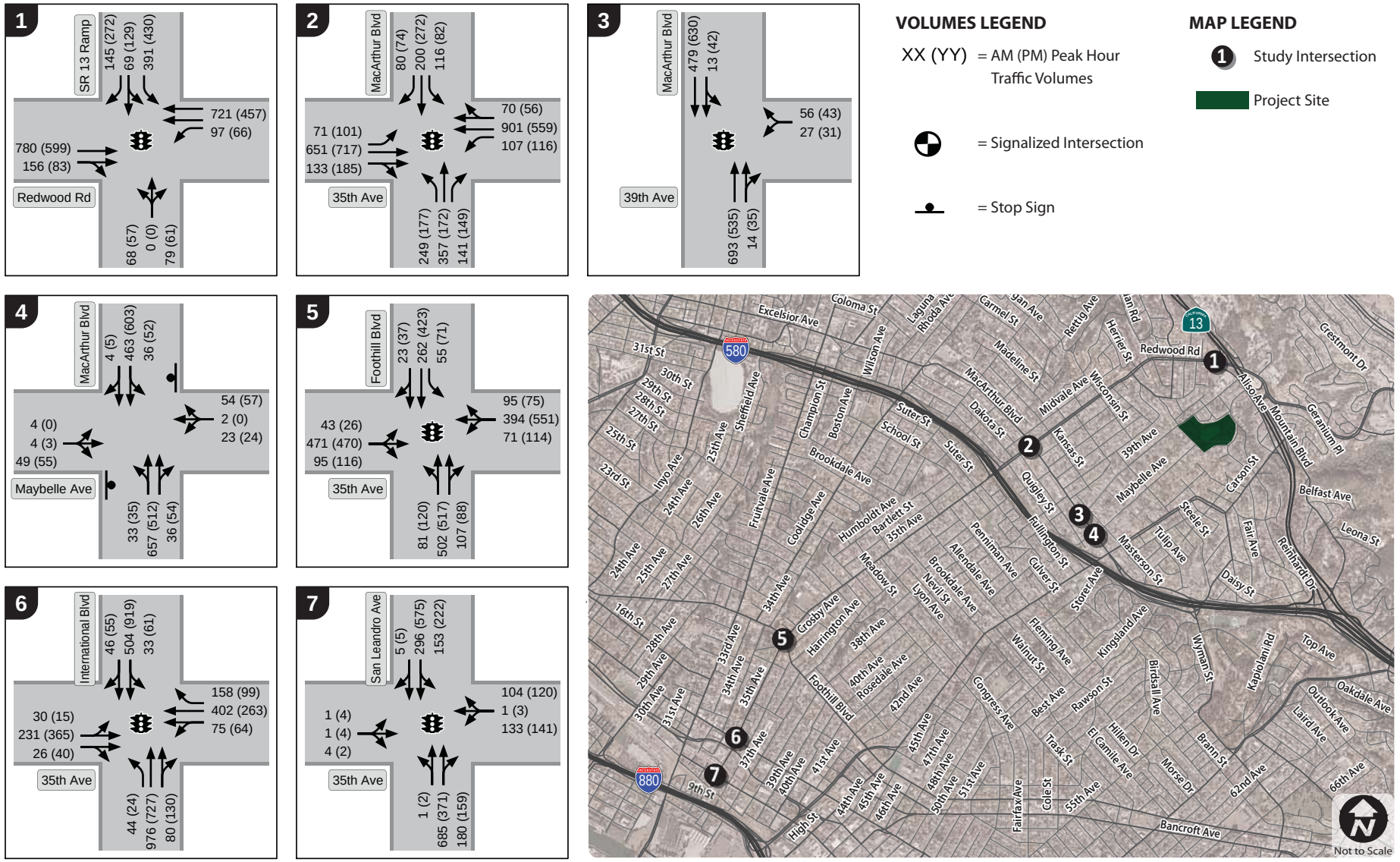


FEHR PEERS

WC12-2915

CUMULATIVE (2015) PEAK HOUR TRAFFIC VOLUMES

FIGURE B-9

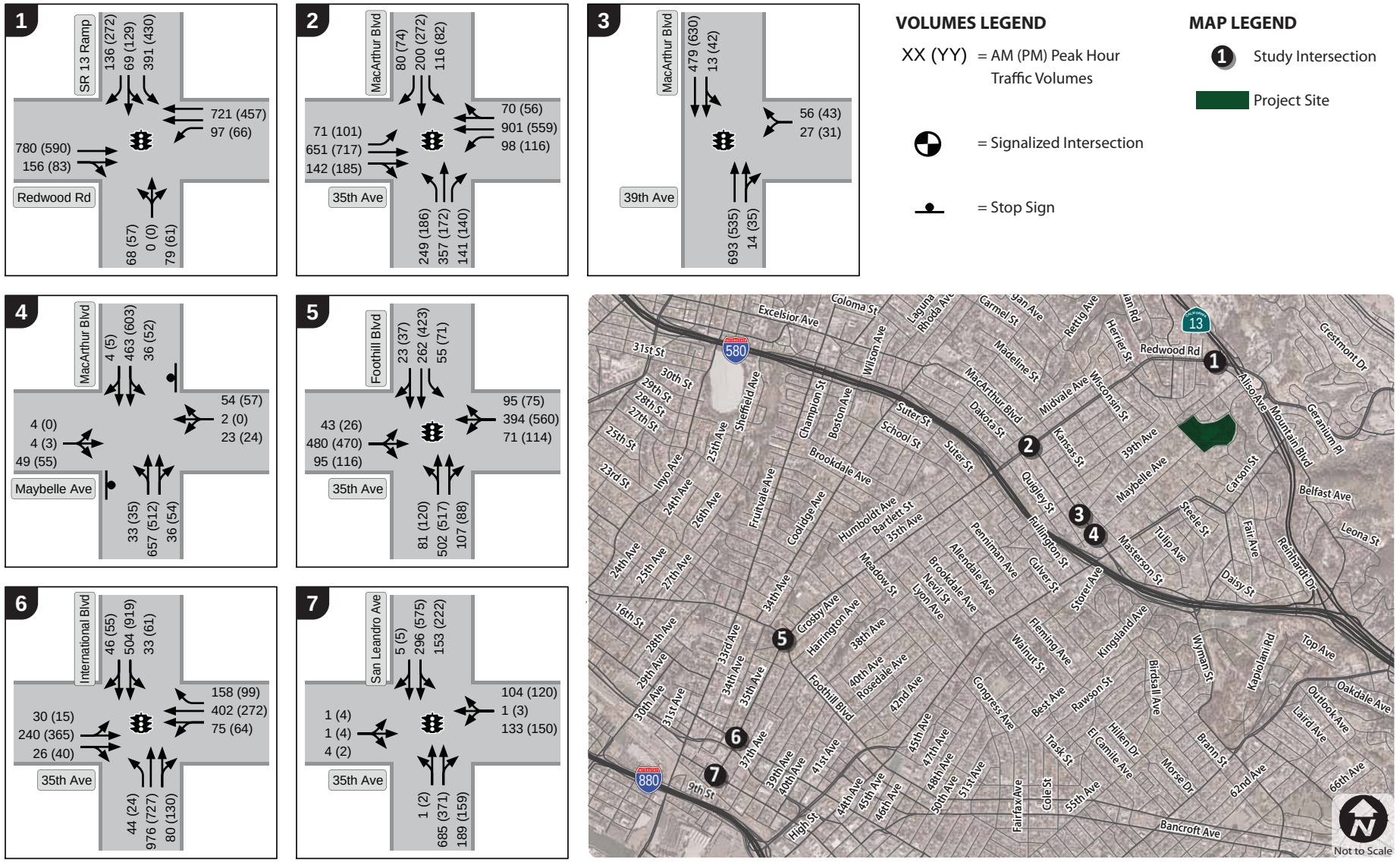


CUMULATIVE PLUS PROJECT AVERAGE VOLUMES
SR 13 ALTERNATIVE

FIGURE B-10

FEHR PEERS

WC12-2915

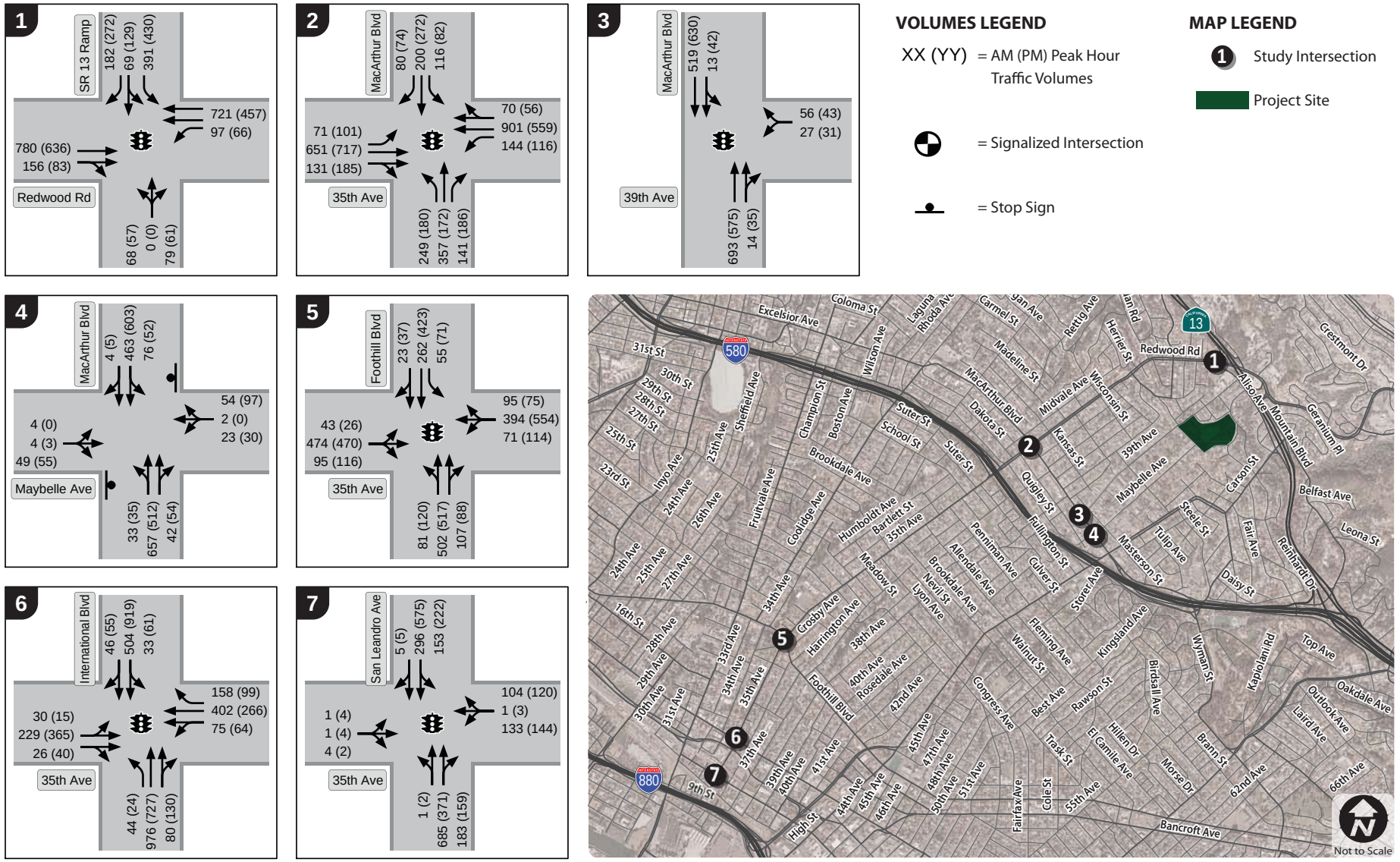


FEHR PEERS

WC12-2915

CUMULATIVE PLUS PROJECT AVERAGE VOLUMES
I-880 ALTERNATIVE

FIGURE B-11

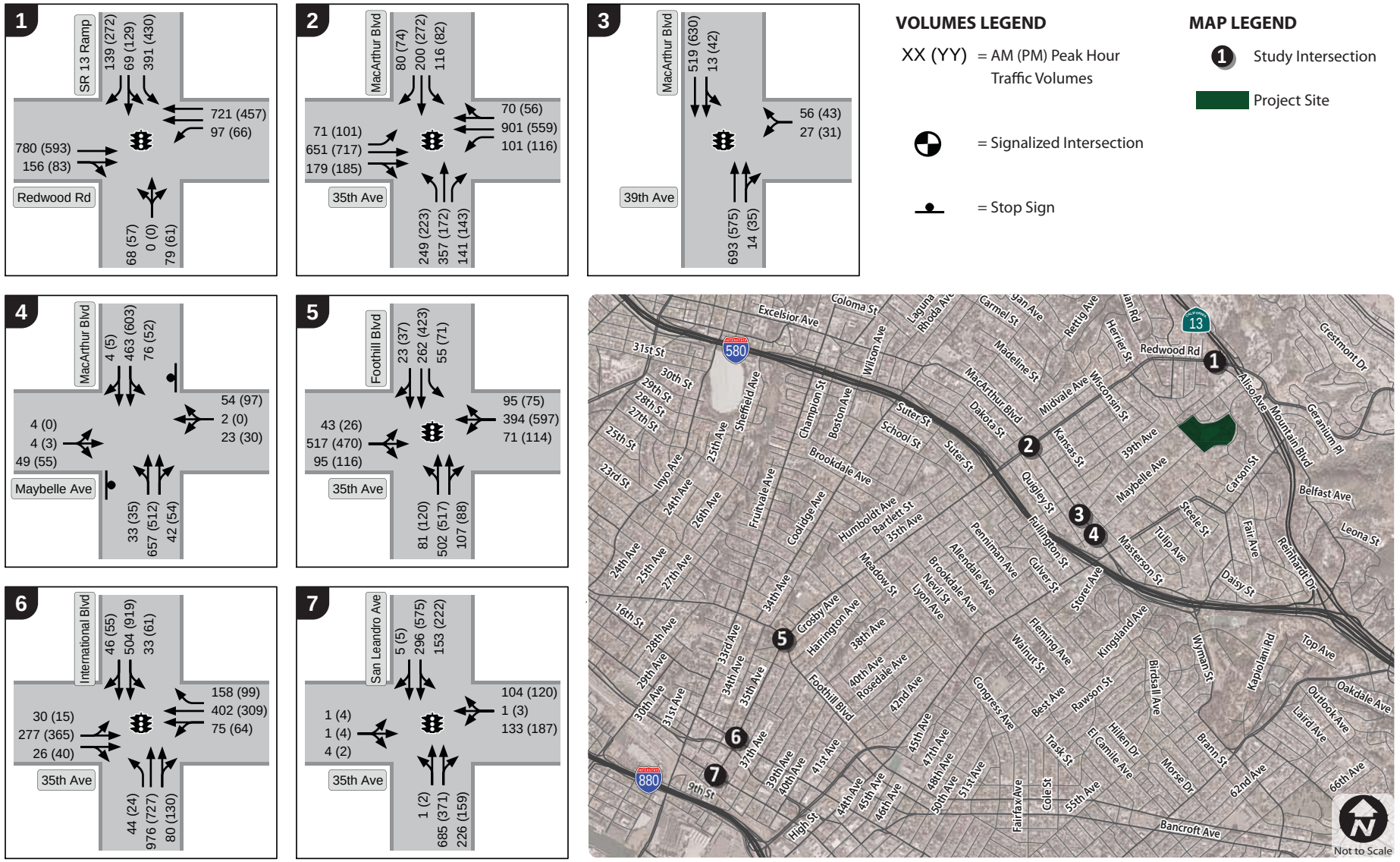


FEHR PEERS

WC12-2915

CUMULATIVE PLUS PROJECT MAXIMUM VOLUMES
SR 13 ALTERNATIVE

FIGURE B-12



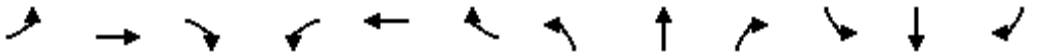
FEHR PEERS

WC12-2915

CUMULATIVE PLUS PROJECT MAXIMUM VOLUMES
I-880 ALTERNATIVE

FIGURE B-13

APPENDIX D: LEVEL OF SERVICE WORKSHEETS



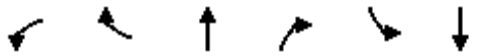
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	757	151	94	700	0	66	0	77	380	67	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1709	1559
Flt Permitted		1.00		0.22	1.00			0.75		0.71	0.73	1.00
Satd. Flow (perm)		3436		401	3539			1291		1251	1299	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	851	170	106	787	0	74	0	87	427	75	146
RTOR Reduction (vph)	0	0	0	0	0	0	0	37	0	0	0	44
Lane Group Flow (vph)	0	1021	0	106	787	0	0	124	0	248	254	102
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Effective Green, g (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Actuated g/C Ratio		0.51		0.51	0.51			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1740		203	1792			399		386	401	481
v/s Ratio Prot		c0.30			0.22							
v/s Ratio Perm				0.26				0.10		c0.20	0.20	0.07
v/c Ratio		0.59		0.52	0.44			0.31		0.64	0.63	0.21
Uniform Delay, d1		9.4		9.0	8.5			14.3		16.1	16.1	13.8
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3		1.1	0.1			0.2		2.7	2.4	0.1
Delay (s)		9.7		10.1	8.5			14.5		18.9	18.5	13.9
Level of Service		A		B	A			B		B	B	B
Approach Delay (s)		9.7			8.7			14.5			17.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	10.0
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)	69	632	127	93	875	68	242	347	137	113	194	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1770	3428		1770	3470		1770	1863	1525	1770	1863	1546
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)	1770	3428		1770	3470		1770	1863	1525	1770	1863	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	695	140	102	962	75	266	381	151	124	213	86
RTOR Reduction (vph)	0	16	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	76	819	0	102	1032	0	266	381	107	124	213	41
Confl. Peds. (#/hr)			7			40			24			11
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.7	29.4		7.6	30.3		16.0	25.9	25.9	8.8	18.7	18.7
Effective Green, g (s)	6.7	29.4		7.6	30.3		16.0	25.9	25.9	8.8	18.7	18.7
Actuated g/C Ratio	0.08	0.33		0.09	0.34		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	134	1136		152	1185		319	544	445	176	393	326
v/s Ratio Prot	0.04	0.24		c0.06	c0.30		c0.15	c0.20		0.07	0.11	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.57	0.72		0.67	0.87		0.83	0.70	0.24	0.70	0.54	0.13
Uniform Delay, d1	39.6	26.0		39.3	27.4		35.1	27.9	23.9	38.7	31.2	28.4
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	3.3	2.3		8.8	7.2		16.2	4.1	0.3	10.0	1.5	0.2
Delay (s)	42.9	28.3		48.1	34.6		51.2	32.0	24.2	48.7	32.7	28.5
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		29.5			35.8			36.9			36.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

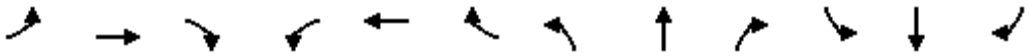
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	54	673	14	13	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1642		3527			3534
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1642		3527			3301
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	59	740	15	14	497
RTOR Reduction (vph)	42	0	2	0	0	0
Lane Group Flow (vph)	46	0	753	0	0	511
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2022
v/s Ratio Prot	c0.03		c0.21			
v/s Ratio Perm						0.15
v/c Ratio	0.10		0.35			0.25
Uniform Delay, d1	20.9		7.6			7.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.3
Delay (s)	21.3		8.1			7.4
Level of Service	C		A			A
Approach Delay (s)	21.3		8.1			7.4
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

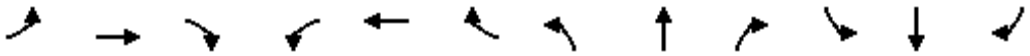
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	48	22	2	52	32	638	31	22	449	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	54	25	2	58	36	717	35	25	504	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1056	1390	264	1174	1375	386	514			757		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1056	1390	264	1174	1375	386	514			757		
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 %	97	97	93	80	98	90	97			97		
cM capacity (veh/h)	150	131	728	124	134	607	1043			846		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	63	85	394	393	277	257
Volume Left	4	25	36	0	25	0
Volume Right	54	58	0	35	0	4
cSH	455	274	1043	1700	846	1700
Volume to Capacity	0.14	0.31	0.03	0.23	0.03	0.15
Queue Length 95th (ft)	12	32	3	0	2	0
Control Delay (s)	14.2	24.0	1.1	0.0	1.1	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	14.2	24.0	0.6		0.6	
Approach LOS	B	C				

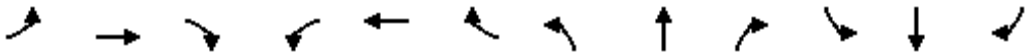
Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	54.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	455	92	69	382	92	79	487	104	53	254	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1810			1801			3411		1770	3484	
Flt Permitted		0.94			0.87			0.86		0.28	1.00	
Satd. Flow (perm)		1700			1575			2967		529	3484	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	43	464	94	70	390	94	81	497	106	54	259	22
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	6	0
Lane Group Flow (vph)	0	594	0	0	547	0	0	669	0	54	275	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		884			819			1187		212	1394	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.35			0.35			c0.23		0.10		
v/c Ratio		0.67			0.67			0.56		0.25	0.20	
Uniform Delay, d1		17.7			17.6			23.2		20.0	19.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.1			4.3			1.9		2.9	0.3	
Delay (s)		21.8			21.9			25.2		22.9	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		21.8			21.9			25.2			20.4	
Approach LOS		C			C			C			C	

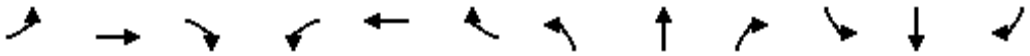
Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	222	25	73	390	153	43	947	78	32	489	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3458			3511	1515	1770	3492			3480	
Flt Permitted		0.88			0.85	1.00	0.40	1.00			0.86	
Satd. Flow (perm)		3054			2999	1515	747	3492			3014	
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)	31	236	27	78	415	163	46	1007	83	34	520	48
RTOR Reduction (vph)	0	8	0	0	0	69	0	6	0	0	7	0
Lane Group Flow (vph)	0	286	0	0	493	94	46	1084	0	0	595	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Effective Green, g (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		935			918	464	431	2014			1739	
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.09			c0.16	0.06	0.06				0.20	
v/c Ratio		0.31			0.54	0.20	0.11	0.54			0.34	
Uniform Delay, d1		18.1			19.7	17.5	6.5	8.9			7.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.6	0.2	0.1	0.3			0.1	
Delay (s)		18.3			20.3	17.8	6.6	9.1			7.7	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		18.3			19.7			9.0			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

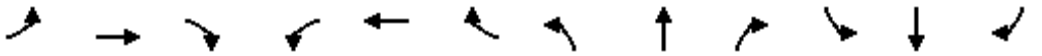


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	127	1	99	1	655	170	146	283	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1661			1692			3407			3474	
Flt Permitted		0.96			0.82			0.95			0.58	
Satd. Flow (perm)		1611			1434			3253			2056	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	132	1	103	1	682	177	152	295	5
RTOR Reduction (vph)	0	3	0	0	21	0	0	25	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	215	0	0	835	0	0	451	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		14.3			14.3			21.7			27.0	
Effective Green, g (s)		14.3			14.3			21.7			27.0	
Actuated g/C Ratio		0.29			0.29			0.44			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		467			416			1432			1163	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.15			c0.26			0.20	
v/c Ratio		0.01			0.52			0.58			2.98dl	
Uniform Delay, d1		12.4			14.6			10.4			6.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.1			0.6			0.2	
Delay (s)		12.5			15.7			11.0			6.6	
Level of Service		B			B			B			A	
Approach Delay (s)		12.5			15.7			11.0			6.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

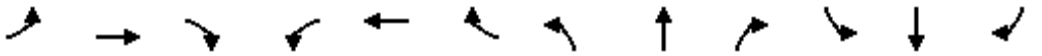
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



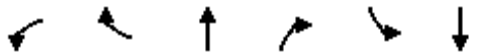
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	571	81	64	444	0	55	0	59	417	125	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3462		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.32	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3462		598	3539			1291		1194	1346	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	642	91	72	499	0	62	0	66	469	140	297
RTOR Reduction (vph)	0	0	0	0	0	0	0	41	0	0	0	147
Lane Group Flow (vph)	0	733	0	72	499	0	0	87	0	300	309	150
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		18.6		18.6	18.6			17.9		17.9	17.9	17.9
Effective Green, g (s)		18.6		18.6	18.6			17.9		17.9	17.9	17.9
Actuated g/C Ratio		0.40		0.40	0.40			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1385		239	1416			497		460	518	601
v/s Ratio Prot		c0.21			0.14							
v/s Ratio Perm				0.12				0.07		c0.25	0.23	0.10
v/c Ratio		0.53		0.30	0.35			0.18		0.65	0.60	0.25
Uniform Delay, d1		10.6		9.5	9.7			9.4		11.7	11.4	9.7
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		2.5	1.2	0.1
Delay (s)		10.8		9.8	9.8			9.5		14.3	12.7	9.8
Level of Service		B		A	A			A		B	B	A
Approach Delay (s)		10.8			9.8			9.5			12.3	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	696	180	113	543	54	170	167	134	80	264	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1500
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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1500
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	101	718	186	116	560	56	175	172	138	82	272	74
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	87	0	0	29
Lane Group Flow (vph)	101	881	0	116	608	0	175	172	51	82	272	45
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	24.5		7.6	25.0		12.3	25.5	25.0	6.1	19.3	24.5
Effective Green, g (s)	7.1	24.5		7.6	25.0		12.3	25.5	25.0	6.1	19.3	24.5
Actuated g/C Ratio	0.09	0.30		0.09	0.31		0.15	0.32	0.31	0.08	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	156	1028		167	1072		270	589	471	134	446	455
v/s Ratio Prot	0.06	c0.26		c0.07	0.18		c0.10	0.09		0.05	c0.15	
v/s Ratio Perm									0.03			0.03
v/c Ratio	0.65	0.86		0.69	0.57		0.65	0.29	0.11	0.61	0.61	0.10
Uniform Delay, d1	35.6	26.5		35.4	23.3		32.2	20.8	19.9	36.2	27.3	20.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	7.2		9.7	0.7		4.0	0.3	0.1	5.7	2.4	0.1
Delay (s)	42.3	33.6		45.1	24.0		36.1	21.1	20.0	41.9	29.7	20.3
Level of Service	D	C		D	C		D	C	B	D	C	C
Approach Delay (s)		34.5			27.4			26.2			30.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	42	507	34	41	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1659		3500			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1659		3500			3152
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	45	539	36	44	651
RTOR Reduction (vph)	32	0	6	0	0	0
Lane Group Flow (vph)	45	0	569	0	0	695
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2144			1931
v/s Ratio Prot	c0.03		0.16			
v/s Ratio Perm						c0.22
v/c Ratio	0.09		0.27			0.36
Uniform Delay, d1	20.9		7.2			7.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.5
Delay (s)	21.3		7.5			8.2
Level of Service	C		A			A
Approach Delay (s)	21.3		7.5			8.2
Approach LOS	C		A			A

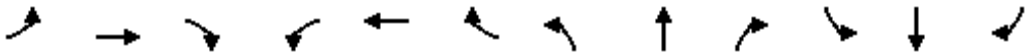
Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	53	19	0	43	34	497	52	50	585	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	55	20	0	45	35	518	54	52	609	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1101	1369	317	1091	1344	296	620			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1101	1369	317	1091	1344	296	620			577		
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	98	92	86	100	94	96			95		
cM capacity (veh/h)	143	132	673	140	136	695	953			989		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	65	294	313	357	310
Volume Left	0	20	35	0	52	0
Volume Right	55	45	0	54	0	5
cSH	551	314	953	1700	989	1700
Volume to Capacity	0.11	0.21	0.04	0.18	0.05	0.18
Queue Length 95th (ft)	9	19	3	0	4	0
Control Delay (s)	12.3	19.4	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.3	19.4	0.7		1.0	
Approach LOS	B	C				

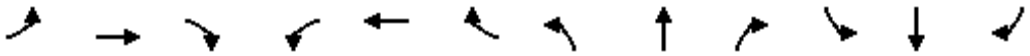
Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	55.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	456	113	111	533	73	116	502	85	69	411	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1803			1819			3426		1770	3482	
Flt Permitted		0.96			0.79			0.74		0.27	1.00	
Satd. Flow (perm)		1728			1445			2553		496	3482	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	465	115	113	544	74	118	512	87	70	419	37
RTOR Reduction (vph)	0	9	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	597	0	0	727	0	0	706	0	70	449	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		899			751			1021		198	1393	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.35			c0.50			c0.28		0.14		
v/c Ratio		0.66			0.97			0.69		0.35	0.32	
Uniform Delay, d1		17.6			23.2			24.9		21.0	20.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		3.9			26.0			3.8		4.9	0.6	
Delay (s)		21.5			49.2			28.7		25.9	21.3	
Level of Service		C			D			C		C	C	
Approach Delay (s)		21.5			49.2			28.7			21.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	150.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	354	39	62	253	96	23	706	126	59	892	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3467			3505	1514	1770	3446			3496	
Flt Permitted		0.94			0.79	1.00	0.24	1.00			0.86	
Satd. Flow (perm)		3257			2807	1514	438	3446			3010	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	361	40	63	258	98	23	720	129	60	910	54
RTOR Reduction (vph)	0	9	0	0	0	73	0	13	0	0	4	0
Lane Group Flow (vph)	0	407	0	0	321	25	23	836	0	0	1020	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		17.4			17.4	17.4	43.0	43.0			43.0	
Effective Green, g (s)		17.4			17.4	17.4	43.0	43.0			43.0	
Actuated g/C Ratio		0.25			0.25	0.25	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		829			714	385	275	2166			1892	
v/s Ratio Prot								0.24				
v/s Ratio Perm		c0.12			0.11	0.02	0.05				c0.34	
v/c Ratio		0.49			0.45	0.06	0.08	0.39			0.54	
Uniform Delay, d1		21.7			21.5	19.3	5.0	6.2			7.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.1	0.1			0.3	
Delay (s)		22.2			21.9	19.4	5.1	6.3			7.4	
Level of Service		C			C	B	A	A			A	
Approach Delay (s)		22.2			21.3			6.3			7.4	
Approach LOS		C			C			A			A	

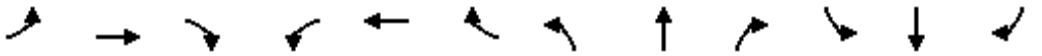
Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	133	3	115	2	355	152	212	550	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1770			1686			3341			3486	
Flt Permitted		0.91			0.83			0.95			0.63	
Satd. Flow (perm)		1642			1434			3186			2235	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	148	3	128	2	394	169	236	611	6
RTOR Reduction (vph)	0	1	0	0	23	0	0	41	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	256	0	0	524	0	0	852	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		20.8			20.8			42.3			47.9	
Effective Green, g (s)		20.8			20.8			42.3			47.9	
Actuated g/C Ratio		0.27			0.27			0.55			0.62	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		445			389			1757			1422	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.18			0.16			c0.36	
v/c Ratio		0.02			0.66			0.30			5.76dl	
Uniform Delay, d1		20.5			24.8			9.2			8.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			4.0			0.1			0.7	
Delay (s)		20.5			28.8			9.3			9.3	
Level of Service		C			C			A			A	
Approach Delay (s)		20.5			28.8			9.3			9.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	76.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

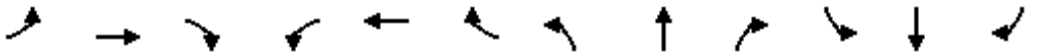
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	757	151	94	700	0	66	0	77	380	67	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1709	1559
Flt Permitted		1.00		0.22	1.00			0.75		0.71	0.73	1.00
Satd. Flow (perm)		3436		401	3539			1291		1251	1299	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	851	170	106	787	0	74	0	87	427	75	162
RTOR Reduction (vph)	0	0	0	0	0	0	0	37	0	0	0	44
Lane Group Flow (vph)	0	1021	0	106	787	0	0	124	0	248	254	118
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Effective Green, g (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Actuated g/C Ratio		0.51		0.51	0.51			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1740		203	1792			399		386	401	481
v/s Ratio Prot		c0.30			0.22							
v/s Ratio Perm				0.26				0.10		c0.20	0.20	0.08
v/c Ratio		0.59		0.52	0.44			0.31		0.64	0.63	0.24
Uniform Delay, d1		9.4		9.0	8.5			14.3		16.1	16.1	14.0
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3		1.1	0.1			0.2		2.7	2.4	0.1
Delay (s)		9.7		10.1	8.5			14.5		18.9	18.5	14.1
Level of Service		A		B	A			B		B	B	B
Approach Delay (s)		9.7			8.7			14.5			17.5	
Approach LOS		A			A			B			B	

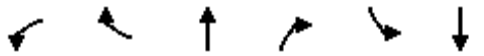
Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	632	129	107	875	68	242	347	137	113	194	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1770	3427		1770	3470		1770	1863	1525	1770	1863	1546
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)	1770	3427		1770	3470		1770	1863	1525	1770	1863	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	695	142	118	962	75	266	381	151	124	213	86
RTOR Reduction (vph)	0	16	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	76	821	0	118	1032	0	266	381	107	124	213	41
Confl. Peds. (#/hr)			7			40			24			11
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.7	29.1		7.9	30.3		16.1	26.1	26.1	8.8	18.8	18.8
Effective Green, g (s)	6.7	29.1		7.9	30.3		16.1	26.1	26.1	8.8	18.8	18.8
Actuated g/C Ratio	0.08	0.33		0.09	0.34		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1122		157	1183		321	547	448	175	394	327
v/s Ratio Prot	0.04	0.24		c0.07	c0.30		c0.15	c0.20		0.07	0.11	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.57	0.73		0.75	0.87		0.83	0.70	0.24	0.71	0.54	0.13
Uniform Delay, d1	39.7	26.4		39.5	27.5		35.1	27.9	23.9	38.8	31.2	28.4
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	3.6	2.5		16.3	7.3		15.3	3.8	0.3	10.2	1.5	0.2
Delay (s)	43.4	28.9		55.9	34.8		50.4	31.7	24.1	49.0	32.7	28.6
Level of Service	D	C		E	C		D	C	C	D	C	C
Approach Delay (s)		30.1			36.9			36.5			36.7	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

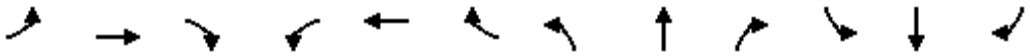
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	54	673	14	13	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1642		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1642		3527			3303
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	59	740	15	14	514
RTOR Reduction (vph)	42	0	2	0	0	0
Lane Group Flow (vph)	46	0	753	0	0	528
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2023
v/s Ratio Prot	c0.03		c0.21			
v/s Ratio Perm						0.16
v/c Ratio	0.10		0.35			0.26
Uniform Delay, d1	20.9		7.6			7.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.3
Delay (s)	21.3		8.1			7.5
Level of Service	C		A			A
Approach Delay (s)	21.3		8.1			7.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

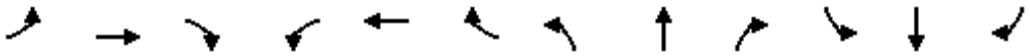
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	48	22	2	52	32	638	35	38	449	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	54	25	2	58	36	717	39	43	504	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1092	1430	264	1212	1413	388	514			761		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1092	1430	264	1212	1413	388	514			761		
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 %	97	96	93	78	98	90	97			95		
cM capacity (veh/h)	139	121	728	114	124	605	1043			843		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	63	85	394	398	295	257
Volume Left	4	25	36	0	43	0
Volume Right	54	58	0	39	0	4
cSH	438	258	1043	1700	843	1700
Volume to Capacity	0.14	0.33	0.03	0.23	0.05	0.15
Queue Length 95th (ft)	12	35	3	0	4	0
Control Delay (s)	14.6	25.7	1.1	0.0	1.9	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	14.6	25.7	0.6		1.0	
Approach LOS	B	D				

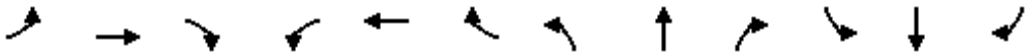
Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	55.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	457	92	69	382	92	79	487	104	53	254	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1810			1801			3411		1770	3484	
Flt Permitted		0.94			0.87			0.86		0.28	1.00	
Satd. Flow (perm)		1700			1574			2967		529	3484	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	43	466	94	70	390	94	81	497	106	54	259	22
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	6	0
Lane Group Flow (vph)	0	596	0	0	547	0	0	669	0	54	275	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		884			818			1187		212	1394	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.35			0.35			c0.23		0.10		
v/c Ratio		0.67			0.67			0.56		0.25	0.20	
Uniform Delay, d1		17.7			17.7			23.2		20.0	19.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.1			4.3			1.9		2.9	0.3	
Delay (s)		21.8			22.0			25.2		22.9	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		21.8			22.0			25.2			20.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	224	25	73	390	153	43	947	78	32	489	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3459			3511	1515	1770	3492			3480	
Flt Permitted		0.88			0.85	1.00	0.40	1.00			0.86	
Satd. Flow (perm)		3056			2998	1515	747	3492			3014	
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)	31	238	27	78	415	163	46	1007	83	34	520	48
RTOR Reduction (vph)	0	8	0	0	0	69	0	6	0	0	7	0
Lane Group Flow (vph)	0	288	0	0	493	94	46	1084	0	0	595	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Effective Green, g (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		935			917	464	431	2014			1739	
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.09			c0.16	0.06	0.06				0.20	
v/c Ratio		0.31			0.54	0.20	0.11	0.54			0.34	
Uniform Delay, d1		18.2			19.7	17.5	6.5	8.9			7.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.6	0.2	0.1	0.3			0.1	
Delay (s)		18.4			20.3	17.8	6.6	9.1			7.7	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		18.4			19.7			9.0			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	127	1	99	1	655	172	146	283	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1661			1692			3406			3474	
Flt Permitted		0.96			0.82			0.95			0.58	
Satd. Flow (perm)		1611			1434			3251			2055	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	132	1	103	1	682	179	152	295	5
RTOR Reduction (vph)	0	3	0	0	21	0	0	25	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	215	0	0	837	0	0	451	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		14.3			14.3			21.7			27.0	
Effective Green, g (s)		14.3			14.3			21.7			27.0	
Actuated g/C Ratio		0.29			0.29			0.44			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		467			416			1431			1163	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.15			c0.26			0.20	
v/c Ratio		0.01			0.52			0.58			2.98dl	
Uniform Delay, d1		12.4			14.6			10.4			6.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.1			0.6			0.2	
Delay (s)		12.5			15.7			11.0			6.6	
Level of Service		B			B			B			A	
Approach Delay (s)		12.5			15.7			11.0			6.6	
Approach LOS		B			B			B			A	

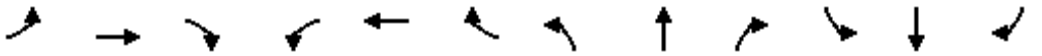
Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	585	81	64	444	0	55	0	59	417	125	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3464		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.31	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3464		584	3539			1289		1194	1346	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	657	91	72	499	0	62	0	66	469	140	297
RTOR Reduction (vph)	0	0	0	0	0	0	0	41	0	0	0	148
Lane Group Flow (vph)	0	748	0	72	499	0	0	87	0	300	309	149
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		19.1		19.1	19.1			17.9		17.9	17.9	17.9
Effective Green, g (s)		19.1		19.1	19.1			17.9		17.9	17.9	17.9
Actuated g/C Ratio		0.41		0.41	0.41			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1408		237	1438			491		455	513	594
v/s Ratio Prot		c0.22			0.14							
v/s Ratio Perm				0.12				0.07		c0.25	0.23	0.10
v/c Ratio		0.53		0.30	0.35			0.18		0.66	0.60	0.25
Uniform Delay, d1		10.6		9.4	9.6			9.7		12.0	11.7	10.0
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		2.6	1.4	0.1
Delay (s)		10.8		9.7	9.7			9.7		14.7	13.1	10.0
Level of Service		B		A	A			A		B	B	B
Approach Delay (s)		10.8			9.7			9.7			12.6	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



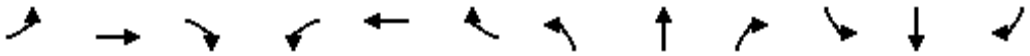
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	696	180	113	543	54	172	167	148	80	264	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1500
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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1500
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	101	718	186	116	560	56	177	172	153	82	272	74
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	96	0	0	29
Lane Group Flow (vph)	101	881	0	116	608	0	177	172	57	82	272	45
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	24.5		7.7	25.1		12.3	25.6	25.1	6.1	19.4	24.5
Effective Green, g (s)	7.1	24.5		7.7	25.1		12.3	25.6	25.1	6.1	19.4	24.5
Actuated g/C Ratio	0.09	0.30		0.10	0.31		0.15	0.32	0.31	0.08	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	155	1025		168	1074		269	590	472	133	447	454
v/s Ratio Prot	0.06	c0.26		c0.07	0.18		c0.10	0.09		0.05	c0.15	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.65	0.86		0.69	0.57		0.66	0.29	0.12	0.62	0.61	0.10
Uniform Delay, d1	35.7	26.6		35.4	23.3		32.3	20.8	20.0	36.3	27.4	20.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	7.3		9.4	0.7		4.4	0.3	0.1	5.9	2.3	0.1
Delay (s)	43.0	33.9		44.9	24.0		36.7	21.1	20.1	42.1	29.7	20.4
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		34.8			27.3			26.3			30.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	42	523	34	41	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1659		3501			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1659		3501			3146
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	45	556	36	44	651
RTOR Reduction (vph)	32	0	6	0	0	0
Lane Group Flow (vph)	45	0	586	0	0	695
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2144			1927
v/s Ratio Prot	c0.03		0.17			
v/s Ratio Perm						c0.22
v/c Ratio	0.09		0.27			0.36
Uniform Delay, d1	20.9		7.2			7.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.5
Delay (s)	21.3		7.5			8.2
Level of Service	C		A			A
Approach Delay (s)	21.3		7.5			8.2
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

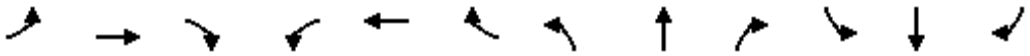
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	53	23	0	59	34	497	52	50	585	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	55	24	0	61	35	518	54	52	609	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1117	1369	317	1091	1344	296	620			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1117	1369	317	1091	1344	296	620			577		
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	98	92	83	100	91	96			95		
cM capacity (veh/h)	136	132	673	140	136	695	953			989		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	85	294	313	357	310
Volume Left	0	24	35	0	52	0
Volume Right	55	61	0	54	0	5
cSH	551	329	953	1700	989	1700
Volume to Capacity	0.11	0.26	0.04	0.18	0.05	0.18
Queue Length 95th (ft)	9	25	3	0	4	0
Control Delay (s)	12.3	19.7	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.3	19.7	0.7		1.0	
Approach LOS	B	C				

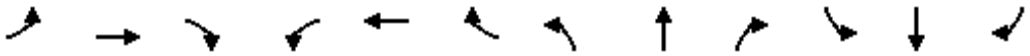
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	56.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	456	113	111	535	73	116	502	85	69	411	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1803			1819			3426		1770	3482	
Flt Permitted		0.96			0.79			0.74		0.27	1.00	
Satd. Flow (perm)		1728			1445			2553		496	3482	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	465	115	113	546	74	118	512	87	70	419	37
RTOR Reduction (vph)	0	9	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	597	0	0	729	0	0	706	0	70	449	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		899			751			1021		198	1393	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.35			c0.50			c0.28		0.14		
v/c Ratio		0.66			0.97			0.69		0.35	0.32	
Uniform Delay, d1		17.6			23.3			24.9		21.0	20.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		3.9			26.5			3.8		4.9	0.6	
Delay (s)		21.5			49.7			28.7		25.9	21.3	
Level of Service		C			D			C		C	C	
Approach Delay (s)		21.5			49.7			28.7			21.9	
Approach LOS		C			D			C			C	

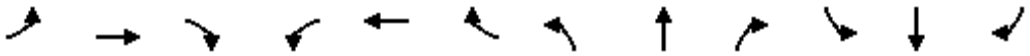
Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	150.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	354	39	62	255	96	23	706	126	59	892	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3467			3505	1514	1770	3446			3496	
Flt Permitted		0.94			0.79	1.00	0.24	1.00			0.86	
Satd. Flow (perm)		3257			2809	1514	438	3446			3010	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	361	40	63	260	98	23	720	129	60	910	54
RTOR Reduction (vph)	0	9	0	0	0	73	0	13	0	0	4	0
Lane Group Flow (vph)	0	407	0	0	323	25	23	836	0	0	1020	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		17.4			17.4	17.4	43.0	43.0			43.0	
Effective Green, g (s)		17.4			17.4	17.4	43.0	43.0			43.0	
Actuated g/C Ratio		0.25			0.25	0.25	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		829			715	385	275	2166			1892	
v/s Ratio Prot								0.24				
v/s Ratio Perm		c0.12			0.11	0.02	0.05				c0.34	
v/c Ratio		0.49			0.45	0.06	0.08	0.39			0.54	
Uniform Delay, d1		21.7			21.5	19.3	5.0	6.2			7.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.1	0.1			0.3	
Delay (s)		22.2			21.9	19.4	5.1	6.3			7.4	
Level of Service		C			C	B	A	A			A	
Approach Delay (s)		22.2			21.3			6.3			7.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

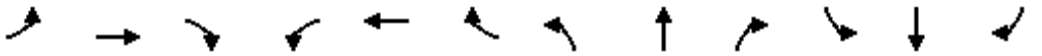


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	135	3	115	2	355	152	212	550	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1770			1687			3341			3486	
Flt Permitted		0.91			0.83			0.95			0.63	
Satd. Flow (perm)		1642			1433			3186			2234	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	150	3	128	2	394	169	236	611	6
RTOR Reduction (vph)	0	1	0	0	22	0	0	41	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	259	0	0	524	0	0	852	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		21.2			21.2			42.4			48.0	
Effective Green, g (s)		21.2			21.2			42.4			48.0	
Actuated g/C Ratio		0.27			0.27			0.55			0.62	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		451			394			1750			1415	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.18			0.16			c0.36	
v/c Ratio		0.02			0.66			0.30			5.76dl	
Uniform Delay, d1		20.4			24.8			9.4			8.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			3.9			0.1			0.7	
Delay (s)		20.4			28.7			9.5			9.6	
Level of Service		C			C			A			A	
Approach Delay (s)		20.4			28.7			9.5			9.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

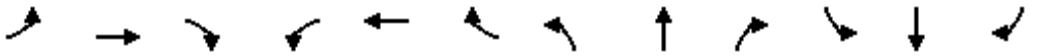
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	757	151	94	700	0	66	0	77	380	67	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1709	1559
Flt Permitted		1.00		0.22	1.00			0.75		0.71	0.73	1.00
Satd. Flow (perm)		3436		401	3539			1291		1251	1299	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	851	170	106	787	0	74	0	87	427	75	148
RTOR Reduction (vph)	0	0	0	0	0	0	0	37	0	0	0	44
Lane Group Flow (vph)	0	1021	0	106	787	0	0	124	0	248	254	104
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Effective Green, g (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Actuated g/C Ratio		0.51		0.51	0.51			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1740		203	1792			399		386	401	481
v/s Ratio Prot		c0.30			0.22							
v/s Ratio Perm				0.26				0.10		c0.20	0.20	0.07
v/c Ratio		0.59		0.52	0.44			0.31		0.64	0.63	0.22
Uniform Delay, d1		9.4		9.0	8.5			14.3		16.1	16.1	13.8
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3		1.1	0.1			0.2		2.7	2.4	0.1
Delay (s)		9.7		10.1	8.5			14.5		18.9	18.5	13.9
Level of Service		A		B	A			B		B	B	B
Approach Delay (s)		9.7			8.7			14.5			17.6	
Approach LOS		A			A			B			B	

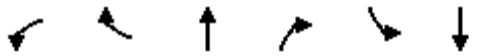
Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	632	141	95	875	68	242	347	137	113	194	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1770	3419		1770	3470		1770	1863	1525	1770	1863	1546
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)	1770	3419		1770	3470		1770	1863	1525	1770	1863	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	695	155	104	962	75	266	381	151	124	213	86
RTOR Reduction (vph)	0	18	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	76	832	0	104	1032	0	266	381	107	124	213	41
Confl. Peds. (#/hr)			7			40			24			11
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.7	29.3		7.7	30.3		16.0	25.9	25.9	8.8	18.7	18.7
Effective Green, g (s)	6.7	29.3		7.7	30.3		16.0	25.9	25.9	8.8	18.7	18.7
Actuated g/C Ratio	0.08	0.33		0.09	0.34		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	134	1129		154	1185		319	544	445	176	393	326
v/s Ratio Prot	0.04	0.24		c0.06	c0.30		c0.15	c0.20		0.07	0.11	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.57	0.74		0.68	0.87		0.83	0.70	0.24	0.70	0.54	0.13
Uniform Delay, d1	39.6	26.3		39.3	27.4		35.1	27.9	23.9	38.7	31.2	28.4
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	3.3	2.5		8.8	7.2		16.2	4.1	0.3	10.0	1.5	0.2
Delay (s)	42.9	28.8		48.1	34.6		51.2	32.0	24.2	48.7	32.7	28.5
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		30.0			35.8			36.9			36.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	34.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

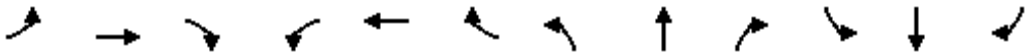
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	54	673	14	13	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1642		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1642		3527			3303
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	59	740	15	14	514
RTOR Reduction (vph)	42	0	2	0	0	0
Lane Group Flow (vph)	46	0	753	0	0	528
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2023
v/s Ratio Prot	c0.03		c0.21			
v/s Ratio Perm						0.16
v/c Ratio	0.10		0.35			0.26
Uniform Delay, d1	20.9		7.6			7.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.3
Delay (s)	21.3		8.1			7.5
Level of Service	C		A			A
Approach Delay (s)	21.3		8.1			7.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

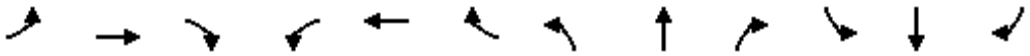
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	48	22	2	52	32	638	35	38	449	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	54	25	2	58	36	717	39	43	504	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1092	1430	264	1212	1413	388	514			761		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1092	1430	264	1212	1413	388	514			761		
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 %	97	96	93	78	98	90	97			95		
cM capacity (veh/h)	139	121	728	114	124	605	1043			843		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	63	85	394	398	295	257
Volume Left	4	25	36	0	43	0
Volume Right	54	58	0	39	0	4
cSH	438	258	1043	1700	843	1700
Volume to Capacity	0.14	0.33	0.03	0.23	0.05	0.15
Queue Length 95th (ft)	12	35	3	0	4	0
Control Delay (s)	14.6	25.7	1.1	0.0	1.9	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	14.6	25.7	0.6		1.0	
Approach LOS	B	D				

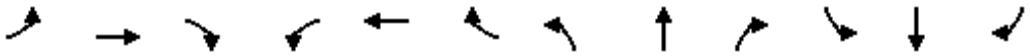
Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	55.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	469	92	69	382	92	79	487	104	53	254	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1811			1801			3411		1770	3484	
Flt Permitted		0.94			0.87			0.86		0.28	1.00	
Satd. Flow (perm)		1703			1568			2967		529	3484	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	43	479	94	70	390	94	81	497	106	54	259	22
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	6	0
Lane Group Flow (vph)	0	609	0	0	547	0	0	669	0	54	275	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		886			815			1187		212	1394	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.36			0.35			c0.23		0.10		
v/c Ratio		0.69			0.67			0.56		0.25	0.20	
Uniform Delay, d1		17.9			17.7			23.2		20.0	19.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.3			4.4			1.9		2.9	0.3	
Delay (s)		22.3			22.1			25.2		22.9	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		22.3			22.1			25.2			20.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	236	25	73	390	153	43	947	78	32	489	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3462			3511	1515	1770	3492			3480	
Flt Permitted		0.88			0.84	1.00	0.40	1.00			0.86	
Satd. Flow (perm)		3067			2988	1515	747	3492			3014	
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)	31	251	27	78	415	163	46	1007	83	34	520	48
RTOR Reduction (vph)	0	8	0	0	0	69	0	6	0	0	7	0
Lane Group Flow (vph)	0	301	0	0	493	94	46	1084	0	0	595	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Effective Green, g (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		939			914	464	431	2014			1739	
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.10			c0.17	0.06	0.06				0.20	
v/c Ratio		0.32			0.54	0.20	0.11	0.54			0.34	
Uniform Delay, d1		18.2			19.7	17.5	6.5	8.9			7.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.6	0.2	0.1	0.3			0.1	
Delay (s)		18.4			20.3	17.8	6.6	9.1			7.7	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		18.4			19.7			9.0			7.7	
Approach LOS		B			B			A			A	

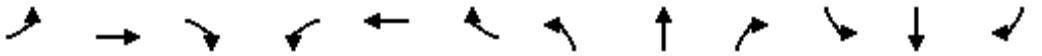
Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	127	1	99	1	655	184	146	283	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1661			1692			3398			3474	
Flt Permitted		0.96			0.82			0.95			0.58	
Satd. Flow (perm)		1611			1434			3244			2048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	132	1	103	1	682	192	152	295	5
RTOR Reduction (vph)	0	3	0	0	21	0	0	27	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	215	0	0	848	0	0	451	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		14.3			14.3			22.0			27.3	
Effective Green, g (s)		14.3			14.3			22.0			27.3	
Actuated g/C Ratio		0.29			0.29			0.44			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		464			413			1439			1165	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.15			c0.26			0.20	
v/c Ratio		0.01			0.52			0.59			3.04dl	
Uniform Delay, d1		12.6			14.8			10.4			6.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.2			0.6			0.2	
Delay (s)		12.6			16.0			11.0			6.6	
Level of Service		B			B			B			A	
Approach Delay (s)		12.6			16.0			11.0			6.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

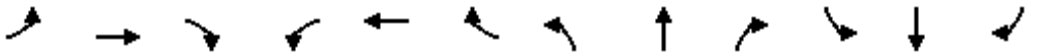
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



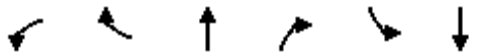
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	573	81	64	444	0	55	0	59	417	125	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3463		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.32	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3463		595	3539			1291		1194	1346	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	644	91	72	499	0	62	0	66	469	140	297
RTOR Reduction (vph)	0	0	0	0	0	0	0	41	0	0	0	147
Lane Group Flow (vph)	0	735	0	72	499	0	0	87	0	300	309	150
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		18.6		18.6	18.6			17.9		17.9	17.9	17.9
Effective Green, g (s)		18.6		18.6	18.6			17.9		17.9	17.9	17.9
Actuated g/C Ratio		0.40		0.40	0.40			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1385		238	1416			497		460	518	601
v/s Ratio Prot		c0.21			0.14							
v/s Ratio Perm				0.12				0.07		c0.25	0.23	0.10
v/c Ratio		0.53		0.30	0.35			0.18		0.65	0.60	0.25
Uniform Delay, d1		10.6		9.5	9.7			9.4		11.7	11.4	9.7
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		2.5	1.2	0.1
Delay (s)		10.8		9.8	9.8			9.5		14.3	12.7	9.8
Level of Service		B		A	A			A		B	B	A
Approach Delay (s)		10.8			9.8			9.5			12.3	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	696	180	113	543	54	184	167	136	80	264	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1770	3384		1770	3461		1770	1863	1520	1770	1863	1500
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)	1770	3384		1770	3461		1770	1863	1520	1770	1863	1500
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	101	718	186	116	560	56	190	172	140	82	272	74
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	88	0	0	29
Lane Group Flow (vph)	101	881	0	116	608	0	190	172	52	82	272	45
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	24.5		7.7	25.1		12.9	26.2	25.1	6.1	19.4	24.5
Effective Green, g (s)	7.1	24.5		7.7	25.1		12.9	26.2	25.1	6.1	19.4	24.5
Actuated g/C Ratio	0.09	0.30		0.09	0.31		0.16	0.32	0.31	0.07	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	154	1017		167	1066		280	599	468	132	443	451
v/s Ratio Prot	0.06	c0.26		c0.07	0.18		c0.11	0.09		0.05	c0.15	
v/s Ratio Perm									0.03			0.03
v/c Ratio	0.66	0.87		0.69	0.57		0.68	0.29	0.11	0.62	0.61	0.10
Uniform Delay, d1	36.0	27.0		35.8	23.7		32.3	20.7	20.2	36.6	27.7	20.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	7.9		9.7	0.7		5.1	0.3	0.1	6.4	2.5	0.1
Delay (s)	43.5	34.8		45.4	24.4		37.4	20.9	20.3	43.0	30.2	20.6
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		35.7			27.7			27.0			31.0	
Approach LOS		D			C			C			C	

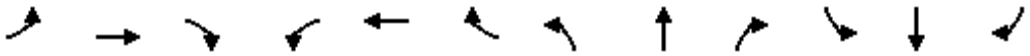
Intersection Summary			
HCM Average Control Delay	31.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	81.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	42	523	34	41	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1659		3501			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1659		3501			3146
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	45	556	36	44	651
RTOR Reduction (vph)	32	0	6	0	0	0
Lane Group Flow (vph)	45	0	586	0	0	695
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2144			1927
v/s Ratio Prot	c0.03		0.17			
v/s Ratio Perm						c0.22
v/c Ratio	0.09		0.27			0.36
Uniform Delay, d1	20.9		7.2			7.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.5
Delay (s)	21.3		7.5			8.2
Level of Service	C		A			A
Approach Delay (s)	21.3		7.5			8.2
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

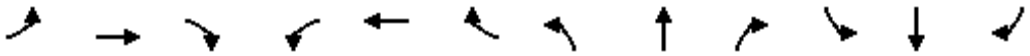
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	53	23	0	59	34	497	52	50	585	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	55	24	0	61	35	518	54	52	609	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1117	1369	317	1091	1344	296	620			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1117	1369	317	1091	1344	296	620			577		
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	98	92	83	100	91	96			95		
cM capacity (veh/h)	136	132	673	140	136	695	953			989		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	85	294	313	357	310
Volume Left	0	24	35	0	52	0
Volume Right	55	61	0	54	0	5
cSH	551	329	953	1700	989	1700
Volume to Capacity	0.11	0.26	0.04	0.18	0.05	0.18
Queue Length 95th (ft)	9	25	3	0	4	0
Control Delay (s)	12.3	19.7	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.3	19.7	0.7		1.0	
Approach LOS	B	C				

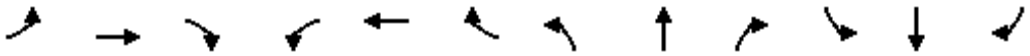
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	56.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	456	113	111	547	73	116	502	85	69	411	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1803			1820			3426		1770	3482	
Flt Permitted		0.96			0.79			0.74		0.27	1.00	
Satd. Flow (perm)		1727			1450			2553		496	3482	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	465	115	113	558	74	118	512	87	70	419	37
RTOR Reduction (vph)	0	9	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	597	0	0	741	0	0	706	0	70	449	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		898			754			1021		198	1393	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.35			c0.51			c0.28		0.14		
v/c Ratio		0.67			0.98			0.69		0.35	0.32	
Uniform Delay, d1		17.6			23.6			24.9		21.0	20.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		3.9			28.9			3.8		4.9	0.6	
Delay (s)		21.5			52.5			28.7		25.9	21.3	
Level of Service		C			D			C		C	C	
Approach Delay (s)		21.5			52.5			28.7			21.9	
Approach LOS		C			D			C			C	

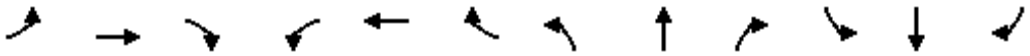
Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	150.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	354	39	62	267	96	23	706	126	59	892	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3467			3506	1514	1770	3446			3496	
Flt Permitted		0.94			0.80	1.00	0.23	1.00			0.86	
Satd. Flow (perm)		3256			2828	1514	437	3446			3009	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	361	40	63	272	98	23	720	129	60	910	54
RTOR Reduction (vph)	0	9	0	0	0	73	0	13	0	0	4	0
Lane Group Flow (vph)	0	407	0	0	335	25	23	836	0	0	1020	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		17.7			17.7	17.7	43.1	43.1			43.1	
Effective Green, g (s)		17.7			17.7	17.7	43.1	43.1			43.1	
Actuated g/C Ratio		0.26			0.26	0.26	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		838			728	390	274	2159			1885	
v/s Ratio Prot								0.24				
v/s Ratio Perm		c0.13			0.12	0.02	0.05				c0.34	
v/c Ratio		0.49			0.46	0.06	0.08	0.39			0.54	
Uniform Delay, d1		21.7			21.5	19.3	5.1	6.3			7.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.4			0.5	0.1	0.1	0.1			0.3	
Delay (s)		22.1			22.0	19.4	5.2	6.5			7.6	
Level of Service		C			C	B	A	A			A	
Approach Delay (s)		22.1			21.4			6.4			7.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	68.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

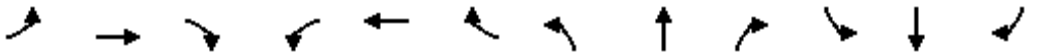


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	147	3	115	2	355	152	212	550	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1770			1691			3340			3486	
Flt Permitted		0.91			0.82			0.95			0.63	
Satd. Flow (perm)		1644			1429			3185			2228	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	163	3	128	2	394	169	236	611	6
RTOR Reduction (vph)	0	1	0	0	21	0	0	42	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	273	0	0	523	0	0	852	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		22.7			22.7			42.8			48.5	
Effective Green, g (s)		22.7			22.7			42.8			48.5	
Actuated g/C Ratio		0.29			0.29			0.54			0.61	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		471			410			1721			1391	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.19			0.16			c0.36	
v/c Ratio		0.02			0.67			0.30			5.76dl	
Uniform Delay, d1		20.3			24.9			10.0			9.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			4.1			0.1			0.8	
Delay (s)		20.3			29.0			10.1			10.3	
Level of Service		C			C			B			B	
Approach Delay (s)		20.3			29.0			10.1			10.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

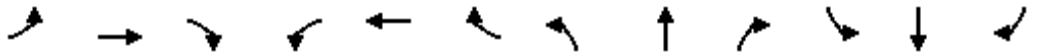
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	757	151	94	700	0	66	0	77	380	67	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1709	1559
Flt Permitted		1.00		0.21	1.00			0.75		0.71	0.73	1.00
Satd. Flow (perm)		3436		400	3539			1292		1249	1298	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	851	170	106	787	0	74	0	87	427	75	191
RTOR Reduction (vph)	0	0	0	0	0	0	0	37	0	0	0	44
Lane Group Flow (vph)	0	1021	0	106	787	0	0	124	0	248	254	147
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.5		27.5	27.5			16.9		16.9	16.9	16.9
Effective Green, g (s)		27.5		27.5	27.5			16.9		16.9	16.9	16.9
Actuated g/C Ratio		0.51		0.51	0.51			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1737		202	1789			401		388	403	484
v/s Ratio Prot		c0.30			0.22							
v/s Ratio Perm				0.26				0.10		c0.20	0.20	0.09
v/c Ratio		0.59		0.52	0.44			0.31		0.64	0.63	0.30
Uniform Delay, d1		9.5		9.1	8.6			14.3		16.1	16.1	14.3
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3		1.1	0.1			0.2		2.5	2.4	0.1
Delay (s)		9.8		10.2	8.6			14.5		18.7	18.4	14.4
Level of Service		A		B	A			B		B	B	B
Approach Delay (s)		9.8			8.8			14.5			17.4	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	10.0
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)	69	632	132	133	875	68	242	347	137	113	194	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1770	3425		1770	3469		1770	1863	1524	1770	1863	1546
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)	1770	3425		1770	3469		1770	1863	1524	1770	1863	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	695	145	146	962	75	266	381	151	124	213	86
RTOR Reduction (vph)	0	17	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	76	823	0	146	1032	0	266	381	107	124	213	41
Confl. Peds. (#/hr)			7			40			24			11
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.8	28.1		10.5	31.8		15.9	25.9	25.9	8.7	18.7	18.7
Effective Green, g (s)	6.8	28.1		10.5	31.8		15.9	25.9	25.9	8.7	18.7	18.7
Actuated g/C Ratio	0.08	0.31		0.12	0.35		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1067		206	1223		312	535	438	171	386	321
v/s Ratio Prot	0.04	0.24		c0.08	c0.30		c0.15	c0.20		0.07	0.11	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.57	0.77		0.71	0.84		0.85	0.71	0.24	0.73	0.55	0.13
Uniform Delay, d1	40.3	28.1		38.4	26.9		36.0	28.8	24.6	39.6	32.0	29.1
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	3.6	3.5		8.8	5.5		18.9	4.5	0.3	12.1	1.7	0.2
Delay (s)	43.9	31.6		47.1	32.4		55.0	33.3	24.9	51.7	33.7	29.3
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		32.7			34.2			38.9			38.1	
Approach LOS		C			C			D			D	

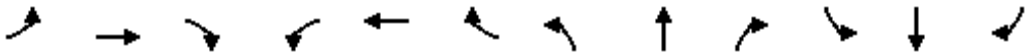
Intersection Summary			
HCM Average Control Delay	35.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	12.5
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	54	673	14	13	497
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1642		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1642		3527			3307
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	59	740	15	14	546
RTOR Reduction (vph)	42	0	2	0	0	0
Lane Group Flow (vph)	46	0	753	0	0	560
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2026
v/s Ratio Prot	c0.03		c0.21			
v/s Ratio Perm						0.17
v/c Ratio	0.10		0.35			0.28
Uniform Delay, d1	20.9		7.6			7.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.3
Delay (s)	21.3		8.1			7.6
Level of Service	C		A			A
Approach Delay (s)	21.3		8.1			7.6
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

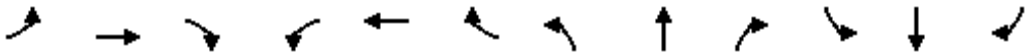
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	48	22	2	52	32	638	41	67	449	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	54	25	2	58	36	717	46	75	504	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1157	1502	264	1281	1481	391	514			768		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1157	1502	264	1281	1481	391	514			768		
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 %	96	96	93	75	98	90	97			91		
cM capacity (veh/h)	120	105	728	98	108	602	1043			838		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	63	85	394	404	328	257
Volume Left	4	25	36	0	75	0
Volume Right	54	58	0	46	0	4
cSH	408	231	1043	1700	838	1700
Volume to Capacity	0.15	0.37	0.03	0.24	0.09	0.15
Queue Length 95th (ft)	14	40	3	0	7	0
Control Delay (s)	15.4	29.4	1.1	0.0	3.0	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	15.4	29.4	0.6		1.7	
Approach LOS	C	D				

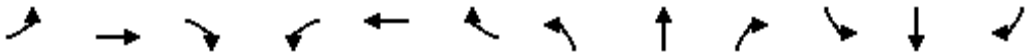
Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	460	92	69	382	92	79	487	104	53	254	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1810			1801			3411		1770	3484	
Flt Permitted		0.94			0.87			0.86		0.28	1.00	
Satd. Flow (perm)		1701			1573			2967		529	3484	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	43	469	94	70	390	94	81	497	106	54	259	22
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	6	0
Lane Group Flow (vph)	0	599	0	0	547	0	0	669	0	54	275	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		885			818			1187		212	1394	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.35			0.35			c0.23		0.10		
v/c Ratio		0.68			0.67			0.56		0.25	0.20	
Uniform Delay, d1		17.8			17.7			23.2		20.0	19.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.1			4.3			1.9		2.9	0.3	
Delay (s)		21.9			22.0			25.2		22.9	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		21.9			22.0			25.2			20.4	
Approach LOS		C			C			C			C	

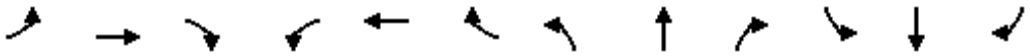
Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	118.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	227	25	73	390	153	43	947	78	32	489	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3460			3511	1515	1770	3492			3480	
Flt Permitted		0.88			0.85	1.00	0.40	1.00			0.86	
Satd. Flow (perm)		3059			2995	1515	747	3492			3014	
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)	31	241	27	78	415	163	46	1007	83	34	520	48
RTOR Reduction (vph)	0	8	0	0	0	69	0	6	0	0	7	0
Lane Group Flow (vph)	0	291	0	0	493	94	46	1084	0	0	595	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Effective Green, g (s)		20.9			20.9	20.9	39.4	39.4			39.4	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		936			916	464	431	2014			1739	
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.10			c0.16	0.06	0.06				0.20	
v/c Ratio		0.31			0.54	0.20	0.11	0.54			0.34	
Uniform Delay, d1		18.2			19.7	17.5	6.5	8.9			7.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.6	0.2	0.1	0.3			0.1	
Delay (s)		18.4			20.3	17.8	6.6	9.1			7.7	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		18.4			19.7			9.0			7.7	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	68.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

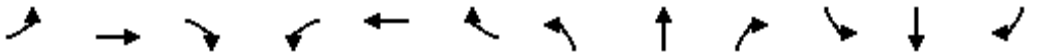


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	127	1	99	1	655	175	146	283	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1661			1692			3404			3474	
Flt Permitted		0.96			0.82			0.95			0.58	
Satd. Flow (perm)		1611			1434			3250			2053	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	132	1	103	1	682	182	152	295	5
RTOR Reduction (vph)	0	3	0	0	21	0	0	26	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	215	0	0	839	0	0	451	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		14.3			14.3			21.8			27.1	
Effective Green, g (s)		14.3			14.3			21.8			27.1	
Actuated g/C Ratio		0.29			0.29			0.44			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		466			415			1434			1164	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.15			c0.26			0.20	
v/c Ratio		0.01			0.52			0.59			3.04dl	
Uniform Delay, d1		12.5			14.7			10.4			6.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.1			0.6			0.2	
Delay (s)		12.5			15.8			11.0			6.6	
Level of Service		B			B			B			A	
Approach Delay (s)		12.5			15.8			11.0			6.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	49.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

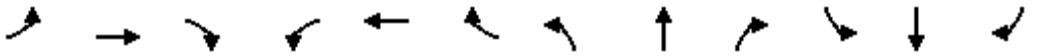
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	611	81	64	444	0	55	0	59	417	125	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3467		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.30	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3467		554	3539			1289		1194	1346	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	687	91	72	499	0	62	0	66	469	140	297
RTOR Reduction (vph)	0	0	0	0	0	0	0	41	0	0	0	148
Lane Group Flow (vph)	0	778	0	72	499	0	0	87	0	300	309	149
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		19.8		19.8	19.8			18.2		18.2	18.2	18.2
Effective Green, g (s)		19.8		19.8	19.8			18.2		18.2	18.2	18.2
Actuated g/C Ratio		0.41		0.41	0.41			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1430		229	1460			489		453	510	592
v/s Ratio Prot		c0.22			0.14							
v/s Ratio Perm				0.13				0.07		c0.25	0.23	0.10
v/c Ratio		0.54		0.31	0.34			0.18		0.66	0.61	0.25
Uniform Delay, d1		10.7		9.5	9.6			9.9		12.4	12.0	10.2
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		2.8	1.4	0.1
Delay (s)		10.9		9.8	9.7			10.0		15.2	13.4	10.3
Level of Service		B		A	A			A		B	B	B
Approach Delay (s)		10.9			9.7			10.0			13.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	696	180	113	543	54	175	167	174	80	264	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1500
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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1500
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	101	718	186	116	560	56	180	172	179	82	272	74
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	112	0	0	29
Lane Group Flow (vph)	101	881	0	116	608	0	180	172	67	82	272	45
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	24.5		7.7	25.1		12.5	25.7	25.1	6.1	19.3	24.5
Effective Green, g (s)	7.1	24.5		7.7	25.1		12.5	25.7	25.1	6.1	19.3	24.5
Actuated g/C Ratio	0.09	0.30		0.10	0.31		0.15	0.32	0.31	0.08	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	155	1024		168	1072		273	591	471	133	444	454
v/s Ratio Prot	0.06	c0.26		c0.07	0.18		c0.10	0.09		0.05	c0.15	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.65	0.86		0.69	0.57		0.66	0.29	0.14	0.62	0.61	0.10
Uniform Delay, d1	35.8	26.6		35.5	23.4		32.2	20.8	20.2	36.3	27.5	20.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	7.5		9.4	0.7		4.3	0.3	0.1	5.9	2.5	0.1
Delay (s)	43.0	34.1		44.9	24.1		36.6	21.1	20.3	42.2	30.0	20.4
Level of Service	D	C		D	C		D	C	C	D	C	C
Approach Delay (s)		35.0			27.4			26.1			30.7	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	42	552	34	41	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1659		3503			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1659		3503			3135
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	45	587	36	44	651
RTOR Reduction (vph)	32	0	5	0	0	0
Lane Group Flow (vph)	45	0	618	0	0	695
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2146			1920
v/s Ratio Prot	c0.03		0.18			
v/s Ratio Perm						c0.22
v/c Ratio	0.09		0.29			0.36
Uniform Delay, d1	20.9		7.3			7.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.5
Delay (s)	21.3		7.6			8.2
Level of Service	C		A			A
Approach Delay (s)	21.3		7.6			8.2
Approach LOS	C		A			A

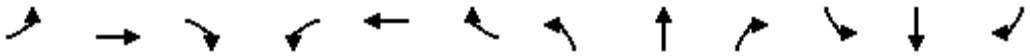
Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	53	29	0	88	34	497	52	50	585	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	55	30	0	92	35	518	54	52	609	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1148	1369	317	1091	1344	296	620			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1369	317	1091	1344	296	620			577		
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	98	92	78	100	87	96			95		
cM capacity (veh/h)	123	132	673	140	136	695	953			989		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	122	294	313	357	310
Volume Left	0	30	35	0	52	0
Volume Right	55	92	0	54	0	5
cSH	551	351	953	1700	989	1700
Volume to Capacity	0.11	0.35	0.04	0.18	0.05	0.18
Queue Length 95th (ft)	9	38	3	0	4	0
Control Delay (s)	12.3	20.6	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.3	20.6	0.7		1.0	
Approach LOS	B	C				

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	58.3%	ICU Level of Service	B	
Analysis Period (min)	15			



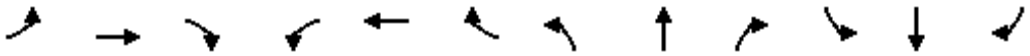
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	456	113	111	538	73	116	502	85	69	411	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1803			1819			3426		1770	3482	
Flt Permitted		0.96			0.79			0.74		0.27	1.00	
Satd. Flow (perm)		1728			1447			2553		496	3482	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	465	115	113	549	74	118	512	87	70	419	37
RTOR Reduction (vph)	0	9	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	597	0	0	732	0	0	706	0	70	449	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		899			752			1021		198	1393	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.35			c0.51			c0.28		0.14		
v/c Ratio		0.66			0.97			0.69		0.35	0.32	
Uniform Delay, d1		17.6			23.3			24.9		21.0	20.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		3.9			27.0			3.8		4.9	0.6	
Delay (s)		21.5			50.3			28.7		25.9	21.3	
Level of Service		C			D			C		C	C	
Approach Delay (s)		21.5			50.3			28.7			21.9	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM Average Control Delay	31.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	150.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	354	39	62	258	96	23	706	126	59	892	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3467			3505	1514	1770	3446			3496	
Flt Permitted		0.94			0.79	1.00	0.24	1.00			0.86	
Satd. Flow (perm)		3257			2812	1514	438	3446			3010	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	361	40	63	263	98	23	720	129	60	910	54
RTOR Reduction (vph)	0	9	0	0	0	73	0	13	0	0	4	0
Lane Group Flow (vph)	0	407	0	0	326	25	23	836	0	0	1020	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		17.4			17.4	17.4	43.0	43.0			43.0	
Effective Green, g (s)		17.4			17.4	17.4	43.0	43.0			43.0	
Actuated g/C Ratio		0.25			0.25	0.25	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		829			715	385	275	2166			1892	
v/s Ratio Prot								0.24				
v/s Ratio Perm		c0.12			0.12	0.02	0.05				c0.34	
v/c Ratio		0.49			0.46	0.06	0.08	0.39			0.54	
Uniform Delay, d1		21.7			21.5	19.3	5.0	6.2			7.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.1	0.1			0.3	
Delay (s)		22.2			22.0	19.4	5.1	6.3			7.4	
Level of Service		C			C	B	A	A			A	
Approach Delay (s)		22.2			21.4			6.3			7.4	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	68.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

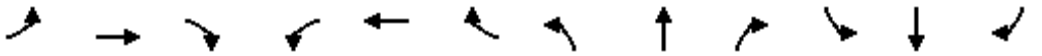


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	138	3	115	2	355	152	212	550	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1770			1688			3341			3486	
Flt Permitted		0.91			0.83			0.95			0.63	
Satd. Flow (perm)		1643			1432			3186			2232	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	153	3	128	2	394	169	236	611	6
RTOR Reduction (vph)	0	1	0	0	22	0	0	41	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	262	0	0	524	0	0	852	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		21.6			21.6			42.5			48.1	
Effective Green, g (s)		21.6			21.6			42.5			48.1	
Actuated g/C Ratio		0.28			0.28			0.55			0.62	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		457			398			1743			1408	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.18			0.16			c0.36	
v/c Ratio		0.02			0.66			0.30			5.76dl	
Uniform Delay, d1		20.4			24.8			9.5			9.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			3.9			0.1			0.7	
Delay (s)		20.4			28.7			9.6			9.8	
Level of Service		C			C			A			A	
Approach Delay (s)		20.4			28.7			9.6			9.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	77.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

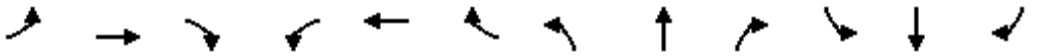
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	757	151	94	700	0	66	0	77	380	67	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1709	1559
Flt Permitted		1.00		0.22	1.00			0.75		0.71	0.73	1.00
Satd. Flow (perm)		3436		401	3539			1291		1251	1299	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	851	170	106	787	0	74	0	87	427	75	152
RTOR Reduction (vph)	0	0	0	0	0	0	0	37	0	0	0	44
Lane Group Flow (vph)	0	1021	0	106	787	0	0	124	0	248	254	108
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Effective Green, g (s)		27.4		27.4	27.4			16.7		16.7	16.7	16.7
Actuated g/C Ratio		0.51		0.51	0.51			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1740		203	1792			399		386	401	481
v/s Ratio Prot		c0.30			0.22							
v/s Ratio Perm				0.26				0.10		c0.20	0.20	0.07
v/c Ratio		0.59		0.52	0.44			0.31		0.64	0.63	0.22
Uniform Delay, d1		9.4		9.0	8.5			14.3		16.1	16.1	13.9
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3		1.1	0.1			0.2		2.7	2.4	0.1
Delay (s)		9.7		10.1	8.5			14.5		18.9	18.5	14.0
Level of Service		A		B	A			B		B	B	B
Approach Delay (s)		9.7			8.7			14.5			17.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.1	Sum of lost time (s)	10.0
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)	69	632	167	98	875	68	277	347	137	113	194	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1770	3401		1770	3470		1770	1863	1524	1770	1863	1546
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)	1770	3401		1770	3470		1770	1863	1524	1770	1863	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	695	184	108	962	75	304	381	151	124	213	86
RTOR Reduction (vph)	0	23	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	76	856	0	108	1032	0	304	381	107	124	213	41
Confl. Peds. (#/hr)			7			40			24			11
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.7	29.1		7.8	30.2		16.6	26.6	26.6	8.8	18.8	18.8
Effective Green, g (s)	6.7	29.1		7.8	30.2		16.6	26.6	26.6	8.8	18.8	18.8
Actuated g/C Ratio	0.08	0.33		0.09	0.34		0.19	0.30	0.30	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1108		155	1174		329	555	454	174	392	325
v/s Ratio Prot	0.04	0.25		c0.06	c0.30		c0.17	c0.20		0.07	0.11	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.57	0.77		0.70	0.88		0.92	0.69	0.24	0.71	0.54	0.13
Uniform Delay, d1	39.9	27.1		39.6	27.8		35.7	27.7	23.7	39.0	31.4	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	3.6	3.4		10.5	7.7		30.2	3.5	0.3	10.9	1.5	0.2
Delay (s)	43.6	30.5		50.1	35.5		66.0	31.2	24.0	49.9	33.0	28.8
Level of Service	D	C		D	D		E	C	C	D	C	C
Approach Delay (s)		31.6			36.9			42.5			37.1	
Approach LOS		C			D			D			D	

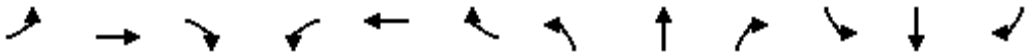
Intersection Summary			
HCM Average Control Delay	36.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	26	54	673	14	13	497
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1642		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1642		3527			3307
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	29	59	740	15	14	546
RTOR Reduction (vph)	42	0	2	0	0	0
Lane Group Flow (vph)	46	0	753	0	0	560
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2026
v/s Ratio Prot	c0.03		c0.21			
v/s Ratio Perm						0.17
v/c Ratio	0.10		0.35			0.28
Uniform Delay, d1	20.9		7.6			7.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.3
Delay (s)	21.3		8.1			7.6
Level of Service	C		A			A
Approach Delay (s)	21.3		8.1			7.6
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

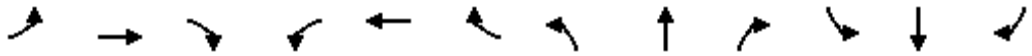
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	48	22	2	52	32	638	41	67	449	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	54	25	2	58	36	717	46	75	504	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1157	1502	264	1281	1481	391	514			768		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1157	1502	264	1281	1481	391	514			768		
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 %	96	96	93	75	98	90	97			91		
cM capacity (veh/h)	120	105	728	98	108	602	1043			838		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	63	85	394	404	328	257
Volume Left	4	25	36	0	75	0
Volume Right	54	58	0	46	0	4
cSH	408	231	1043	1700	838	1700
Volume to Capacity	0.15	0.37	0.03	0.24	0.09	0.15
Queue Length 95th (ft)	14	40	3	0	7	0
Control Delay (s)	15.4	29.4	1.1	0.0	3.0	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	15.4	29.4	0.6		1.7	
Approach LOS	C	D				

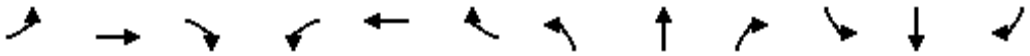
Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	495	92	69	382	92	79	487	104	53	254	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1813			1801			3411		1770	3484	
Flt Permitted		0.94			0.86			0.86		0.28	1.00	
Satd. Flow (perm)		1709			1556			2967		529	3484	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	43	505	94	70	390	94	81	497	106	54	259	22
RTOR Reduction (vph)	0	6	0	0	7	0	0	15	0	0	6	0
Lane Group Flow (vph)	0	636	0	0	547	0	0	669	0	54	275	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		889			809			1187		212	1394	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.37			0.35			c0.23		0.10		
v/c Ratio		0.72			0.68			0.56		0.25	0.20	
Uniform Delay, d1		18.3			17.8			23.2		20.0	19.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.9			4.5			1.9		2.9	0.3	
Delay (s)		23.2			22.3			25.2		22.9	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		23.2			22.3			25.2			20.4	
Approach LOS		C			C			C			C	

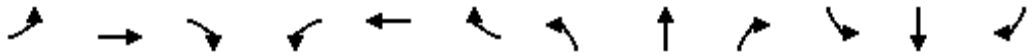
Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	262	25	73	390	153	43	947	78	32	489	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3469			3511	1515	1770	3492			3480	
Flt Permitted		0.89			0.84	1.00	0.40	1.00			0.86	
Satd. Flow (perm)		3088			2967	1515	746	3492			3013	
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)	31	279	27	78	415	163	46	1007	83	34	520	48
RTOR Reduction (vph)	0	7	0	0	0	69	0	6	0	0	7	0
Lane Group Flow (vph)	0	330	0	0	493	94	46	1084	0	0	595	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		21.1			21.1	21.1	39.5	39.5			39.5	
Effective Green, g (s)		21.1			21.1	21.1	39.5	39.5			39.5	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		950			913	466	430	2011			1735	
v/s Ratio Prot								c0.31				
v/s Ratio Perm		0.11			c0.17	0.06	0.06				0.20	
v/c Ratio		0.35			0.54	0.20	0.11	0.54			0.34	
Uniform Delay, d1		18.4			19.7	17.5	6.6	8.9			7.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.6	0.2	0.1	0.3			0.1	
Delay (s)		18.6			20.3	17.8	6.7	9.2			7.8	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		18.6			19.7			9.1			7.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	68.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

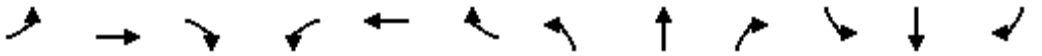


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	127	1	99	1	655	210	146	283	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.96			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1661			1692			3383			3474	
Flt Permitted		0.96			0.83			0.95			0.57	
Satd. Flow (perm)		1613			1435			3230			2025	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	132	1	103	1	682	219	152	295	5
RTOR Reduction (vph)	0	3	0	0	21	0	0	32	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	215	0	0	870	0	0	451	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		14.9			14.9			23.0			28.3	
Effective Green, g (s)		14.9			14.9			23.0			28.3	
Actuated g/C Ratio		0.29			0.29			0.45			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		469			418			1451			1156	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.15			c0.27			0.21	
v/c Ratio		0.01			0.52			0.60			3.10dl	
Uniform Delay, d1		12.9			15.1			10.6			6.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.1			0.7			0.2	
Delay (s)		12.9			16.2			11.3			6.7	
Level of Service		B			B			B			A	
Approach Delay (s)		12.9			16.2			11.3			6.7	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	51.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

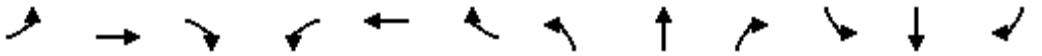
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	576	81	64	444	0	55	0	59	417	125	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3463		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.32	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3463		592	3539			1291		1194	1346	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	647	91	72	499	0	62	0	66	469	140	297
RTOR Reduction (vph)	0	0	0	0	0	0	0	41	0	0	0	147
Lane Group Flow (vph)	0	738	0	72	499	0	0	87	0	300	309	150
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		18.6		18.6	18.6			17.9		17.9	17.9	17.9
Effective Green, g (s)		18.6		18.6	18.6			17.9		17.9	17.9	17.9
Actuated g/C Ratio		0.40		0.40	0.40			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1385		237	1416			497		460	518	601
v/s Ratio Prot		c0.21			0.14							
v/s Ratio Perm				0.12				0.07		c0.25	0.23	0.10
v/c Ratio		0.53		0.30	0.35			0.18		0.65	0.60	0.25
Uniform Delay, d1		10.6		9.5	9.7			9.4		11.7	11.4	9.7
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		2.5	1.2	0.1
Delay (s)		10.8		9.8	9.8			9.5		14.3	12.7	9.8
Level of Service		B		A	A			A		B	B	A
Approach Delay (s)		10.8			9.8			9.5			12.3	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	46.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



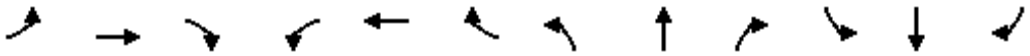
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	98	696	180	113	543	54	210	167	139	80	264	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1770	3384		1770	3461		1770	1863	1519	1770	1863	1499
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)	1770	3384		1770	3461		1770	1863	1519	1770	1863	1499
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	101	718	186	116	560	56	216	172	143	82	272	74
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	90	0	0	30
Lane Group Flow (vph)	101	881	0	116	608	0	216	172	53	82	272	44
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	24.5		7.7	25.1		13.9	27.3	25.1	6.1	19.5	24.5
Effective Green, g (s)	7.1	24.5		7.7	25.1		13.9	27.3	25.1	6.1	19.5	24.5
Actuated g/C Ratio	0.09	0.30		0.09	0.30		0.17	0.33	0.30	0.07	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	152	1004		165	1052		298	616	462	131	440	445
v/s Ratio Prot	0.06	c0.26		c0.07	0.18		c0.12	0.09		0.05	c0.15	
v/s Ratio Perm									0.03			0.03
v/c Ratio	0.66	0.88		0.70	0.58		0.72	0.28	0.11	0.63	0.62	0.10
Uniform Delay, d1	36.6	27.6		36.3	24.3		32.5	20.4	20.7	37.1	28.2	21.1
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	8.2	8.8		10.5	0.8		7.2	0.2	0.1	6.6	2.6	0.1
Delay (s)	44.8	36.4		46.9	25.1		39.8	20.6	20.8	43.7	30.8	21.2
Level of Service	D	D		D	C		D	C	C	D	C	C
Approach Delay (s)		37.2			28.5			28.5			31.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	42	552	34	41	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1659		3503			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1659		3503			3135
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	45	587	36	44	651
RTOR Reduction (vph)	32	0	5	0	0	0
Lane Group Flow (vph)	45	0	618	0	0	695
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2146			1920
v/s Ratio Prot	c0.03		0.18			
v/s Ratio Perm						c0.22
v/c Ratio	0.09		0.29			0.36
Uniform Delay, d1	20.9		7.3			7.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.5
Delay (s)	21.3		7.6			8.2
Level of Service	C		A			A
Approach Delay (s)	21.3		7.6			8.2
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

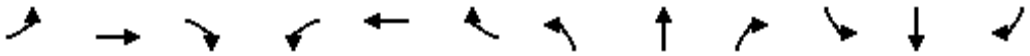
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	53	29	0	88	34	497	52	50	585	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	55	30	0	92	35	518	54	52	609	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1148	1369	317	1091	1344	296	620			577		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1369	317	1091	1344	296	620			577		
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	98	92	78	100	87	96			95		
cM capacity (veh/h)	123	132	673	140	136	695	953			989		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	122	294	313	357	310
Volume Left	0	30	35	0	52	0
Volume Right	55	92	0	54	0	5
cSH	551	351	953	1700	989	1700
Volume to Capacity	0.11	0.35	0.04	0.18	0.05	0.18
Queue Length 95th (ft)	9	38	3	0	4	0
Control Delay (s)	12.3	20.6	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.3	20.6	0.7		1.0	
Approach LOS	B	C				

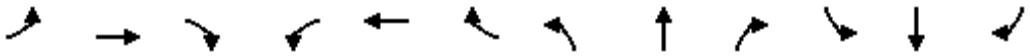
Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	58.3%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	456	113	111	573	73	116	502	85	69	411	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1803			1821			3426		1770	3482	
Flt Permitted		0.95			0.80			0.74		0.27	1.00	
Satd. Flow (perm)		1724			1461			2553		496	3482	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	26	465	115	113	585	74	118	512	87	70	419	37
RTOR Reduction (vph)	0	9	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	597	0	0	768	0	0	706	0	70	449	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		896			760			1021		198	1393	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.35			c0.53			c0.28		0.14		
v/c Ratio		0.67			1.01			0.69		0.35	0.32	
Uniform Delay, d1		17.6			24.0			24.9		21.0	20.7	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		3.9			35.3			3.8		4.9	0.6	
Delay (s)		21.5			59.3			28.7		25.9	21.3	
Level of Service		C			E			C		C	C	
Approach Delay (s)		21.5			59.3			28.7			21.9	
Approach LOS		C			E			C			C	

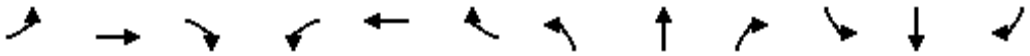
Intersection Summary			
HCM Average Control Delay	34.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	354	39	62	293	96	23	706	126	59	892	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3467			3509	1514	1770	3446			3496	
Flt Permitted		0.94			0.81	1.00	0.23	1.00			0.86	
Satd. Flow (perm)		3252			2861	1514	435	3446			3008	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	361	40	63	299	98	23	720	129	60	910	54
RTOR Reduction (vph)	0	9	0	0	0	72	0	14	0	0	4	0
Lane Group Flow (vph)	0	407	0	0	362	26	23	835	0	0	1020	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		18.1			18.1	18.1	43.2	43.2			43.2	
Effective Green, g (s)		18.1			18.1	18.1	43.2	43.2			43.2	
Actuated g/C Ratio		0.26			0.26	0.26	0.62	0.62			0.62	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		849			747	395	271	2148			1875	
v/s Ratio Prot								0.24				
v/s Ratio Perm		0.13			c0.13	0.02	0.05				c0.34	
v/c Ratio		0.48			0.48	0.06	0.08	0.39			0.54	
Uniform Delay, d1		21.6			21.7	19.2	5.2	6.5			7.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.4			0.5	0.1	0.1	0.1			0.3	
Delay (s)		22.1			22.2	19.3	5.3	6.6			7.8	
Level of Service		C			C	B	A	A			A	
Approach Delay (s)		22.1			21.5			6.6			7.8	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

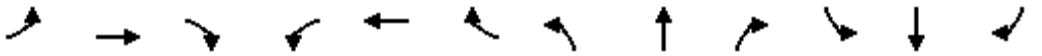


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	173	3	115	2	355	152	212	550	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.95			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1769			1698			3340			3486	
Flt Permitted		0.91			0.81			0.95			0.63	
Satd. Flow (perm)		1642			1419			3185			2220	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	192	3	128	2	394	169	236	611	6
RTOR Reduction (vph)	0	1	0	0	17	0	0	43	0	0	1	0
Lane Group Flow (vph)	0	9	0	0	306	0	0	522	0	0	852	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		24.7			24.7			42.7			48.4	
Effective Green, g (s)		24.7			24.7			42.7			48.4	
Actuated g/C Ratio		0.30			0.30			0.53			0.60	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		500			432			1677			1351	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.22			0.16			c0.36	
v/c Ratio		0.02			0.71			0.31			5.76dl	
Uniform Delay, d1		19.7			25.0			10.9			10.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			5.2			0.1			1.0	
Delay (s)		19.7			30.2			11.0			11.5	
Level of Service		B			C			B			B	
Approach Delay (s)		19.7			30.2			11.0			11.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

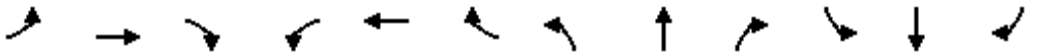
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	780	156	97	721	0	68	0	79	391	69	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1710	1559
Flt Permitted		1.00		0.20	1.00			0.74		0.70	0.73	1.00
Satd. Flow (perm)		3436		378	3539			1276		1240	1292	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	876	175	109	810	0	76	0	89	439	78	151
RTOR Reduction (vph)	0	0	0	0	0	0	0	34	0	0	0	40
Lane Group Flow (vph)	0	1051	0	109	810	0	0	131	0	255	262	111
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.5		27.5	27.5			17.1		17.1	17.1	17.1
Effective Green, g (s)		27.5		27.5	27.5			17.1		17.1	17.1	17.1
Actuated g/C Ratio		0.50		0.50	0.50			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1731		190	1782			400		388	405	488
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm				0.29				0.10		c0.21	0.20	0.07
v/c Ratio		0.61		0.57	0.45			0.33		0.66	0.65	0.23
Uniform Delay, d1		9.7		9.5	8.7			14.3		16.2	16.1	13.9
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4		2.6	0.1			0.2		3.1	2.7	0.1
Delay (s)		10.1		12.0	8.8			14.5		19.3	18.8	14.0
Level of Service		B		B	A			B		B	B	B
Approach Delay (s)		10.1			9.2			14.5			17.9	
Approach LOS		B			A			B			B	

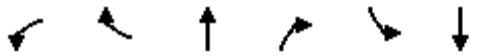
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	651	131	96	901	70	249	357	141	116	200	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1770	3428		1770	3470		1770	1863	1524	1770	1863	1546
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)	1770	3428		1770	3470		1770	1863	1524	1770	1863	1546
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	78	715	144	105	990	77	274	392	155	127	220	88
RTOR Reduction (vph)	0	16	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	78	843	0	105	1062	0	274	392	111	127	220	43
Confl. Peds. (#/hr)			7			40			24			11
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.8	30.0		7.8	31.0		16.5	26.6	26.6	8.8	18.9	18.9
Effective Green, g (s)	6.8	30.0		7.8	31.0		16.5	26.6	26.6	8.8	18.9	18.9
Actuated g/C Ratio	0.08	0.33		0.09	0.34		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1140		153	1193		324	549	449	173	390	324
v/s Ratio Prot	0.04	0.25		c0.06	c0.31		c0.15	c0.21		0.07	0.12	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.59	0.74		0.69	0.89		0.85	0.71	0.25	0.73	0.56	0.13
Uniform Delay, d1	40.3	26.6		40.0	28.0		35.6	28.4	24.2	39.6	32.0	29.0
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	4.2	2.6		9.7	8.4		17.3	4.4	0.3	13.0	1.9	0.2
Delay (s)	44.5	29.2		49.7	36.4		53.0	32.8	24.5	52.5	33.8	29.2
Level of Service	D	C		D	D		D	C	C	D	C	C
Approach Delay (s)		30.5			37.6			38.0			38.3	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

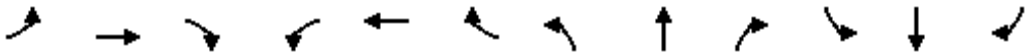
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	56	693	14	13	466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1641		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1641		3527			3301
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	30	62	762	15	14	512
RTOR Reduction (vph)	44	0	2	0	0	0
Lane Group Flow (vph)	48	0	775	0	0	526
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2022
v/s Ratio Prot	c0.03		c0.22			
v/s Ratio Perm						0.16
v/c Ratio	0.10		0.36			0.26
Uniform Delay, d1	20.9		7.7			7.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.5			0.3
Delay (s)	21.3		8.2			7.5
Level of Service	C		A			A
Approach Delay (s)	21.3		8.2			7.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

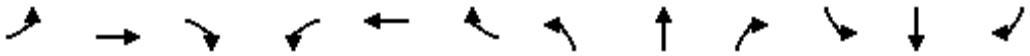
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	4	49	23	2	54	33	657	32	23	463	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	1	4	55	26	2	61	37	738	36	26	520	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1089	1432	272	1209	1417	397	530			779		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1089	1432	272	1209	1417	397	530			779		
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 %	99	96	92	78	98	90	96			97		
cM capacity (veh/h)	141	123	719	116	126	597	1029			830		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	61	89	406	405	286	265
Volume Left	1	26	37	0	26	0
Volume Right	55	61	0	36	0	4
cSH	501	260	1029	1700	830	1700
Volume to Capacity	0.12	0.34	0.04	0.24	0.03	0.16
Queue Length 95th (ft)	10	36	3	0	2	0
Control Delay (s)	13.2	25.9	1.1	0.0	1.2	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	13.2	25.9	0.6		0.6	
Approach LOS	B	D				

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	55.7%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	469	95	71	394	95	81	502	107	55	262	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1810			1801			3411		1770	3484	
Flt Permitted		0.93			0.86			0.86		0.27	1.00	
Satd. Flow (perm)		1697			1562			2959		509	3484	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	479	97	72	402	97	83	512	109	56	267	23
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	613	0	0	564	0	0	689	0	56	283	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		882			812			1184		204	1394	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.36			0.36			c0.23		0.11		
v/c Ratio		0.70			0.69			0.58		0.27	0.20	
Uniform Delay, d1		18.0			18.0			23.5		20.2	19.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.5			4.9			2.1		3.3	0.3	
Delay (s)		22.6			22.9			25.6		23.5	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		22.6			22.9			25.6			20.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	229	26	75	402	158	44	976	80	33	504	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3458			3512	1514	1770	3492			3481	
Flt Permitted		0.88			0.84	1.00	0.39	1.00			0.86	
Satd. Flow (perm)		3043			2987	1514	728	3492			2995	
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)	32	244	28	80	428	168	47	1038	85	35	536	49
RTOR Reduction (vph)	0	8	0	0	0	64	0	6	0	0	7	0
Lane Group Flow (vph)	0	296	0	0	508	104	47	1117	0	0	613	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		21.6			21.6	21.6	41.0	41.0			41.0	
Effective Green, g (s)		21.6			21.6	21.6	41.0	41.0			41.0	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		931			914	463	423	2028			1739	
v/s Ratio Prot								c0.32				
v/s Ratio Perm		0.10			c0.17	0.07	0.06				0.20	
v/c Ratio		0.32			0.56	0.22	0.11	0.55			0.35	
Uniform Delay, d1		18.8			20.5	18.3	6.6	9.1			7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.7	0.2	0.1	0.3			0.1	
Delay (s)		19.0			21.2	18.5	6.8	9.4			7.9	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		19.0			20.5			9.3			7.9	
Approach LOS		B			C			A			A	

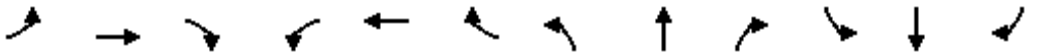
Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	133	1	104	1	685	178	153	296	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1661			1692			3407			3474	
Flt Permitted		0.96			0.82			0.95			0.57	
Satd. Flow (perm)		1613			1432			3252			1996	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	139	1	108	1	714	185	159	308	5
RTOR Reduction (vph)	0	3	0	0	20	0	0	24	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	228	0	0	876	0	0	471	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		15.3			15.3			23.1			28.4	
Effective Green, g (s)		15.3			15.3			23.1			28.4	
Actuated g/C Ratio		0.30			0.30			0.45			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		477			424			1453			1134	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.16			c0.27			0.22	
v/c Ratio		0.01			0.54			0.60			3.24dl	
Uniform Delay, d1		12.8			15.2			10.8			6.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.3			0.7			0.2	
Delay (s)		12.8			16.5			11.5			7.1	
Level of Service		B			B			B			A	
Approach Delay (s)		12.8			16.5			11.5			7.1	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	51.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

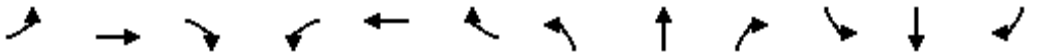
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



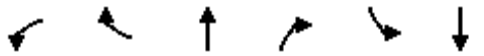
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	588	83	66	457	0	57	0	61	430	129	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3463		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.31	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3463		574	3539			1282		1189	1342	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	661	93	74	513	0	64	0	69	483	145	306
RTOR Reduction (vph)	0	0	0	0	0	0	0	42	0	0	0	141
Lane Group Flow (vph)	0	754	0	74	513	0	0	91	0	309	319	165
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		19.4		19.4	19.4			18.4		18.4	18.4	18.4
Effective Green, g (s)		19.4		19.4	19.4			18.4		18.4	18.4	18.4
Actuated g/C Ratio		0.41		0.41	0.41			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1405		233	1436			493		458	517	601
v/s Ratio Prot		c0.22			0.14							
v/s Ratio Perm				0.13				0.07		c0.26	0.24	0.11
v/c Ratio		0.54		0.32	0.36			0.18		0.67	0.62	0.27
Uniform Delay, d1		10.8		9.7	9.9			9.7		12.2	11.9	10.1
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		3.1	1.5	0.1
Delay (s)		11.0		10.0	9.9			9.8		15.3	13.4	10.2
Level of Service		B		A	A			A		B	B	B
Approach Delay (s)		11.0			9.9			9.8			13.0	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.4%	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)	101	717	185	116	559	56	175	172	138	82	272	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1499
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)	1770	3385		1770	3461		1770	1863	1520	1770	1863	1499
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	104	739	191	120	576	58	180	177	142	85	280	76
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	87	0	0	29
Lane Group Flow (vph)	104	907	0	120	626	0	180	177	55	85	280	47
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.1	24.9		7.8	25.6		12.5	25.9	25.6	6.1	19.5	24.9
Effective Green, g (s)	7.1	24.9		7.8	25.6		12.5	25.9	25.6	6.1	19.5	24.9
Actuated g/C Ratio	0.09	0.30		0.10	0.31		0.15	0.32	0.31	0.07	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	154	1032		169	1084		271	591	476	132	445	457
v/s Ratio Prot	0.06	c0.27		c0.07	0.18		c0.10	0.10		0.05	c0.15	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.68	0.88		0.71	0.58		0.66	0.30	0.12	0.64	0.63	0.10
Uniform Delay, d1	36.2	27.0		35.9	23.5		32.6	21.1	20.0	36.7	27.9	20.4
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	8.8	8.7		11.1	0.8		4.7	0.3	0.1	7.8	2.8	0.1
Delay (s)	45.0	35.6		46.9	24.3		37.3	21.3	20.1	44.6	30.6	20.5
Level of Service	D	D		D	C		D	C	C	D	C	C
Approach Delay (s)		36.6			27.9			26.7			31.6	
Approach LOS		D			C			C			C	

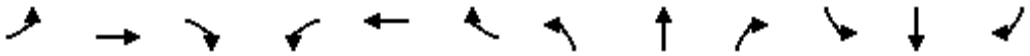
Intersection Summary			
HCM Average Control Delay	31.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	17.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	43	522	35	42	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1660		3500			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1660		3500			3144
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	33	46	555	37	45	670
RTOR Reduction (vph)	33	0	6	0	0	0
Lane Group Flow (vph)	46	0	586	0	0	715
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2144			1926
v/s Ratio Prot	c0.03		0.17			
v/s Ratio Perm						c0.23
v/c Ratio	0.10		0.27			0.37
Uniform Delay, d1	20.9		7.2			7.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.6
Delay (s)	21.3		7.5			8.3
Level of Service	C		A			A
Approach Delay (s)	21.3		7.5			8.3
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

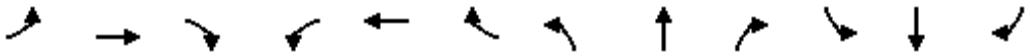
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	55	20	0	44	35	512	54	52	603	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	57	21	0	46	36	533	56	54	628	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1134	1412	327	1126	1386	305	638			595		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1134	1412	327	1126	1386	305	638			595		
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	97	91	84	100	93	96			94		
cM capacity (veh/h)	134	123	663	131	128	685	938			974		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	60	67	303	323	368	319
Volume Left	0	21	36	0	54	0
Volume Right	57	46	0	56	0	5
cSH	541	295	938	1700	974	1700
Volume to Capacity	0.11	0.23	0.04	0.19	0.06	0.19
Queue Length 95th (ft)	9	21	3	0	4	0
Control Delay (s)	12.5	20.7	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.5	20.7	0.7		1.0	
Approach LOS	B	C				

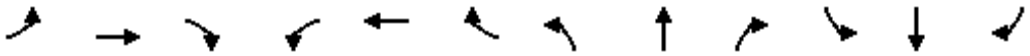
Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	56.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	470	116	114	549	75	120	517	88	71	423	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1803			1818			3426		1770	3483	
Flt Permitted		0.95			0.78			0.73		0.25	1.00	
Satd. Flow (perm)		1724			1426			2517		473	3483	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	27	480	118	116	560	77	122	528	90	72	432	38
RTOR Reduction (vph)	0	8	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	617	0	0	749	0	0	729	0	72	463	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		896			742			1007		189	1393	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.36			c0.52			c0.29		0.15		
v/c Ratio		0.69			1.01			0.72		0.38	0.33	
Uniform Delay, d1		17.9			24.0			25.3		21.2	20.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.3			35.3			4.5		5.7	0.6	
Delay (s)		22.3			59.3			29.9		27.0	21.4	
Level of Service		C			E			C		C	C	
Approach Delay (s)		22.3			59.3			29.9			22.1	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	34.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	365	40	64	261	99	24	727	130	61	919	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3467			3505	1513	1770	3445			3496	
Flt Permitted		0.94			0.78	1.00	0.22	1.00			0.85	
Satd. Flow (perm)		3258			2751	1513	418	3445			2987	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	372	41	65	266	101	24	742	133	62	938	56
RTOR Reduction (vph)	0	9	0	0	0	75	0	13	0	0	4	0
Lane Group Flow (vph)	0	419	0	0	331	26	24	862	0	0	1052	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		18.2			18.2	18.2	45.0	45.0			45.0	
Effective Green, g (s)		18.2			18.2	18.2	45.0	45.0			45.0	
Actuated g/C Ratio		0.26			0.26	0.26	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		833			703	387	264	2177			1888	
v/s Ratio Prot								0.25				
v/s Ratio Perm		c0.13			0.12	0.02	0.06				c0.35	
v/c Ratio		0.50			0.47	0.07	0.09	0.40			0.56	
Uniform Delay, d1		22.6			22.4	20.1	5.1	6.4			7.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.1	0.1			0.4	
Delay (s)		23.1			22.9	20.1	5.3	6.5			7.8	
Level of Service		C			C	C	A	A			A	
Approach Delay (s)		23.1			22.3			6.5			7.8	
Approach LOS		C			C			A			A	

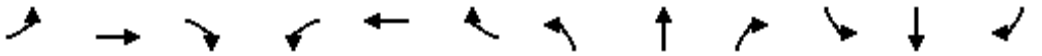
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	139	3	120	2	371	159	222	575	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1769			1686			3339			3486	
Flt Permitted		0.91			0.83			0.95			0.62	
Satd. Flow (perm)		1646			1434			3184			2201	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	154	3	133	2	412	177	247	639	6
RTOR Reduction (vph)	0	1	0	0	23	0	0	41	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	267	0	0	550	0	0	892	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		24.2			24.2			46.9			52.6	
Effective Green, g (s)		24.2			24.2			46.9			52.6	
Actuated g/C Ratio		0.29			0.29			0.55			0.62	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		470			409			1761			1391	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.19			0.17			c0.38	
v/c Ratio		0.02			0.65			0.31			6.68dl	
Uniform Delay, d1		21.8			26.6			10.2			10.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			3.7			0.1			1.0	
Delay (s)		21.8			30.3			10.3			11.2	
Level of Service		C			C			B			B	
Approach Delay (s)		21.8			30.3			10.3			11.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	14.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	84.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

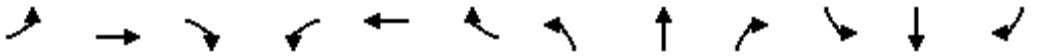
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	780	156	97	721	0	68	0	79	391	69	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1710	795
Flt Permitted		1.00		0.20	1.00			0.75		0.70	0.73	1.00
Satd. Flow (perm)		3436		376	3539			1282		1239	1292	795
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	876	175	109	810	0	76	0	89	439	78	163
RTOR Reduction (vph)	0	0	0	0	0	0	0	34	0	0	0	40
Lane Group Flow (vph)	0	1051	0	109	810	0	0	131	0	255	262	123
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	100%
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.5		27.5	27.5			17.3		17.3	17.3	17.3
Effective Green, g (s)		27.5		27.5	27.5			17.3		17.3	17.3	17.3
Actuated g/C Ratio		0.50		0.50	0.50			0.32		0.32	0.32	0.32
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1724		189	1776			405		391	408	251
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm				0.29				0.10		c0.21	0.20	0.16
v/c Ratio		0.61		0.58	0.46			0.32		0.65	0.64	0.49
Uniform Delay, d1		9.8		9.6	8.8			14.3		16.2	16.1	15.2
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4		2.6	0.1			0.2		3.0	2.6	0.6
Delay (s)		10.2		12.2	8.9			14.5		19.1	18.7	15.7
Level of Service		B		B	A			B		B	B	B
Approach Delay (s)		10.2			9.3			14.5			18.1	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



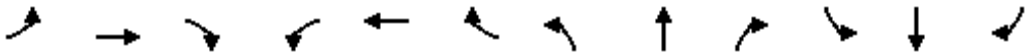
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	651	133	107	901	70	249	357	141	116	200	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1752	3394		1752	3436		1752	1845	1509	1752	1845	1531
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)	1752	3394		1752	3436		1752	1845	1509	1752	1845	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	78	715	146	118	990	77	274	392	155	127	220	88
RTOR Reduction (vph)	0	16	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	78	845	0	118	1062	0	274	392	111	127	220	43
Confl. Peds. (#/hr)			7			40			24			11
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.9	30.1		8.1	31.3		16.5	26.6	26.6	8.8	18.9	18.9
Effective Green, g (s)	6.9	30.1		8.1	31.3		16.5	26.6	26.6	8.8	18.9	18.9
Actuated g/C Ratio	0.08	0.33		0.09	0.35		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1128		157	1187		319	542	443	170	385	319
v/s Ratio Prot	0.04	0.25		c0.07	c0.31		c0.16	c0.21		0.07	0.12	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.59	0.75		0.75	0.89		0.86	0.72	0.25	0.75	0.57	0.13
Uniform Delay, d1	40.5	26.9		40.3	28.1		35.9	28.7	24.4	39.8	32.2	29.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	2.8		16.3	8.9		19.2	4.7	0.3	14.4	2.0	0.2
Delay (s)	44.7	29.7		56.6	37.0		55.2	33.4	24.7	54.2	34.3	29.4
Level of Service	D	C		E	D		E	C	C	D	C	C
Approach Delay (s)		30.9			39.0			39.0			39.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	56	693	14	13	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1641		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1641		3527			3302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	30	62	762	15	14	526
RTOR Reduction (vph)	44	0	2	0	0	0
Lane Group Flow (vph)	48	0	775	0	0	540
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2022
v/s Ratio Prot	c0.03		c0.22			
v/s Ratio Perm						0.16
v/c Ratio	0.10		0.36			0.27
Uniform Delay, d1	20.9		7.7			7.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.5			0.3
Delay (s)	21.3		8.2			7.5
Level of Service	C		A			A
Approach Delay (s)	21.3		8.2			7.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

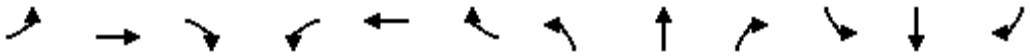
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	49	23	2	54	33	657	36	36	463	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	55	26	2	61	37	738	40	40	520	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1118	1466	272	1241	1448	399	530			784		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1118	1466	272	1241	1448	399	530			784		
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 %	97	96	92	76	98	90	96			95		
cM capacity (veh/h)	132	115	719	109	118	595	1029			827		

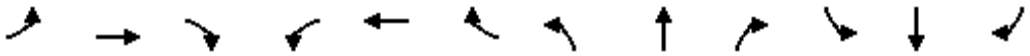
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	64	89	406	410	301	265
Volume Left	4	26	37	0	40	0
Volume Right	55	61	0	40	0	4
cSH	428	247	1029	1700	827	1700
Volume to Capacity	0.15	0.36	0.04	0.24	0.05	0.16
Queue Length 95th (ft)	13	39	3	0	4	0
Control Delay (s)	14.9	27.5	1.1	0.0	1.8	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	14.9	27.5	0.6		0.9	
Approach LOS	B	D				

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	471	95	71	394	95	81	502	107	55	262	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1793			1784			3378		1752	3450	
Flt Permitted		0.93			0.86			0.86		0.27	1.00	
Satd. Flow (perm)		1681			1546			2930		504	3450	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	481	97	72	402	97	83	512	109	56	267	23
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	615	0	0	564	0	0	689	0	56	283	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		874			804			1172		202	1380	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.37			0.36			c0.24		0.11		
v/c Ratio		0.70			0.70			0.59		0.28	0.21	
Uniform Delay, d1		18.2			18.1			23.5		20.2	19.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.7			5.1			2.2		3.4	0.3	
Delay (s)		22.9			23.2			25.7		23.6	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		22.9			23.2			25.7			20.5	
Approach LOS		C			C			C			C	

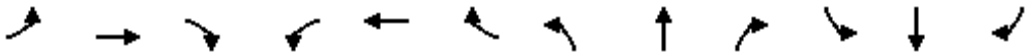
Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	231	26	75	402	158	44	976	80	33	504	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3425			3477	1499	1752	3458			3447	
Flt Permitted		0.88			0.84	1.00	0.39	1.00			0.86	
Satd. Flow (perm)		3015			2956	1499	721	3458			2965	
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)	32	246	28	80	428	168	47	1038	85	35	536	49
RTOR Reduction (vph)	0	8	0	0	0	64	0	6	0	0	7	0
Lane Group Flow (vph)	0	298	0	0	508	104	47	1117	0	0	613	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		21.7			21.7	21.7	41.2	41.2			41.2	
Effective Green, g (s)		21.7			21.7	21.7	41.2	41.2			41.2	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		923			905	459	419	2009			1723	
v/s Ratio Prot								c0.32				
v/s Ratio Perm		0.10			c0.17	0.07	0.07				0.21	
v/c Ratio		0.32			0.56	0.23	0.11	0.56			0.36	
Uniform Delay, d1		18.9			20.6	18.3	6.7	9.2			7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.8	0.3	0.1	0.3			0.1	
Delay (s)		19.1			21.4	18.6	6.8	9.5			8.0	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		19.1			20.7			9.4			8.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

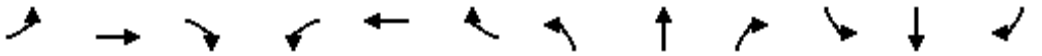
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	133	1	104	1	685	180	153	296	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1568			1598			3215			3281	
Flt Permitted		0.97			0.83			0.95			0.56	
Satd. Flow (perm)		1527			1356			3070			1868	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	139	1	108	1	714	188	159	308	5
RTOR Reduction (vph)	0	3	0	0	20	0	0	25	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	228	0	0	878	0	0	471	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		16.8			16.8			24.5			29.8	
Effective Green, g (s)		16.8			16.8			24.5			29.8	
Actuated g/C Ratio		0.31			0.31			0.45			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		470			417			1378			1053	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.17			c0.29			0.23	
v/c Ratio		0.01			0.55			0.64			3.53dl	
Uniform Delay, d1		13.1			15.7			11.6			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.5			1.0			0.3	
Delay (s)		13.1			17.2			12.6			7.8	
Level of Service		B			B			B			A	
Approach Delay (s)		13.1			17.2			12.6			7.8	
Approach LOS		B			B			B			A	

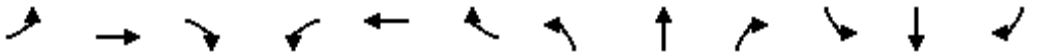
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	599	83	66	457	0	57	0	61	430	129	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3464		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.30	1.00			0.74		0.67	0.76	1.00
Satd. Flow (perm)		3464		563	3539			1282		1189	1342	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	673	93	74	513	0	64	0	69	483	145	306
RTOR Reduction (vph)	0	0	0	0	0	0	0	43	0	0	0	141
Lane Group Flow (vph)	0	766	0	74	513	0	0	90	0	309	319	165
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		19.8		19.8	19.8			18.5		18.5	18.5	18.5
Effective Green, g (s)		19.8		19.8	19.8			18.5		18.5	18.5	18.5
Actuated g/C Ratio		0.41		0.41	0.41			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1420		231	1451			491		455	514	598
v/s Ratio Prot		c0.22			0.14							
v/s Ratio Perm				0.13				0.07		c0.26	0.24	0.11
v/c Ratio		0.54		0.32	0.35			0.18		0.68	0.62	0.28
Uniform Delay, d1		10.8		9.7	9.8			9.9		12.4	12.1	10.3
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		3.2	1.7	0.1
Delay (s)		11.0		10.0	9.9			10.0		15.6	13.7	10.4
Level of Service		B		A	A			A		B	B	B
Approach Delay (s)		11.0			9.9			10.0			13.2	
Approach LOS		B			A			A			B	

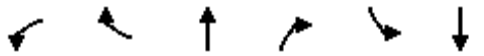
Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	48.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	717	185	116	559	56	177	172	149	82	272	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1752	3352		1752	3427		1752	1845	1505	1752	1845	1485
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)	1752	3352		1752	3427		1752	1845	1505	1752	1845	1485
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	104	739	191	120	576	58	182	177	154	85	280	76
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	93	0	0	29
Lane Group Flow (vph)	104	907	0	120	626	0	182	177	61	85	280	47
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.2	25.1		7.8	25.7		12.7	26.1	25.7	6.2	19.6	25.1
Effective Green, g (s)	7.2	25.1		7.8	25.7		12.7	26.1	25.7	6.2	19.6	25.1
Actuated g/C Ratio	0.09	0.31		0.09	0.31		0.15	0.32	0.31	0.08	0.24	0.31
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	153	1024		166	1071		271	586	471	132	440	453
v/s Ratio Prot	0.06	c0.27		c0.07	0.18		c0.10	0.10		0.05	c0.15	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.68	0.89		0.72	0.58		0.67	0.30	0.13	0.64	0.64	0.10
Uniform Delay, d1	36.4	27.2		36.1	23.8		32.8	21.2	20.2	36.9	28.1	20.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.1	9.3		12.4	0.8		5.1	0.3	0.1	7.8	3.0	0.1
Delay (s)	45.4	36.5		48.5	24.6		37.9	21.5	20.4	44.7	31.1	20.6
Level of Service	D	D		D	C		D	C	C	D	C	C
Approach Delay (s)		37.4			28.4			26.9			31.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	17.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	43	535	35	42	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1660		3501			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1660		3501			3139
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	33	46	569	37	45	670
RTOR Reduction (vph)	33	0	6	0	0	0
Lane Group Flow (vph)	46	0	600	0	0	715
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2144			1923
v/s Ratio Prot	c0.03		0.17			
v/s Ratio Perm						c0.23
v/c Ratio	0.10		0.28			0.37
Uniform Delay, d1	20.9		7.2			7.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.6
Delay (s)	21.3		7.6			8.3
Level of Service	C		A			A
Approach Delay (s)	21.3		7.6			8.3
Approach LOS	C		A			A

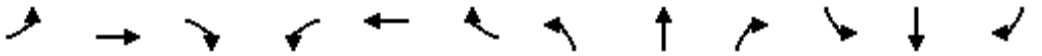
Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	55	24	0	57	35	512	54	52	603	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	57	25	0	59	36	533	56	54	628	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1148	1412	327	1126	1386	305	638			595		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1412	327	1126	1386	305	638			595		
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	97	91	81	100	91	96			94		
cM capacity (veh/h)	129	123	663	131	128	685	938			974		

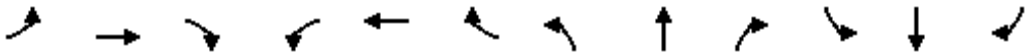
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	60	84	303	323	368	319
Volume Left	0	25	36	0	54	0
Volume Right	57	59	0	56	0	5
cSH	541	304	938	1700	974	1700
Volume to Capacity	0.11	0.28	0.04	0.19	0.06	0.19
Queue Length 95th (ft)	9	28	3	0	4	0
Control Delay (s)	12.5	21.3	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.5	21.3	0.7		1.0	
Approach LOS	B	C				

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	57.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	470	116	114	551	75	120	517	88	71	423	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1786			1801			3393		1752	3449	
Flt Permitted		0.95			0.78			0.73		0.25	1.00	
Satd. Flow (perm)		1707			1413			2493		469	3449	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	27	480	118	116	562	77	122	528	90	72	432	38
RTOR Reduction (vph)	0	8	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	617	0	0	751	0	0	729	0	72	463	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		888			735			997		188	1380	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.36			c0.53			c0.29		0.15		
v/c Ratio		0.69			1.02			0.73		0.38	0.34	
Uniform Delay, d1		18.0			24.0			25.4		21.3	20.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.5			38.7			4.7		5.8	0.7	
Delay (s)		22.5			62.7			30.2		27.1	21.5	
Level of Service		C			E			C		C	C	
Approach Delay (s)		22.5			62.7			30.2			22.2	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM Average Control Delay	36.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	365	40	64	263	99	24	727	130	61	919	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3434			3471	1498	1752	3412			3462	
Flt Permitted		0.94			0.78	1.00	0.22	1.00			0.85	
Satd. Flow (perm)		3226			2728	1498	414	3412			2957	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	372	41	65	268	101	24	742	133	62	938	56
RTOR Reduction (vph)	0	9	0	0	0	75	0	13	0	0	4	0
Lane Group Flow (vph)	0	419	0	0	333	26	24	862	0	0	1052	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		18.3			18.3	18.3	45.1	45.1			45.1	
Effective Green, g (s)		18.3			18.3	18.3	45.1	45.1			45.1	
Actuated g/C Ratio		0.26			0.26	0.26	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		827			699	384	262	2155			1868	
v/s Ratio Prot								0.25				
v/s Ratio Perm		c0.13			0.12	0.02	0.06				c0.36	
v/c Ratio		0.51			0.48	0.07	0.09	0.40			0.56	
Uniform Delay, d1		22.7			22.5	20.1	5.1	6.5			7.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.2	0.1			0.4	
Delay (s)		23.2			23.0	20.2	5.3	6.6			7.9	
Level of Service		C			C	C	A	A			A	
Approach Delay (s)		23.2			22.3			6.6			7.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

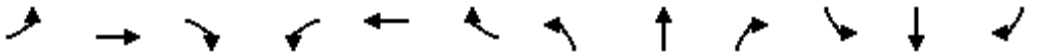
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	141	3	120	2	371	159	222	575	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1671			1592			3151			3293	
Flt Permitted		0.91			0.83			0.95			0.63	
Satd. Flow (perm)		1550			1352			3006			2089	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	157	3	133	2	412	177	247	639	6
RTOR Reduction (vph)	0	1	0	0	23	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	270	0	0	554	0	0	892	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		24.7			24.7			55.8			61.7	
Effective Green, g (s)		24.7			24.7			55.8			61.7	
Actuated g/C Ratio		0.26			0.26			0.59			0.65	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		406			354			1777			1390	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.20			0.18			c0.41	
v/c Ratio		0.02			0.76			0.31			7.06dl	
Uniform Delay, d1		25.9			32.2			9.7			9.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			9.4			0.1			1.0	
Delay (s)		25.9			41.5			9.8			10.8	
Level of Service		C			D			A			B	
Approach Delay (s)		25.9			41.5			9.8			10.8	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

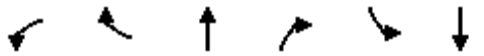
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	780	156	97	721	0	68	0	79	391	69	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1710	1559
Flt Permitted		1.00		0.20	1.00			0.74		0.70	0.73	1.00
Satd. Flow (perm)		3436		378	3539			1276		1240	1292	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	876	175	109	810	0	76	0	89	439	78	153
RTOR Reduction (vph)	0	0	0	0	0	0	0	34	0	0	0	40
Lane Group Flow (vph)	0	1051	0	109	810	0	0	131	0	255	262	113
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.5		27.5	27.5			17.1		17.1	17.1	17.1
Effective Green, g (s)		27.5		27.5	27.5			17.1		17.1	17.1	17.1
Actuated g/C Ratio		0.50		0.50	0.50			0.31		0.31	0.31	0.31
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1731		190	1782			400		388	405	488
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm				0.29				0.10		c0.21	0.20	0.07
v/c Ratio		0.61		0.57	0.45			0.33		0.66	0.65	0.23
Uniform Delay, d1		9.7		9.5	8.7			14.3		16.2	16.1	13.9
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4		2.6	0.1			0.2		3.1	2.7	0.1
Delay (s)		10.1		12.0	8.8			14.5		19.3	18.8	14.0
Level of Service		B		B	A			B		B	B	B
Approach Delay (s)		10.1			9.2			14.5			17.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.4%	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)	71	651	142	98	901	70	249	357	141	116	200	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1752	3387		1752	3436		1752	1845	1509	1752	1845	1531
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)	1752	3387		1752	3436		1752	1845	1509	1752	1845	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	78	715	156	108	990	77	274	392	155	127	220	88
RTOR Reduction (vph)	0	18	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	78	853	0	108	1062	0	274	392	111	127	220	43
Confl. Peds. (#/hr)			7			40			24			11
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.9	30.3		7.9	31.3		16.5	26.6	26.6	8.8	18.9	18.9
Effective Green, g (s)	6.9	30.3		7.9	31.3		16.5	26.6	26.6	8.8	18.9	18.9
Actuated g/C Ratio	0.08	0.33		0.09	0.35		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1133		153	1187		319	542	443	170	385	319
v/s Ratio Prot	0.04	0.25		c0.06	c0.31		c0.16	c0.21		0.07	0.12	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.59	0.75		0.71	0.89		0.86	0.72	0.25	0.75	0.57	0.13
Uniform Delay, d1	40.5	26.8		40.2	28.1		35.9	28.7	24.4	39.8	32.2	29.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	2.9		11.4	8.9		19.2	4.7	0.3	14.4	2.0	0.2
Delay (s)	44.7	29.7		51.7	37.0		55.2	33.4	24.7	54.2	34.3	29.4
Level of Service	D	C		D	D		E	C	C	D	C	C
Approach Delay (s)		30.9			38.4			39.0			39.1	
Approach LOS		C			D			D			D	

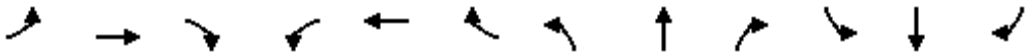
Intersection Summary			
HCM Average Control Delay	36.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	56	693	14	13	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1641		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1641		3527			3302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	30	62	762	15	14	526
RTOR Reduction (vph)	44	0	2	0	0	0
Lane Group Flow (vph)	48	0	775	0	0	540
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2022
v/s Ratio Prot	c0.03		c0.22			
v/s Ratio Perm						0.16
v/c Ratio	0.10		0.36			0.27
Uniform Delay, d1	20.9		7.7			7.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.5			0.3
Delay (s)	21.3		8.2			7.5
Level of Service	C		A			A
Approach Delay (s)	21.3		8.2			7.5
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

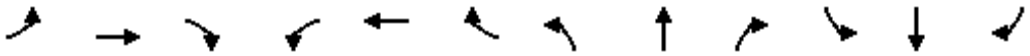
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	49	23	2	54	33	657	36	36	463	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	55	26	2	61	37	738	40	40	520	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1118	1466	272	1241	1448	399	530			784		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1118	1466	272	1241	1448	399	530			784		
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 %	97	96	92	76	98	90	96			95		
cM capacity (veh/h)	132	115	719	109	118	595	1029			827		

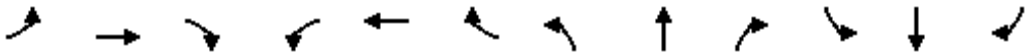
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	64	89	406	410	301	265
Volume Left	4	26	37	0	40	0
Volume Right	55	61	0	40	0	4
cSH	428	247	1029	1700	827	1700
Volume to Capacity	0.15	0.36	0.04	0.24	0.05	0.16
Queue Length 95th (ft)	13	39	3	0	4	0
Control Delay (s)	14.9	27.5	1.1	0.0	1.8	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	14.9	27.5	0.6		0.9	
Approach LOS	B	D				

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	56.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	480	95	71	394	95	81	502	107	55	262	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1793			1784			3378		1752	3450	
Flt Permitted		0.94			0.86			0.86		0.27	1.00	
Satd. Flow (perm)		1683			1542			2930		504	3450	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	490	97	72	402	97	83	512	109	56	267	23
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	624	0	0	564	0	0	689	0	56	283	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		875			802			1172		202	1380	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.37			0.37			c0.24		0.11		
v/c Ratio		0.71			0.70			0.59		0.28	0.21	
Uniform Delay, d1		18.3			18.2			23.5		20.2	19.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.9			5.1			2.2		3.4	0.3	
Delay (s)		23.2			23.3			25.7		23.6	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		23.2			23.3			25.7			20.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM Average Control Delay	23.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	120.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	240	26	75	402	158	44	976	80	33	504	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3427			3477	1499	1752	3458			3447	
Flt Permitted		0.88			0.84	1.00	0.39	1.00			0.86	
Satd. Flow (perm)		3022			2949	1499	721	3458			2965	
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)	32	255	28	80	428	168	47	1038	85	35	536	49
RTOR Reduction (vph)	0	8	0	0	0	64	0	6	0	0	7	0
Lane Group Flow (vph)	0	307	0	0	508	104	47	1117	0	0	613	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		21.7			21.7	21.7	41.3	41.3			41.3	
Effective Green, g (s)		21.7			21.7	21.7	41.3	41.3			41.3	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		924			901	458	419	2011			1725	
v/s Ratio Prot								c0.32				
v/s Ratio Perm		0.10			c0.17	0.07	0.07				0.21	
v/c Ratio		0.33			0.56	0.23	0.11	0.56			0.36	
Uniform Delay, d1		19.1			20.7	18.4	6.6	9.2			7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.8	0.3	0.1	0.3			0.1	
Delay (s)		19.3			21.5	18.6	6.8	9.5			8.0	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		19.3			20.8			9.4			8.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

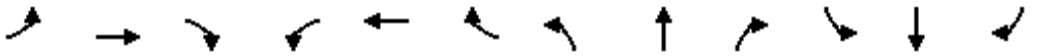
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	133	1	104	1	685	189	153	296	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1568			1598			3210			3281	
Flt Permitted		0.97			0.83			0.95			0.56	
Satd. Flow (perm)		1527			1356			3065			1862	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	139	1	108	1	714	197	159	308	5
RTOR Reduction (vph)	0	3	0	0	20	0	0	26	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	228	0	0	886	0	0	471	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		16.9			16.9			24.8			30.1	
Effective Green, g (s)		16.9			16.9			24.8			30.1	
Actuated g/C Ratio		0.31			0.31			0.45			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		469			417			1382			1053	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.17			c0.29			0.23	
v/c Ratio		0.01			0.55			0.64			3.53dl	
Uniform Delay, d1		13.2			15.9			11.7			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.5			1.0			0.3	
Delay (s)		13.2			17.3			12.7			7.8	
Level of Service		B			B			B			A	
Approach Delay (s)		13.2			17.3			12.7			7.8	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	590	83	66	457	0	57	0	61	430	129	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3463		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.31	1.00			0.74		0.67	0.76	1.00
Satd. Flow (perm)		3463		574	3539			1282		1189	1342	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	663	93	74	513	0	64	0	69	483	145	306
RTOR Reduction (vph)	0	0	0	0	0	0	0	43	0	0	0	141
Lane Group Flow (vph)	0	756	0	74	513	0	0	90	0	309	319	165
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		19.7		19.7	19.7			18.4		18.4	18.4	18.4
Effective Green, g (s)		19.7		19.7	19.7			18.4		18.4	18.4	18.4
Actuated g/C Ratio		0.41		0.41	0.41			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1418		235	1449			490		455	513	597
v/s Ratio Prot		c0.22			0.14							
v/s Ratio Perm				0.13				0.07		c0.26	0.24	0.11
v/c Ratio		0.53		0.31	0.35			0.18		0.68	0.62	0.28
Uniform Delay, d1		10.7		9.6	9.8			9.9		12.4	12.0	10.3
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		3.2	1.7	0.1
Delay (s)		10.9		9.9	9.9			9.9		15.6	13.7	10.3
Level of Service		B		A	A			A		B	B	B
Approach Delay (s)		10.9			9.9			9.9			13.2	
Approach LOS		B			A			A			B	

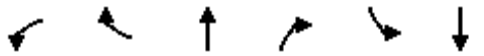
Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	717	185	116	559	56	186	172	140	82	272	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1752	3351		1752	3427		1752	1845	1504	1752	1845	1484
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)	1752	3351		1752	3427		1752	1845	1504	1752	1845	1484
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	104	739	191	120	576	58	192	177	144	85	280	76
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	87	0	0	29
Lane Group Flow (vph)	104	907	0	120	626	0	192	177	57	85	280	47
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.2	25.1		7.8	25.7		13.1	26.5	25.7	6.2	19.6	25.1
Effective Green, g (s)	7.2	25.1		7.8	25.7		13.1	26.5	25.7	6.2	19.6	25.1
Actuated g/C Ratio	0.09	0.30		0.09	0.31		0.16	0.32	0.31	0.08	0.24	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	153	1018		165	1066		278	592	468	132	438	451
v/s Ratio Prot	0.06	c0.27		c0.07	0.18		c0.11	0.10		0.05	c0.15	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.68	0.89		0.73	0.59		0.69	0.30	0.12	0.64	0.64	0.10
Uniform Delay, d1	36.6	27.4		36.4	24.0		32.8	21.1	20.4	37.1	28.3	20.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.1	9.9		12.7	0.8		5.9	0.3	0.1	7.8	3.1	0.1
Delay (s)	45.6	37.4		49.0	24.8		38.7	21.4	20.5	44.9	31.4	20.8
Level of Service	D	D		D	C		D	C	C	D	C	C
Approach Delay (s)		38.2			28.7			27.6			32.2	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	43	535	35	42	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1660		3501			3528
Flt Permitted	0.98		1.00			0.89
Satd. Flow (perm)	1660		3501			3139
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	33	46	569	37	45	670
RTOR Reduction (vph)	33	0	6	0	0	0
Lane Group Flow (vph)	46	0	600	0	0	715
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2144			1923
v/s Ratio Prot	c0.03		0.17			
v/s Ratio Perm						c0.23
v/c Ratio	0.10		0.28			0.37
Uniform Delay, d1	20.9		7.2			7.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.3			0.6
Delay (s)	21.3		7.6			8.3
Level of Service	C		A			A
Approach Delay (s)	21.3		7.6			8.3
Approach LOS	C		A			A

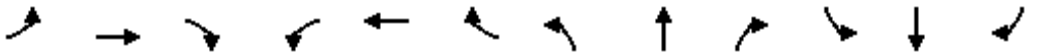
Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	55	24	0	57	35	512	54	52	603	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	57	25	0	59	36	533	56	54	628	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1148	1412	327	1126	1386	305	638			595		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1412	327	1126	1386	305	638			595		
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	97	91	81	100	91	96			94		
cM capacity (veh/h)	129	123	663	131	128	685	938			974		

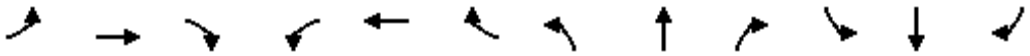
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	60	84	303	323	368	319
Volume Left	0	25	36	0	54	0
Volume Right	57	59	0	56	0	5
cSH	541	304	938	1700	974	1700
Volume to Capacity	0.11	0.28	0.04	0.19	0.06	0.19
Queue Length 95th (ft)	9	28	3	0	4	0
Control Delay (s)	12.5	21.3	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.5	21.3	0.7		1.0	
Approach LOS	B	C				

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	57.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	470	116	114	560	75	120	517	88	71	423	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1786			1801			3393		1752	3449	
Flt Permitted		0.95			0.78			0.73		0.25	1.00	
Satd. Flow (perm)		1706			1417			2493		469	3449	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	27	480	118	116	571	77	122	528	90	72	432	38
RTOR Reduction (vph)	0	8	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	617	0	0	760	0	0	729	0	72	463	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		887			737			997		188	1380	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.36			c0.54			c0.29		0.15		
v/c Ratio		0.70			1.03			0.73		0.38	0.34	
Uniform Delay, d1		18.0			24.0			25.4		21.3	20.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.5			41.5			4.7		5.8	0.7	
Delay (s)		22.5			65.5			30.2		27.1	21.5	
Level of Service		C			E			C		C	C	
Approach Delay (s)		22.5			65.5			30.2			22.2	
Approach LOS		C			E			C			C	

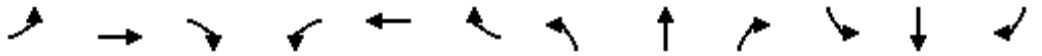
Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	365	40	64	272	99	24	727	130	61	919	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3434			3472	1498	1752	3412			3462	
Flt Permitted		0.94			0.78	1.00	0.22	1.00			0.85	
Satd. Flow (perm)		3225			2741	1498	413	3412			2957	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	372	41	65	278	101	24	742	133	62	938	56
RTOR Reduction (vph)	0	9	0	0	0	75	0	13	0	0	4	0
Lane Group Flow (vph)	0	419	0	0	343	26	24	862	0	0	1052	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		18.5			18.5	18.5	45.2	45.2			45.2	
Effective Green, g (s)		18.5			18.5	18.5	45.2	45.2			45.2	
Actuated g/C Ratio		0.26			0.26	0.26	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		832			707	387	260	2151			1864	
v/s Ratio Prot								0.25				
v/s Ratio Perm		c0.13			0.13	0.02	0.06				c0.36	
v/c Ratio		0.50			0.49	0.07	0.09	0.40			0.56	
Uniform Delay, d1		22.7			22.6	20.1	5.2	6.6			7.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.2	0.1			0.4	
Delay (s)		23.2			23.1	20.2	5.4	6.7			8.0	
Level of Service		C			C	C	A	A			A	
Approach Delay (s)		23.2			22.4			6.6			8.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		

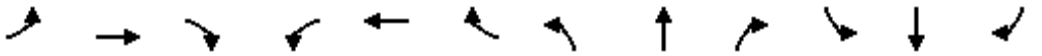
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	150	3	120	2	371	159	222	575	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1671			1595			3151			3293	
Flt Permitted		0.91			0.82			0.95			0.63	
Satd. Flow (perm)		1548			1349			3006			2089	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	167	3	133	2	412	177	247	639	6
RTOR Reduction (vph)	0	1	0	0	21	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	282	0	0	554	0	0	892	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		24.7			24.7			55.8			61.7	
Effective Green, g (s)		24.7			24.7			55.8			61.7	
Actuated g/C Ratio		0.26			0.26			0.59			0.65	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		405			353			1777			1390	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.21			0.18			c0.41	
v/c Ratio		0.02			0.80			0.31			7.06dl	
Uniform Delay, d1		25.9			32.5			9.7			9.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			11.8			0.1			1.0	
Delay (s)		25.9			44.4			9.8			10.8	
Level of Service		C			D			A			B	
Approach Delay (s)		25.9			44.4			9.8			10.8	
Approach LOS		C			D			A			B	

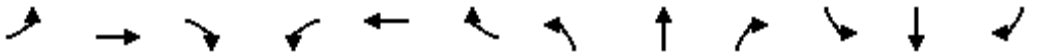
Intersection Summary			
HCM Average Control Delay	16.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



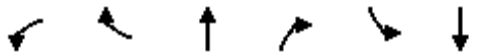
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	780	156	97	721	0	68	0	79	391	69	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1710	1559
Flt Permitted		1.00		0.20	1.00			0.75		0.70	0.73	1.00
Satd. Flow (perm)		3436		376	3539			1282		1239	1292	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	876	175	109	810	0	76	0	89	439	78	204
RTOR Reduction (vph)	0	0	0	0	0	0	0	34	0	0	0	40
Lane Group Flow (vph)	0	1051	0	109	810	0	0	131	0	255	262	164
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.5		27.5	27.5			17.3		17.3	17.3	17.3
Effective Green, g (s)		27.5		27.5	27.5			17.3		17.3	17.3	17.3
Actuated g/C Ratio		0.50		0.50	0.50			0.32		0.32	0.32	0.32
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1724		189	1776			405		391	408	492
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm				0.29				0.10		c0.21	0.20	0.11
v/c Ratio		0.61		0.58	0.46			0.32		0.65	0.64	0.33
Uniform Delay, d1		9.8		9.6	8.8			14.3		16.2	16.1	14.3
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4		2.6	0.1			0.2		3.0	2.6	0.1
Delay (s)		10.2		12.2	8.9			14.5		19.1	18.7	14.5
Level of Service		B		B	A			B		B	B	B
Approach Delay (s)		10.2			9.3			14.5			17.7	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.4%	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)	71	651	131	144	901	70	249	357	141	116	200	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1752	3395		1752	3435		1752	1845	1509	1752	1845	1531
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)	1752	3395		1752	3435		1752	1845	1509	1752	1845	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	78	715	144	158	990	77	274	392	155	127	220	88
RTOR Reduction (vph)	0	17	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	78	842	0	158	1062	0	274	392	111	127	220	43
Confl. Peds. (#/hr)			7			40			24			11
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	7.0	28.4		10.9	32.3		16.3	26.5	26.5	8.8	19.0	19.0
Effective Green, g (s)	7.0	28.4		10.9	32.3		16.3	26.5	26.5	8.8	19.0	19.0
Actuated g/C Ratio	0.08	0.31		0.12	0.35		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	134	1053		208	1211		312	534	437	168	383	318
v/s Ratio Prot	0.04	0.25		c0.09	c0.31		c0.16	c0.21		0.07	0.12	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.58	0.80		0.76	0.88		0.88	0.73	0.25	0.76	0.57	0.13
Uniform Delay, d1	40.9	29.0		39.1	27.8		36.7	29.4	25.0	40.4	32.7	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	4.1	4.4		13.2	7.4		22.6	5.2	0.3	15.7	2.1	0.2
Delay (s)	45.0	33.4		52.2	35.2		59.3	34.6	25.3	56.0	34.7	29.8
Level of Service	D	C		D	D		E	C	C	E	C	C
Approach Delay (s)		34.4			37.4			41.0			40.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	37.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	91.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	56	693	14	13	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1641		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1641		3527			3308
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	30	62	762	15	14	570
RTOR Reduction (vph)	44	0	2	0	0	0
Lane Group Flow (vph)	48	0	775	0	0	584
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2026
v/s Ratio Prot	c0.03		c0.22			
v/s Ratio Perm						0.18
v/c Ratio	0.10		0.36			0.29
Uniform Delay, d1	20.9		7.7			7.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.5			0.4
Delay (s)	21.3		8.2			7.7
Level of Service	C		A			A
Approach Delay (s)	21.3		8.2			7.7
Approach LOS	C		A			A

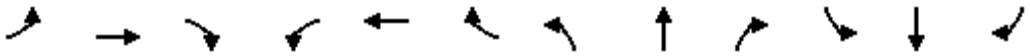
Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	49	23	2	54	33	657	42	76	463	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	55	26	2	61	37	738	47	85	520	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1208	1563	272	1334	1541	403	530			790		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1208	1563	272	1334	1541	403	530			790		
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 %	96	95	92	71	98	90	96			90		
cM capacity (veh/h)	108	95	719	88	98	592	1029			822		

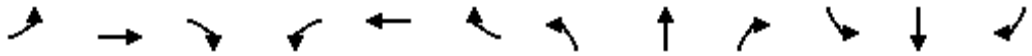
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	64	89	406	416	346	265
Volume Left	4	26	37	0	85	0
Volume Right	55	61	0	47	0	4
cSH	387	212	1029	1700	822	1700
Volume to Capacity	0.17	0.42	0.04	0.24	0.10	0.16
Queue Length 95th (ft)	15	48	3	0	9	0
Control Delay (s)	16.1	33.7	1.1	0.0	3.4	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	16.1	33.7	0.6		1.9	
Approach LOS	C	D				

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	57.6%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	474	95	71	394	95	81	502	107	55	262	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1793			1784			3378		1752	3450	
Flt Permitted		0.93			0.86			0.86		0.27	1.00	
Satd. Flow (perm)		1681			1545			2930		504	3450	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	484	97	72	402	97	83	512	109	56	267	23
RTOR Reduction (vph)	0	7	0	0	7	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	618	0	0	564	0	0	689	0	56	283	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		874			803			1172		202	1380	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.37			0.36			c0.24		0.11		
v/c Ratio		0.71			0.70			0.59		0.28	0.21	
Uniform Delay, d1		18.2			18.1			23.5		20.2	19.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.8			5.1			2.2		3.4	0.3	
Delay (s)		23.0			23.2			25.7		23.6	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		23.0			23.2			25.7			20.5	
Approach LOS		C			C			C			C	

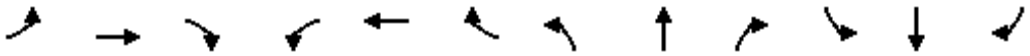
Intersection Summary			
HCM Average Control Delay	23.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	229	26	75	402	158	44	976	80	33	504	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		0.99			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3424			3477	1499	1752	3458			3447	
Flt Permitted		0.88			0.84	1.00	0.39	1.00			0.86	
Satd. Flow (perm)		3013			2957	1499	721	3458			2965	
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)	32	244	28	80	428	168	47	1038	85	35	536	49
RTOR Reduction (vph)	0	8	0	0	0	64	0	6	0	0	7	0
Lane Group Flow (vph)	0	296	0	0	508	104	47	1117	0	0	613	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		21.7			21.7	21.7	41.2	41.2			41.2	
Effective Green, g (s)		21.7			21.7	21.7	41.2	41.2			41.2	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		922			905	459	419	2009			1723	
v/s Ratio Prot								c0.32				
v/s Ratio Perm		0.10			c0.17	0.07	0.07				0.21	
v/c Ratio		0.32			0.56	0.23	0.11	0.56			0.36	
Uniform Delay, d1		18.9			20.6	18.3	6.7	9.2			7.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.8	0.3	0.1	0.3			0.1	
Delay (s)		19.1			21.4	18.6	6.8	9.5			8.0	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		19.1			20.7			9.4			8.0	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	70.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

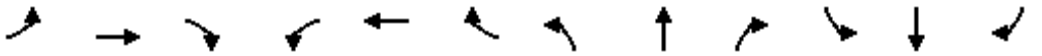
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	133	1	104	1	685	183	153	296	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.97			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1568			1598			3214			3281	
Flt Permitted		0.97			0.83			0.95			0.56	
Satd. Flow (perm)		1527			1356			3068			1865	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	139	1	108	1	714	191	159	308	5
RTOR Reduction (vph)	0	3	0	0	20	0	0	25	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	228	0	0	881	0	0	471	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		16.9			16.9			24.6			29.9	
Effective Green, g (s)		16.9			16.9			24.6			29.9	
Actuated g/C Ratio		0.31			0.31			0.45			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		471			418			1377			1051	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.17			c0.29			0.23	
v/c Ratio		0.01			0.55			0.64			3.53dl	
Uniform Delay, d1		13.1			15.8			11.7			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.5			1.0			0.3	
Delay (s)		13.1			17.2			12.7			7.8	
Level of Service		B			B			B			A	
Approach Delay (s)		13.1			17.2			12.7			7.8	
Approach LOS		B			B			B			A	

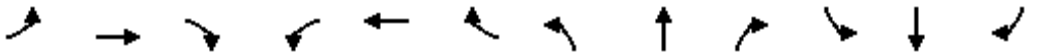
Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	636	83	66	457	0	57	0	61	430	129	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3468		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.28	1.00			0.74		0.67	0.76	1.00
Satd. Flow (perm)		3468		524	3539			1281		1189	1342	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	715	93	74	513	0	64	0	69	483	145	306
RTOR Reduction (vph)	0	0	0	0	0	0	0	43	0	0	0	142
Lane Group Flow (vph)	0	808	0	74	513	0	0	90	0	309	319	164
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		20.5		20.5	20.5			18.7		18.7	18.7	18.7
Effective Green, g (s)		20.5		20.5	20.5			18.7		18.7	18.7	18.7
Actuated g/C Ratio		0.42		0.42	0.42			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1445		218	1475			487		452	510	593
v/s Ratio Prot		c0.23			0.14							
v/s Ratio Perm				0.14				0.07		c0.26	0.24	0.11
v/c Ratio		0.56		0.34	0.35			0.19		0.68	0.63	0.28
Uniform Delay, d1		10.9		9.7	9.8			10.2		12.8	12.4	10.6
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3		0.3	0.1			0.1		3.4	1.7	0.1
Delay (s)		11.2		10.1	9.8			10.2		16.2	14.1	10.7
Level of Service		B		B	A			B		B	B	B
Approach Delay (s)		11.2			9.9			10.2			13.7	
Approach LOS		B			A			B			B	

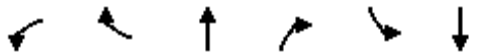
Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	101	717	185	116	559	56	180	172	186	82	272	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1752	3351		1752	3427		1752	1845	1505	1752	1845	1484
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)	1752	3351		1752	3427		1752	1845	1505	1752	1845	1484
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	104	739	191	120	576	58	186	177	192	85	280	76
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	117	0	0	29
Lane Group Flow (vph)	104	907	0	120	626	0	186	177	75	85	280	47
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.2	25.3		7.8	25.9		12.8	26.2	25.9	6.2	19.6	25.3
Effective Green, g (s)	7.2	25.3		7.8	25.9		12.8	26.2	25.9	6.2	19.6	25.3
Actuated g/C Ratio	0.09	0.31		0.09	0.31		0.16	0.32	0.31	0.08	0.24	0.31
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	153	1028		166	1076		272	586	472	132	438	455
v/s Ratio Prot	0.06	c0.27		c0.07	0.18		c0.11	0.10		0.05	c0.15	
v/s Ratio Perm									0.05			0.03
v/c Ratio	0.68	0.88		0.72	0.58		0.68	0.30	0.16	0.64	0.64	0.10
Uniform Delay, d1	36.5	27.2		36.3	23.8		32.9	21.2	20.4	37.1	28.3	20.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.1	9.1		12.4	0.8		5.6	0.3	0.2	7.8	3.1	0.1
Delay (s)	45.6	36.3		48.7	24.6		38.5	21.5	20.6	44.9	31.3	20.6
Level of Service	D	D		D	C		D	C	C	D	C	C
Approach Delay (s)		37.2			28.4			26.9			32.1	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM Average Control Delay	32.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	82.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

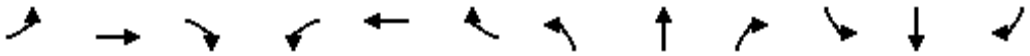
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	43	575	35	42	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1660		3503			3528
Flt Permitted	0.98		1.00			0.88
Satd. Flow (perm)	1660		3503			3124
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	33	46	612	37	45	670
RTOR Reduction (vph)	33	0	5	0	0	0
Lane Group Flow (vph)	46	0	644	0	0	715
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2146			1913
v/s Ratio Prot	c0.03		0.18			
v/s Ratio Perm						c0.23
v/c Ratio	0.10		0.30			0.37
Uniform Delay, d1	20.9		7.4			7.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.6
Delay (s)	21.3		7.7			8.3
Level of Service	C		A			A
Approach Delay (s)	21.3		7.7			8.3
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

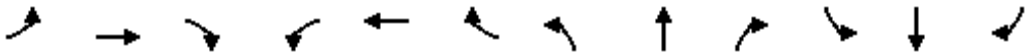
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	55	30	0	97	35	512	54	52	603	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	57	31	0	101	36	533	56	54	628	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1190	1412	327	1126	1386	305	638			595		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1190	1412	327	1126	1386	305	638			595		
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	97	91	76	100	85	96			94		
cM capacity (veh/h)	112	123	663	131	128	685	938			974		

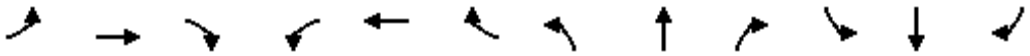
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	60	132	303	323	368	319
Volume Left	0	31	36	0	54	0
Volume Right	57	101	0	56	0	5
cSH	541	343	938	1700	974	1700
Volume to Capacity	0.11	0.39	0.04	0.19	0.06	0.19
Queue Length 95th (ft)	9	44	3	0	4	0
Control Delay (s)	12.5	21.9	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.5	21.9	0.7		1.0	
Approach LOS	B	C				

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	60.0%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	470	116	114	554	75	120	517	88	71	423	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1786			1801			3393		1752	3449	
Flt Permitted		0.95			0.78			0.73		0.25	1.00	
Satd. Flow (perm)		1707			1414			2493		469	3449	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	27	480	118	116	565	77	122	528	90	72	432	38
RTOR Reduction (vph)	0	8	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	617	0	0	754	0	0	729	0	72	463	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		888			735			997		188	1380	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.36			c0.53			c0.29		0.15		
v/c Ratio		0.69			1.03			0.73		0.38	0.34	
Uniform Delay, d1		18.0			24.0			25.4		21.3	20.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.5			40.0			4.7		5.8	0.7	
Delay (s)		22.5			64.0			30.2		27.1	21.5	
Level of Service		C			E			C		C	C	
Approach Delay (s)		22.5			64.0			30.2			22.2	
Approach LOS		C			E			C			C	

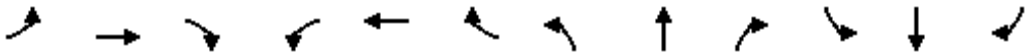
Intersection Summary			
HCM Average Control Delay	36.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	152.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	365	40	64	266	99	24	727	130	61	919	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3434			3471	1498	1752	3412			3462	
Flt Permitted		0.94			0.78	1.00	0.22	1.00			0.85	
Satd. Flow (perm)		3225			2730	1498	414	3412			2957	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	372	41	65	271	101	24	742	133	62	938	56
RTOR Reduction (vph)	0	9	0	0	0	75	0	13	0	0	4	0
Lane Group Flow (vph)	0	419	0	0	336	26	24	862	0	0	1052	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		18.3			18.3	18.3	45.1	45.1			45.1	
Effective Green, g (s)		18.3			18.3	18.3	45.1	45.1			45.1	
Actuated g/C Ratio		0.26			0.26	0.26	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		827			700	384	262	2155			1868	
v/s Ratio Prot								0.25				
v/s Ratio Perm		c0.13			0.12	0.02	0.06				c0.36	
v/c Ratio		0.51			0.48	0.07	0.09	0.40			0.56	
Uniform Delay, d1		22.7			22.5	20.1	5.1	6.5			7.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.5			0.5	0.1	0.2	0.1			0.4	
Delay (s)		23.2			23.0	20.2	5.3	6.6			7.9	
Level of Service		C			C	C	A	A			A	
Approach Delay (s)		23.2			22.4			6.6			7.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	71.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.5%	ICU Level of Service	H
Analysis Period (min)	15		

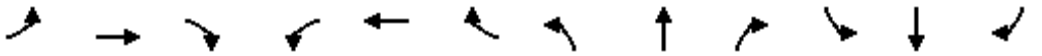
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	144	3	120	2	371	159	222	575	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.94			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1671			1593			3151			3293	
Flt Permitted		0.91			0.83			0.95			0.63	
Satd. Flow (perm)		1550			1351			3006			2089	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	160	3	133	2	412	177	247	639	6
RTOR Reduction (vph)	0	1	0	0	23	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	273	0	0	554	0	0	892	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		24.7			24.7			55.8			61.7	
Effective Green, g (s)		24.7			24.7			55.8			61.7	
Actuated g/C Ratio		0.26			0.26			0.59			0.65	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		406			353			1777			1390	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.20			0.18			c0.41	
v/c Ratio		0.02			0.77			0.31			7.06dl	
Uniform Delay, d1		25.9			32.3			9.7			9.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			10.1			0.1			1.0	
Delay (s)		25.9			42.4			9.8			10.8	
Level of Service		C			D			A			B	
Approach Delay (s)		25.9			42.4			9.8			10.8	
Approach LOS		C			D			A			B	

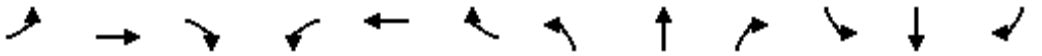
Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



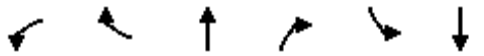
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	780	156	97	721	0	68	0	79	391	69	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3436		1770	3539			1675		1681	1710	1559
Flt Permitted		1.00		0.20	1.00			0.75		0.70	0.73	1.00
Satd. Flow (perm)		3436		376	3539			1282		1239	1292	1559
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	876	175	109	810	0	76	0	89	439	78	156
RTOR Reduction (vph)	0	0	0	0	0	0	0	34	0	0	0	40
Lane Group Flow (vph)	0	1051	0	109	810	0	0	131	0	255	262	116
Confl. Peds. (#/hr)			6			17			5			5
Confl. Bikes (#/hr)						2						1
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		27.5		27.5	27.5			17.3		17.3	17.3	17.3
Effective Green, g (s)		27.5		27.5	27.5			17.3		17.3	17.3	17.3
Actuated g/C Ratio		0.50		0.50	0.50			0.32		0.32	0.32	0.32
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1724		189	1776			405		391	408	492
v/s Ratio Prot		c0.31			0.23							
v/s Ratio Perm				0.29				0.10		c0.21	0.20	0.07
v/c Ratio		0.61		0.58	0.46			0.32		0.65	0.64	0.24
Uniform Delay, d1		9.8		9.6	8.8			14.3		16.2	16.1	13.9
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.4		2.6	0.1			0.2		3.0	2.6	0.1
Delay (s)		10.2		12.2	8.9			14.5		19.1	18.7	14.0
Level of Service		B		B	A			B		B	B	B
Approach Delay (s)		10.2			9.3			14.5			17.8	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	64.4%	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)	71	651	179	101	901	70	249	357	141	116	200	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		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
Frt	1.00	0.97		1.00	0.99		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)	1752	3363		1752	3436		1752	1845	1509	1752	1845	1531
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)	1752	3363		1752	3436		1752	1845	1509	1752	1845	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	78	715	197	111	990	77	274	392	155	127	220	88
RTOR Reduction (vph)	0	24	0	0	5	0	0	0	44	0	0	45
Lane Group Flow (vph)	78	888	0	111	1062	0	274	392	111	127	220	43
Confl. Peds. (#/hr)			7			40			24			11
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		Perm	Prot		Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									8			4
Actuated Green, G (s)	6.9	30.2		8.0	31.3		16.5	26.6	26.6	8.8	18.9	18.9
Effective Green, g (s)	6.9	30.2		8.0	31.3		16.5	26.6	26.6	8.8	18.9	18.9
Actuated g/C Ratio	0.08	0.33		0.09	0.35		0.18	0.29	0.29	0.10	0.21	0.21
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	133	1121		155	1187		319	542	443	170	385	319
v/s Ratio Prot	0.04	0.26		c0.06	c0.31		c0.16	c0.21		0.07	0.12	
v/s Ratio Perm									0.07			0.03
v/c Ratio	0.59	0.79		0.72	0.89		0.86	0.72	0.25	0.75	0.57	0.13
Uniform Delay, d1	40.5	27.4		40.2	28.1		35.9	28.7	24.4	39.8	32.2	29.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	3.9		12.3	8.9		19.2	4.7	0.3	14.4	2.0	0.2
Delay (s)	44.7	31.3		52.5	37.0		55.2	33.4	24.7	54.2	34.3	29.4
Level of Service	D	C		D	D		E	C	C	D	C	C
Approach Delay (s)		32.3			38.5			39.0			39.1	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM Average Control Delay	36.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	27	56	693	14	13	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.91		1.00			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1641		3527			3535
Flt Permitted	0.98		1.00			0.93
Satd. Flow (perm)	1641		3527			3308
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	30	62	762	15	14	570
RTOR Reduction (vph)	44	0	2	0	0	0
Lane Group Flow (vph)	48	0	775	0	0	584
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	472		2160			2026
v/s Ratio Prot	c0.03		c0.22			
v/s Ratio Perm						0.18
v/c Ratio	0.10		0.36			0.29
Uniform Delay, d1	20.9		7.7			7.3
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.5			0.4
Delay (s)	21.3		8.2			7.7
Level of Service	C		A			A
Approach Delay (s)	21.3		8.2			7.7
Approach LOS	C		A			A

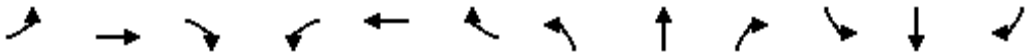
Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	4	49	23	2	54	33	657	42	76	463	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	4	4	55	26	2	61	37	738	47	85	520	4
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1208	1563	272	1334	1541	403	530			790		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1208	1563	272	1334	1541	403	530			790		
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 %	96	95	92	71	98	90	96			90		
cM capacity (veh/h)	108	95	719	88	98	592	1029			822		

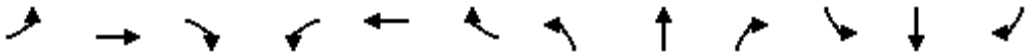
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	64	89	406	416	346	265
Volume Left	4	26	37	0	85	0
Volume Right	55	61	0	47	0	4
cSH	387	212	1029	1700	822	1700
Volume to Capacity	0.17	0.42	0.04	0.24	0.10	0.16
Queue Length 95th (ft)	15	48	3	0	9	0
Control Delay (s)	16.1	33.7	1.1	0.0	3.4	0.0
Lane LOS	C	D	A		A	
Approach Delay (s)	16.1	33.7	0.6		1.9	
Approach LOS	C	D				

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	57.6%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	43	517	95	71	394	95	81	502	107	55	262	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.98			0.98			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1796			1784			3378		1752	3450	
Flt Permitted		0.94			0.85			0.86		0.27	1.00	
Satd. Flow (perm)		1691			1523			2930		504	3450	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	44	528	97	72	402	97	83	512	109	56	267	23
RTOR Reduction (vph)	0	6	0	0	7	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	663	0	0	564	0	0	689	0	56	283	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		879			792			1172		202	1380	
v/s Ratio Prot											0.08	
v/s Ratio Perm		c0.39			0.37			c0.24		0.11		
v/c Ratio		0.75			0.71			0.59		0.28	0.21	
Uniform Delay, d1		18.9			18.3			23.5		20.2	19.6	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		6.0			5.4			2.2		3.4	0.3	
Delay (s)		24.9			23.7			25.7		23.6	19.9	
Level of Service		C			C			C		C	B	
Approach Delay (s)		24.9			23.7			25.7			20.5	
Approach LOS		C			C			C			C	

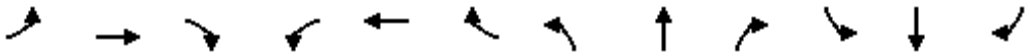
Intersection Summary			
HCM Average Control Delay	24.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	120.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	277	26	75	402	158	44	976	80	33	504	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.96	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.99			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3436			3477	1499	1752	3458			3447	
Flt Permitted		0.88			0.83	1.00	0.39	1.00			0.86	
Satd. Flow (perm)		3052			2918	1499	719	3458			2963	
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)	32	295	28	80	428	168	47	1038	85	35	536	49
RTOR Reduction (vph)	0	6	0	0	0	63	0	6	0	0	7	0
Lane Group Flow (vph)	0	349	0	0	508	105	47	1117	0	0	613	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		22.3			22.3	22.3	41.6	41.6			41.6	
Effective Green, g (s)		22.3			22.3	22.3	41.6	41.6			41.6	
Actuated g/C Ratio		0.31			0.31	0.31	0.58	0.58			0.58	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		947			905	465	416	2001			1714	
v/s Ratio Prot								c0.32				
v/s Ratio Perm		0.11			c0.17	0.07	0.07				0.21	
v/c Ratio		0.37			0.56	0.22	0.11	0.56			0.36	
Uniform Delay, d1		19.3			20.7	18.4	6.8	9.4			8.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.2			0.8	0.2	0.1	0.3			0.1	
Delay (s)		19.6			21.5	18.6	7.0	9.8			8.2	
Level of Service		B			C	B	A	A			A	
Approach Delay (s)		19.6			20.8			9.7			8.2	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	71.9	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

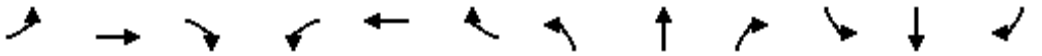
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	1	4	133	1	104	1	685	226	153	296	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		0.99			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.91			0.94			0.96			1.00	
Flt Protected		0.99			0.97			1.00			0.98	
Satd. Flow (prot)		1568			1598			3191			3281	
Flt Permitted		0.97			0.83			0.95			0.55	
Satd. Flow (perm)		1527			1356			3047			1839	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1	1	4	139	1	108	1	714	235	159	308	5
RTOR Reduction (vph)	0	3	0	0	20	0	0	33	0	0	1	0
Lane Group Flow (vph)	0	3	0	0	228	0	0	917	0	0	471	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		17.2			17.2			25.6			30.9	
Effective Green, g (s)		17.2			17.2			25.6			30.9	
Actuated g/C Ratio		0.31			0.31			0.46			0.55	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		468			416			1390			1046	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.00			c0.17			c0.30			0.24	
v/c Ratio		0.01			0.55			0.66			3.61dl	
Uniform Delay, d1		13.5			16.2			11.9			7.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			1.5			1.1			0.3	
Delay (s)		13.5			17.7			13.0			7.8	
Level of Service		B			B			B			A	
Approach Delay (s)		13.5			17.7			13.0			7.8	
Approach LOS		B			B			B			A	

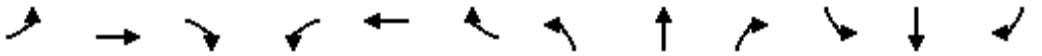
Intersection Summary			
HCM Average Control Delay	12.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	56.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	593	83	66	457	0	57	0	61	430	129	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95			1.00		0.95	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00			0.99		1.00	1.00	0.99
Flpb, ped/bikes		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Frt		0.98		1.00	1.00			0.93		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00			0.98		0.95	0.97	1.00
Satd. Flow (prot)		3463		1770	3539			1681		1681	1723	1560
Flt Permitted		1.00		0.31	1.00			0.75		0.67	0.76	1.00
Satd. Flow (perm)		3463		570	3539			1282		1189	1342	1560
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	666	93	74	513	0	64	0	69	483	145	306
RTOR Reduction (vph)	0	0	0	0	0	0	0	43	0	0	0	141
Lane Group Flow (vph)	0	759	0	74	513	0	0	90	0	309	319	165
Confl. Peds. (#/hr)			2						1			3
Confl. Bikes (#/hr)			4			1						2
Turn Type				Perm			Perm			Perm		Perm
Protected Phases		1			1			2			2	
Permitted Phases				1			2			2		2
Actuated Green, G (s)		19.7		19.7	19.7			18.5		18.5	18.5	18.5
Effective Green, g (s)		19.7		19.7	19.7			18.5		18.5	18.5	18.5
Actuated g/C Ratio		0.41		0.41	0.41			0.38		0.38	0.38	0.38
Clearance Time (s)		5.0		5.0	5.0			5.0		5.0	5.0	5.0
Vehicle Extension (s)		2.0		2.0	2.0			2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		1415		233	1446			492		456	515	599
v/s Ratio Prot		c0.22			0.14							
v/s Ratio Perm				0.13				0.07		c0.26	0.24	0.11
v/c Ratio		0.54		0.32	0.35			0.18		0.68	0.62	0.28
Uniform Delay, d1		10.8		9.7	9.9			9.8		12.4	12.0	10.2
Progression Factor		1.00		1.00	1.00			1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2		0.3	0.1			0.1		3.1	1.6	0.1
Delay (s)		11.0		10.0	9.9			9.9		15.5	13.6	10.3
Level of Service		B		A	A			A		B	B	B
Approach Delay (s)		11.0			9.9			9.9			13.1	
Approach LOS		B			A			A			B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	48.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.6%	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)	101	717	185	116	559	56	223	172	143	82	272	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.96	1.00	1.00	0.95
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		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)	1752	3351		1752	3426		1752	1845	1504	1752	1845	1483
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)	1752	3351		1752	3426		1752	1845	1504	1752	1845	1483
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	104	739	191	120	576	58	230	177	147	85	280	76
RTOR Reduction (vph)	0	23	0	0	8	0	0	0	90	0	0	29
Lane Group Flow (vph)	104	907	0	120	626	0	230	177	57	85	280	47
Confl. Peds. (#/hr)			19			31			19			29
Confl. Bikes (#/hr)						1			2			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot			Prot			Prot		custom	Prot		custom
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases									2			6
Actuated Green, G (s)	7.3	25.2		7.9	25.8		14.6	28.0	25.8	6.2	19.6	25.2
Effective Green, g (s)	7.3	25.2		7.9	25.8		14.6	28.0	25.8	6.2	19.6	25.2
Actuated g/C Ratio	0.09	0.30		0.09	0.31		0.17	0.33	0.31	0.07	0.23	0.30
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.5	4.5	4.0	4.5	4.5
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)	152	1002		164	1049		303	613	460	129	429	443
v/s Ratio Prot	0.06	c0.27		c0.07	0.18		c0.13	0.10		0.05	c0.15	
v/s Ratio Perm									0.04			0.03
v/c Ratio	0.68	0.91		0.73	0.60		0.76	0.29	0.12	0.66	0.65	0.11
Uniform Delay, d1	37.4	28.4		37.2	24.8		33.2	20.8	21.1	38.0	29.3	21.4
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	9.7	11.4		13.5	0.9		9.3	0.3	0.1	8.9	3.5	0.1
Delay (s)	47.1	39.8		50.6	25.8		42.5	21.1	21.2	46.9	32.8	21.5
Level of Service	D	D		D	C		D	C	C	D	C	C
Approach Delay (s)		40.5			29.7			30.0			33.6	
Approach LOS		D			C			C			C	

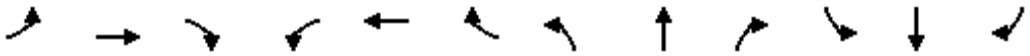
Intersection Summary			
HCM Average Control Delay	34.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	31	43	575	35	42	630
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.99		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	0.92		0.99			1.00
Flt Protected	0.98		1.00			1.00
Satd. Flow (prot)	1660		3503			3528
Flt Permitted	0.98		1.00			0.88
Satd. Flow (perm)	1660		3503			3124
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	33	46	612	37	45	670
RTOR Reduction (vph)	33	0	5	0	0	0
Lane Group Flow (vph)	46	0	644	0	0	715
Confl. Peds. (#/hr)		8		8		
Confl. Bikes (#/hr)		2		2		
Turn Type					Perm	
Protected Phases	2		1			1
Permitted Phases					1	
Actuated Green, G (s)	23.0		49.0			49.0
Effective Green, g (s)	23.0		49.0			49.0
Actuated g/C Ratio	0.29		0.61			0.61
Clearance Time (s)	4.0		4.0			4.0
Lane Grp Cap (vph)	477		2146			1913
v/s Ratio Prot	c0.03		0.18			
v/s Ratio Perm						c0.23
v/c Ratio	0.10		0.30			0.37
Uniform Delay, d1	20.9		7.4			7.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.4		0.4			0.6
Delay (s)	21.3		7.7			8.3
Level of Service	C		A			A
Approach Delay (s)	21.3		7.7			8.3
Approach LOS	C		A			A

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

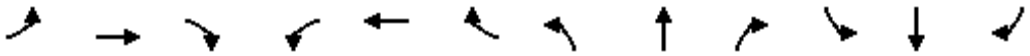
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	55	30	0	97	35	512	54	52	603	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	3	57	31	0	101	36	533	56	54	628	5
Pedestrians		5			5			5			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1190	1412	327	1126	1386	305	638			595		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1190	1412	327	1126	1386	305	638			595		
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	97	91	76	100	85	96			94		
cM capacity (veh/h)	112	123	663	131	128	685	938			974		

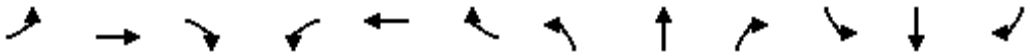
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	60	132	303	323	368	319
Volume Left	0	31	36	0	54	0
Volume Right	57	101	0	56	0	5
cSH	541	343	938	1700	974	1700
Volume to Capacity	0.11	0.39	0.04	0.19	0.06	0.19
Queue Length 95th (ft)	9	44	3	0	4	0
Control Delay (s)	12.5	21.9	1.4	0.0	1.8	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.5	21.9	0.7		1.0	
Approach LOS	B	C				

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	60.0%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	470	116	114	597	75	120	517	88	71	423	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00			0.95		1.00	0.95	
Frpb, ped/bikes		1.00			1.00			0.99		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.97			0.99			0.98		1.00	0.99	
Flt Protected		1.00			0.99			0.99		0.95	1.00	
Satd. Flow (prot)		1786			1803			3393		1752	3449	
Flt Permitted		0.95			0.79			0.73		0.25	1.00	
Satd. Flow (perm)		1702			1432			2493		469	3449	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	27	480	118	116	609	77	122	528	90	72	432	38
RTOR Reduction (vph)	0	8	0	0	4	0	0	11	0	0	7	0
Lane Group Flow (vph)	0	617	0	0	798	0	0	729	0	72	463	0
Confl. Peds. (#/hr)			20			20			20			20
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)		52.0			52.0			40.0		40.0	40.0	
Effective Green, g (s)		52.0			52.0			40.0		40.0	40.0	
Actuated g/C Ratio		0.52			0.52			0.40		0.40	0.40	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Grp Cap (vph)		885			745			997		188	1380	
v/s Ratio Prot											0.13	
v/s Ratio Perm		0.36			c0.56			c0.29		0.15		
v/c Ratio		0.70			1.07			0.73		0.38	0.34	
Uniform Delay, d1		18.1			24.0			25.4		21.3	20.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		4.5			53.8			4.7		5.8	0.7	
Delay (s)		22.6			77.8			30.2		27.1	21.5	
Level of Service		C			E			C		C	C	
Approach Delay (s)		22.6			77.8			30.2			22.2	
Approach LOS		C			E			C			C	

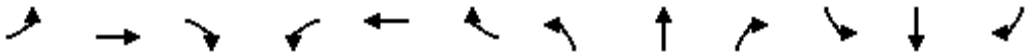
Intersection Summary			
HCM Average Control Delay	40.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	154.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	365	40	64	309	99	24	727	130	61	919	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Lane Util. Factor		0.95			0.95	1.00	1.00	0.95			0.95	
Frpb, ped/bikes		1.00			1.00	0.95	1.00	1.00			1.00	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00			1.00	
Frt		0.99			1.00	0.85	1.00	0.98			0.99	
Flt Protected		1.00			0.99	1.00	0.95	1.00			1.00	
Satd. Flow (prot)		3434			3475	1497	1752	3412			3462	
Flt Permitted		0.94			0.80	1.00	0.22	1.00			0.85	
Satd. Flow (perm)		3220			2787	1497	410	3412			2954	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	372	41	65	315	101	24	742	133	62	938	56
RTOR Reduction (vph)	0	9	0	0	0	74	0	13	0	0	4	0
Lane Group Flow (vph)	0	419	0	0	380	27	24	862	0	0	1052	0
Confl. Peds. (#/hr)			30			30			30			30
Confl. Bikes (#/hr)			5			5			5			5
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	D.Pm			Perm		Perm	Perm			Perm		
Protected Phases					2			1			1	
Permitted Phases	2	2		2		2	1			1		
Actuated Green, G (s)		19.2			19.2	19.2	45.4	45.4			45.4	
Effective Green, g (s)		19.2			19.2	19.2	45.4	45.4			45.4	
Actuated g/C Ratio		0.26			0.26	0.26	0.63	0.63			0.63	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0			4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)		852			737	396	256	2134			1847	
v/s Ratio Prot								0.25				
v/s Ratio Perm		0.13			c0.14	0.02	0.06				c0.36	
v/c Ratio		0.49			0.52	0.07	0.09	0.40			0.57	
Uniform Delay, d1		22.6			22.7	20.0	5.4	6.8			7.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.4			0.6	0.1	0.2	0.1			0.4	
Delay (s)		23.0			23.4	20.1	5.6	6.9			8.3	
Level of Service		C			C	C	A	A			A	
Approach Delay (s)		23.0			22.7			6.9			8.3	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	72.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	4	2	187	3	120	2	371	159	222	575	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0			4.0	
Lane Util. Factor		1.00			1.00			0.95			0.95	
Frpb, ped/bikes		1.00			0.99			0.99			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.97			0.95			0.96			1.00	
Flt Protected		0.98			0.97			1.00			0.99	
Satd. Flow (prot)		1671			1605			3151			3293	
Flt Permitted		0.90			0.81			0.95			0.63	
Satd. Flow (perm)		1538			1338			3006			2089	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	4	2	208	3	133	2	412	177	247	639	6
RTOR Reduction (vph)	0	1	0	0	18	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	9	0	0	326	0	0	554	0	0	892	0
Confl. Peds. (#/hr)			5			5			5			5
Confl. Bikes (#/hr)			2			2			2			2
Heavy Vehicles (%)	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
Turn Type	Perm			Perm			Perm			Prot		
Protected Phases		8			8			2		1	6	
Permitted Phases	8			8			2					
Actuated Green, G (s)		24.7			24.7			55.8			61.7	
Effective Green, g (s)		24.7			24.7			55.8			61.7	
Actuated g/C Ratio		0.26			0.26			0.59			0.65	
Clearance Time (s)		4.0			4.0			4.0			4.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		402			350			1777			1390	
v/s Ratio Prot											c0.01	
v/s Ratio Perm		0.01			c0.24			0.18			c0.41	
v/c Ratio		0.02			0.93			0.31			7.06dl	
Uniform Delay, d1		25.9			34.0			9.7			9.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.0			31.1			0.1			1.0	
Delay (s)		25.9			65.1			9.8			10.8	
Level of Service		C			E			A			B	
Approach Delay (s)		25.9			65.1			9.8			10.8	
Approach LOS		C			E			A			B	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	94.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group