

APPENDIX C
TRAFFIC REPORT



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December 2019

Transportation Assessment

Delta Fair Village

Prepared for:
The City of Antioch
Raney Planning & Management, Inc.

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1. Introduction

This report presents the analysis and findings of the Transportation Impact Assessment (TIA) prepared for the Delta Fair Village (Project) located in the City of Antioch, Contra Costa County. This chapter discusses the TIA purpose, study locations and analysis scenarios, analysis methods, criteria used to identify significant impacts, and report organization.

Study Purpose and Project Description

The study's purpose is to evaluate the transportation impacts of the Project, located on Delta Fair Boulevard in Antioch between San Jose Drive and Buchanan Road, as shown in **Figure 1**. The site is currently developed with an underperforming retail center that would be partially removed with the remaining buildings renovated as part of the Project. The proposed Project would remove 73,550 square feet of existing retail uses and much of the site's southern parking, to be replaced by a 141,440 square foot single story parking garage, with 210 multi-family residential units above the garage. The proposed Project will also develop a new 4,000 square foot building with the potential to be either a day care center, or additional retail space. The remaining existing 73,535 square feet of retail uses would be renovated. The Project site plan is shown on **Figure 2**.

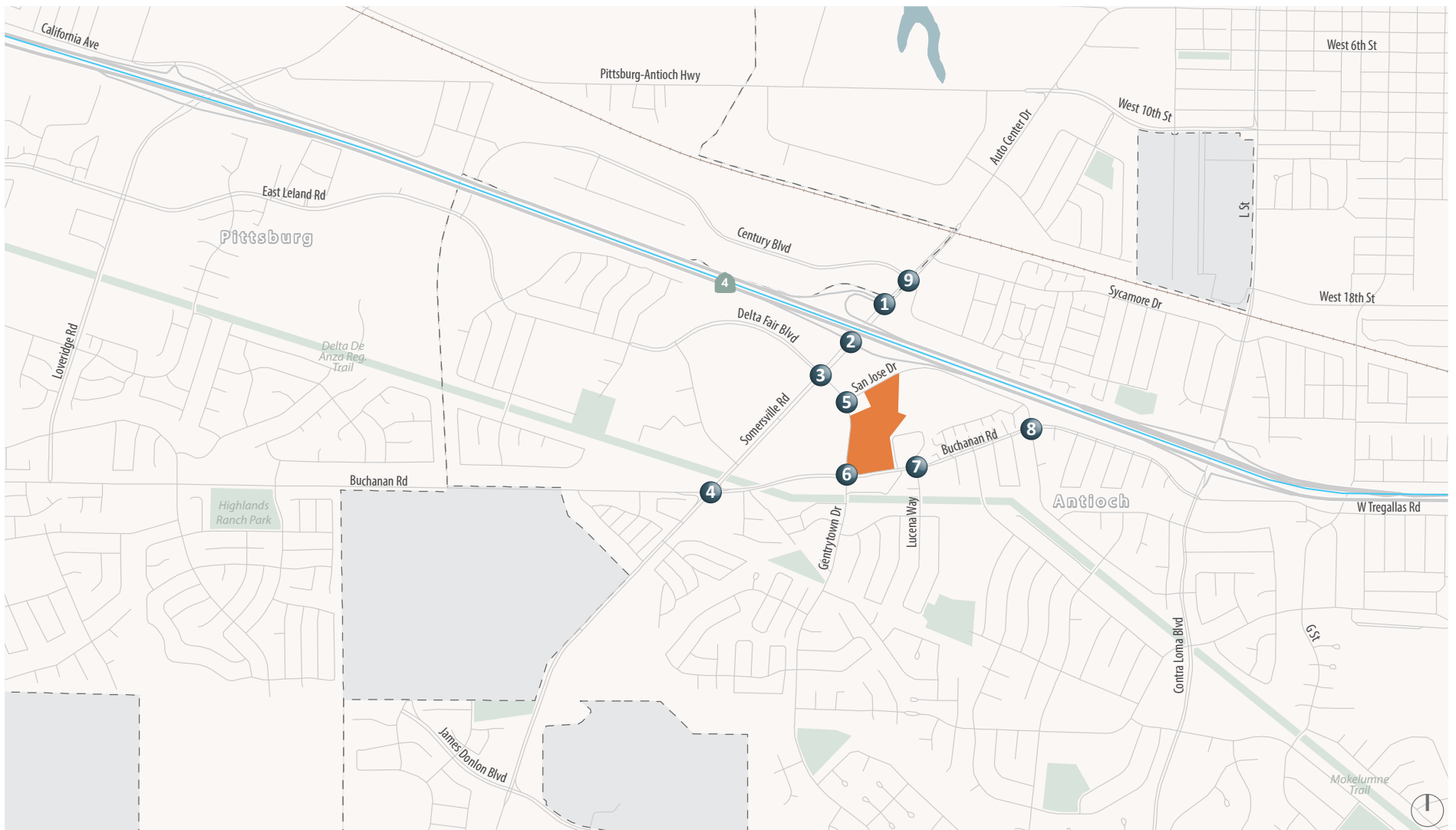
Vehicular access would occur from San Jose Drive, Delta Fair Boulevard, and Buchanan Road via various existing and proposed driveways as part of the proposed Project.

Study Locations and Analysis Scenarios

Project impacts on study area roadway facilities were determined by measuring the effect project traffic would have on intersections in the vicinity of the site during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. The following intersections were selected based on a review of the Project location, estimates of the added traffic from the Project, and locations of planned roadways in the area:

1. Somersville Road/State Route 4
Westbound Ramps
2. Somersville Road/State Route 4
Eastbound Ramps
3. Somersville Road/Delta Fair Boulevard
4. Somersville Road/Buchanan Road
5. San Jose Drive/Delta Fair Boulevard
6. Buchanan Road/Delta Fair Boulevard
7. Buchanan Road/Lucena Way
8. Buchanan Road/San Jose Drive
9. Auto Center Drive/Century Boulevard



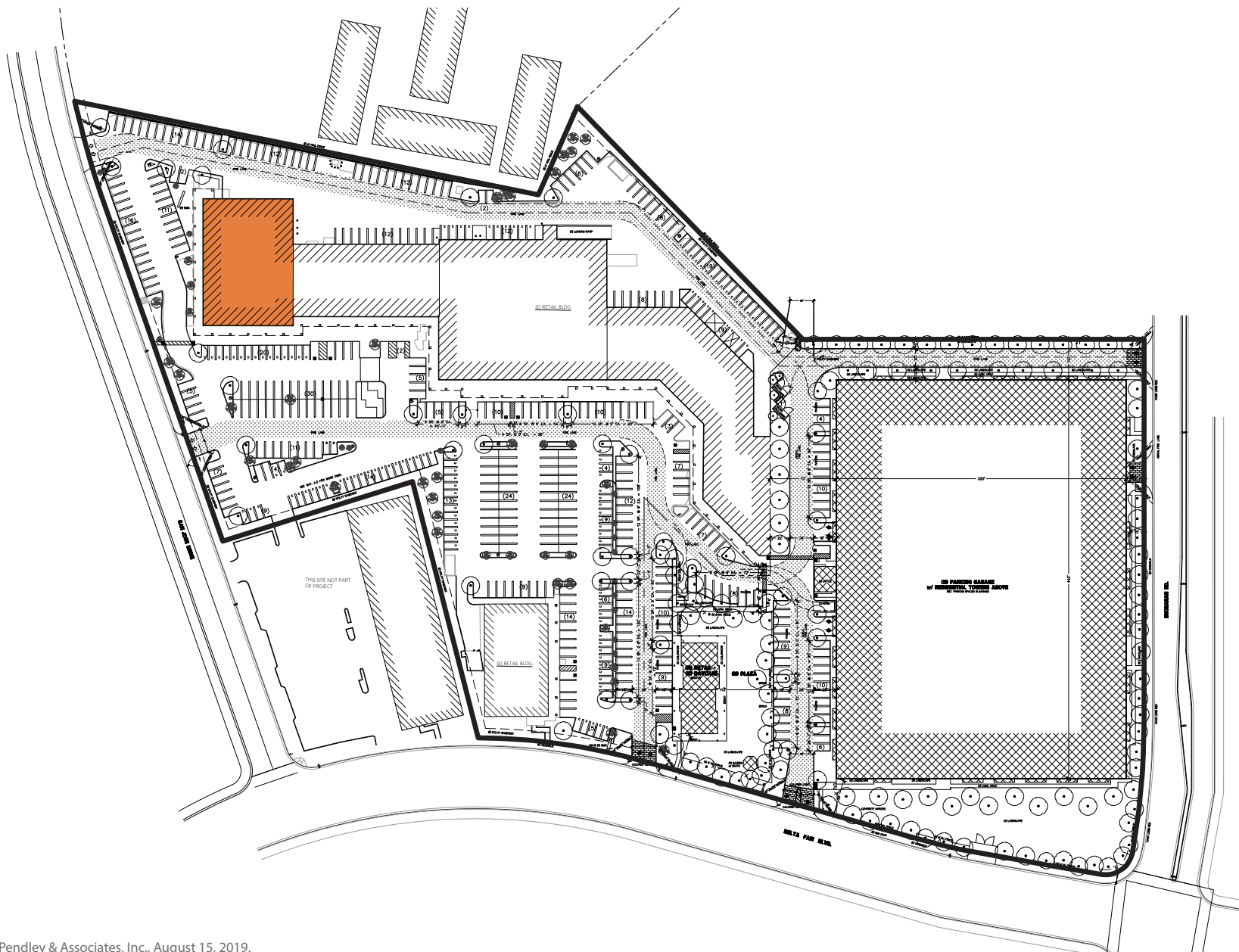


Project Site
 Study Intersection



Figure 1

Project Site Vicinity and Proposed Analysis Locations



Site Plan Source: Pendley & Associates, Inc., August 15, 2019.



Figure 2



Pending Project 8

Site Plan

The following freeway segments were evaluated:

1. State Route 4, west of Somersville Road
2. State Route 4, between Somersville Road and Contra Loma Boulevard
3. State Route 4, east of Contra Loma Boulevard

The following scenarios were evaluated:

- **Existing** – Existing (2019) conditions based on recent traffic counts.
- **Existing with Project** – Existing (2019) conditions with project-related traffic. An assessment of the day care center alternative for the 4,000 SF building on the southwestern part of the Project site was conducted.
- **Near-Term without Project** – Existing (2019) conditions with approved projects within the study area that could be constructed over the next five to ten years. Additional details are provided in Chapter 5.
- **Near-Term with Project** – Near-Term conditions with project-related traffic. An assessment of the day care center alternative for the 4,000 SF building on the southwestern part of the Project site was conducted.
- **Cumulative without Project** – Forecasts for the cumulative scenario are based on traffic growth trends as described in the Antioch General Plan EIR and supplemented by a check of traffic forecasts for the study area in the most recent Contra Costa Transportation Authority Countywide travel demand model. The scenario reflects conditions over the next 20 to 25 years. Additional details are provided in Chapter 6.
- **Cumulative with Project** – Future forecast conditions with project-related traffic. An assessment of the day care center alternative for the 4,000 SF building on the southwestern part of the Project site was conducted.

Analysis Methods

The operations of roadway facilities are described with the term “level of service” (LOS). LOS is a qualitative description of traffic flow from a vehicle driver’s perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-flow conditions) to LOS F (over capacity conditions). LOS E corresponds to operations “at capacity.” When volumes exceed capacity, stop-and-go conditions result, and operations are designated LOS F.



Signalized Intersections

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board (TRB), as documented in the 2010 *Highway Capacity Manual* (2010 HCM) for vehicles using the analysis software Synchro 10.0. The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay is summarized in **Table 1**.

Unsignalized Intersections

For unsignalized (all-way stop controlled and side-street stop controlled) intersections, the 2010 HCM method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. **Table 2** summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop-controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop-controlled intersections.

Table 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
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Source: 2010 Highway Capacity Manual

Table 2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 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 where intersection capacity exceeded	> 50.0

Source: 2010 Highway Capacity Manual

Freeway Segments

For freeway segments, the *East County Action Plan for Routes of Regional Significance*, CCTA has established delay index and HOV lane utilization as the Multimodal Transportation Service Objectives (MTSO) for all freeways in East County, including State Route 4 (SR4). The delay index is the ratio of travel time on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, freeway operations would be considered deficient. This would equate to peak hour travel taking 2.5 times as long as off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour. HOV lane utilization is also identified as an MTSO, and the plan states that it should exceed 600 vehicles per lane in the peak direction during the peak hour.

Regulatory Setting and Significance Criteria

The Project would have a significant impact on the environment if it would cause an increase in traffic which is substantial in relation to the traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, or delay and congestion at intersections), or change the condition of an existing street (e.g., street closures, changing direction of travel) in a manner that would substantially impact access or traffic load and capacity of the street system. Significance criteria are used to determine whether a project impact is considered significant and therefore requires mitigation. The City of Antioch strives to maintain LOS D operations at signalized intersections.



The following thresholds of significance were developed based on City of Antioch and East Contra Costa County Action Plan policies, CCTA's *Technical Procedures* (2013), as well as the CEQA Checklist criteria as shown below.

1. Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
 - a. Would the operations of a study intersection not on a route of regional significance decline from LOS D (an average delay of 55 seconds for signalized intersections) or better to LOS E or F, based on the HCM LOS method, with the addition of project traffic?
 - b. Would the Project deteriorate already unacceptable operations at a signalized intersection by adding traffic?
 - c. Would the operations of an unsignalized study intersection decline from acceptable to unacceptable with the addition of project traffic, and would the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3), be warranted?
 - d. Would construction traffic from the Project have a significant, though temporary, impact on the environment, or would project construction substantially affect traffic flow and circulation, parking, and pedestrian safety?
2. Would the Project 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 and highways?
 - a. Would the operations of a study intersection on a route of regional significance decline from LOS high-D (an average delay of 55 seconds for signalized intersections) or better to LOS E or F, based on the HCM LOS method, with the addition of project traffic?
 - b. Would the Project result in or worsen unacceptable conditions on State Route 4, based on delay index calculations, considering High Occupancy Vehicle (HOV) Lane usage?
 - The delay index should not exceed 2.5 during the AM or PM peak hour
 - HOV lane utilization should exceed 600 vehicles per lane in the peak direction in the peak hour
3. Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?



4. Would the Project substantially increase traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?
5. Would the Project result in inadequate emergency access?
6. Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Report Organization

This report is divided into 9 chapters as described below:

- **Chapter 1 – Introduction** discusses the purpose and organization of the report.
- **Chapter 2 – Existing Conditions** describes the transportation system in the Project vicinity, including the surrounding roadway network morning and evening peak period intersection turning movement volumes, existing bicycle, pedestrian, and transit facilities, and intersection operations.
- **Chapter 3 – Project Characteristics** presents relevant project information, such as the Project components and project trip generation, distribution, and assignment.
- **Chapter 4 – Existing with Project Traffic Conditions** addresses the existing conditions with the Project and discusses project vehicular impacts.
- **Chapter 5 – Near-Term Traffic Conditions** addresses the near-term future conditions, both without and with the Project and discusses project vehicular impacts.
- **Chapter 6 – Cumulative Traffic Conditions** addresses the long-term future conditions, both without and with the Project and discusses project vehicular impacts.
- **Chapter 7 – Freeway Analysis** presents the results of the freeway analysis under existing, near-term and cumulative conditions.
- **Chapter 8 – Site Plan Review** describes project access and circulation for all travel modes.
- **Chapter 9 – Vehicle Miles of Travel** presents the results of the VMT assessment conducted for the Project.



2. Existing Conditions

This chapter describes transportation facilities in the Project study area, including the surrounding roadway network, transit, pedestrian, and bicycle facilities in the Project site vicinity. Existing intersection operations are also described.

Roadway System

The Project site is bounded by existing retail to the north and west, office space and single-family homes to the south, and existing apartment buildings to the east in Antioch, California. Antioch is located in eastern Contra Costa County, adjacent to the cities of Oakley, Brentwood, and Pittsburg located east, southeast, and west respectively. Land uses surrounding the Project site are residential, retail, and office space.

Regional access to the site is provided by State Route 4, Buchanan Road, and Somersville Road/Auto Center Drive. Delta Fair Boulevard and San Jose Drive provide local access. The following section discusses the roadways that would provide access to the site and are most likely to experience direct traffic impacts, if any, from the proposed Project.

State Route 4 (SR 4) is an east-west freeway that extends from Hercules in the west to Stockton and beyond in the east. It is defined as a Route of Regional Significance in CCTA's *East County Action Plan for Routes of Regional Significance*. In the study area, SR 4 has a northwest/southeast orientation between Loveridge Road and Contra Loma Boulevard/L Street in east Contra Costa County. The facility is an eight-lane freeway within the study area, with interchanges at Loveridge Road, Somersville Road/Auto Center Drive, and Contra Loma Boulevard/L Street. Each interchange has signalized intersections at its on and off-ramps operated by the California Department of Transportation (Caltrans). State Route 4 is a designated route of regional significance by the Contra Costa County Transportation Agency (CCTA). Routes of regional significance are roadways that connect two or more subareas of Contra Costa, cross County boundaries, carry significant through traffic, and/or provide access to a regional highway or transit facility.

Somersville Road is a, north-south roadway with a northeast/southwest orientation within the study area. It is defined as a Route of Regional Significance in CCTA's *East County Action Plan for Routes of Regional Significance*. The roadway extends from SR 4 to Black Diamond Mines Regional Preserve, with six lanes from SR 4 to Delta Fair Boulevard and reduces to four lanes south of Delta Fair Boulevard. In the study area, the posted speed limit is 35 mph. Sidewalks are provided for the entire length of the study area and



shoulders are present north of Delta Fair Boulevard. Somersville Road serves both retail and residential units.

Auto Center Drive is a northeast/southwest oriented roadway located north of State Route 4. It is defined as a Route of Regional Significance in CCTA's *East County Action Plan for Routes of Regional Significance*. The roadway extends from SR 4 to north Antioch. South of the SPRR line, three travel lanes are provided in each direction with shoulders and sidewalks. North of the SPRR line, two travel lanes are provided in each direction with sidewalks. The posted speed limit is 35 mph. Auto Center Drive primarily serves retail spaces.

Delta Fair Boulevard is an east-west roadway with a primarily north/south orientation within the study area. In the study area, the roadway extends from Somersville Road to Buchanan Road. The posted speed limit is 30 mph. Two travel lanes are provided in each direction and with a two-way left-turn median for vehicles turning into the retail area. Sidewalks are provided along the roadway. Bicycle facilities are not present. Delta Fair Boulevard serves commercial developments.

San Jose Drive is an east-west roadway that provides access to much of the residential communities located east and southeast of the Project site. The posted speed limit is 35 mph. Sidewalks are present; there are no bicycle lanes. It bisects Delta Fair Boulevard at the northwest corner of the Project site and continues east to its intersection with Buchanan Road, where it then runs southeast through residential neighborhoods to its termination at Contra Loma Boulevard.

Buchanan Road is an east-west roadway that runs from Pittsburg's Railroad Avenue in the west, to Contra Loma Boulevard in the east. The segment of Buchanan Road west of Somersville Road is defined as a Route of Regional Significance in CCTA's *East County Action Plan for Routes of Regional Significance*. The posted speed limit is 35 mph. Two lanes in each direction are provided with sidewalks and bicycle lanes for most of the roadway. It serves a high volume of traffic in the peak hours, as it serves as a connector between the cities of Pittsburg and Antioch.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities in the study area include sidewalks, crosswalks, pedestrian signals and multi-use trails. At the signalized intersections in the area, crosswalks and pedestrian push-button actuated signals are provided. 10-foot sidewalks surround the Project site and crosswalks are also provided at unsignalized intersections. Bicycle facilities in Antioch include the following:

- **Bike paths (Class I)** – Bike paths provide a completely separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal cross-flow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class I Bikeways can also offer



opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes.

- **Bike lanes (Class II)** – Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections).
- **Bike routes (Class III)** – Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. Bicycle boulevards provide further enhancements to bike routes to encourage slow speeds and discourage non-local vehicle traffic via traffic diverters, chicanes, traffic circles, and/or speed tables. Bicycle boulevards can also feature special wayfinding signage to nearby destinations or other bikeways.

Within the Project vicinity, Buchanan Road provides a Class II marked bike lane on the southern side that travels just east of Delta Fair Boulevard to Contra Loma Road. On the northern side an unmarked Class II bike lane travels from just west of San Jose Drive to just east of Delta Fair Boulevard.

Existing Transit Service

The Eastern Contra Costa Transit Authority (Tri Delta Transit) provides transit service in eastern Contra Costa County, serving the communities of Brentwood, Antioch, Oakley, Concord, Discovery Bay, Bay Point and Pittsburg. Thirteen routes operate on weekdays, with four routes operating on weekends. Three routes operate in the vicinity of the Project site, with Routes 380, 390, and 394 stopping at Delta Fair Boulevard and Buchanan Road, adjacent to the Project site.

In addition to the regular transit service to the study area, dial-a-ride door-to-door service within Eastern Contra Costa County is provided by Tri Delta Transit for disabled people of all ages and senior citizens.

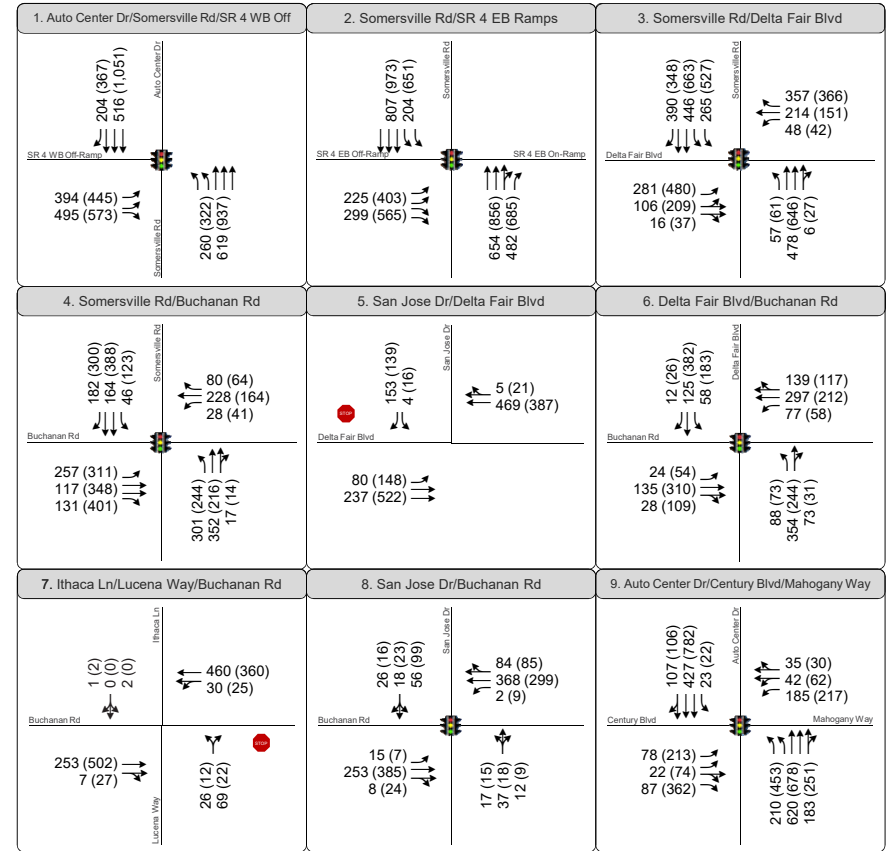
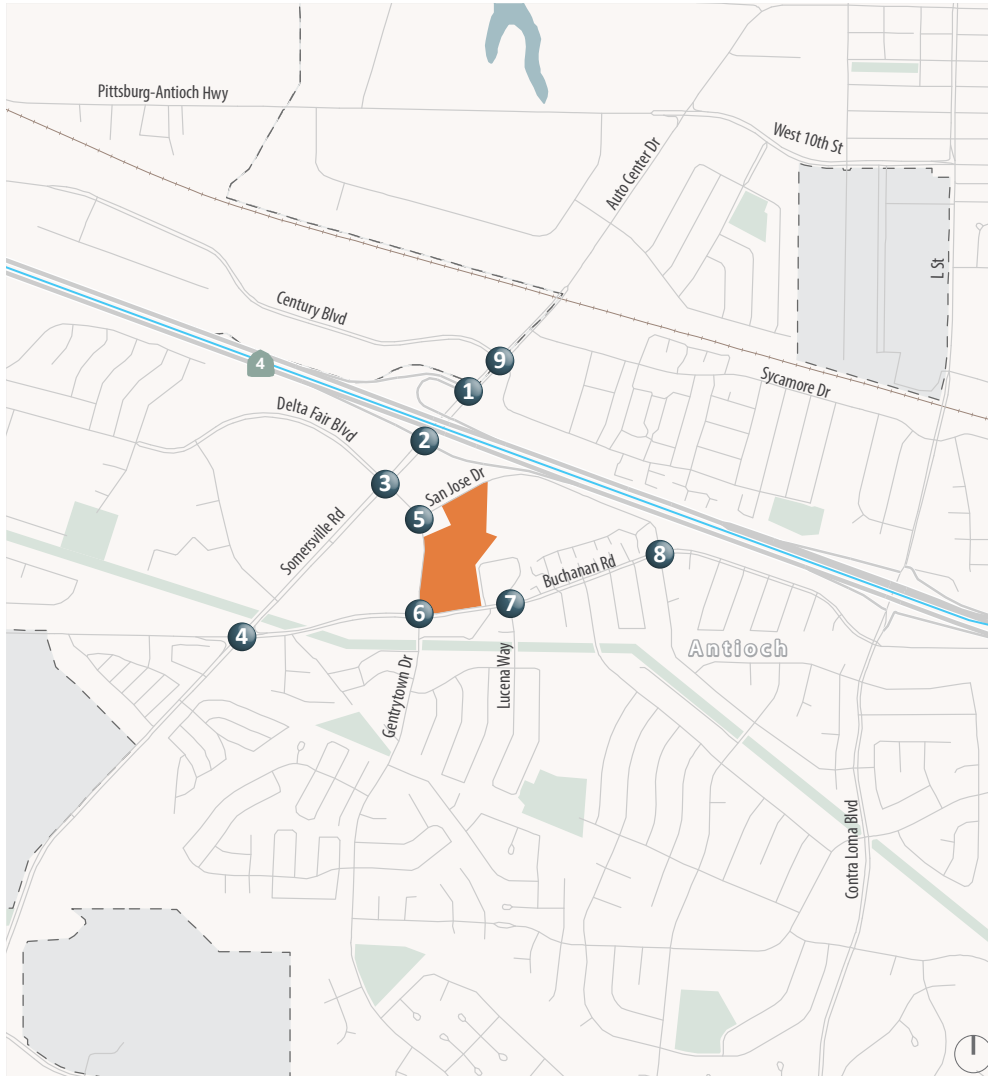
Bay Area Rapid Transit (BART) provides fixed rail transit to eastern Contra Costa County. Currently, the terminus station is located in Antioch, approximately four miles east of the Project site. Weekday service is provided on approximately 15-minute headways and weekend service is provided on approximately 20-minute headways. Antioch-SFO/Millbrae Line connects to key regional employment centers, including Concord, Pleasant Hill, Walnut Creek, Oakland and San Francisco. Transfers to other lines can be made in Oakland.



Existing Traffic Counts

Weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period intersection turning movement counts were collected at the study intersections, including separate counts of pedestrians and bicyclists, in June 2019 with area schools in normal session. Peak hour intersection vehicle volumes are summarized on **Figure 3** along with existing lane configurations and traffic controls. Bicycle and pedestrian counts are presented on **Figure 4**. As the figure shows, existing bicycle and pedestrian activity at the study intersections is generally low. The traffic counts for existing conditions are provided in **Appendix A**.





XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign

Project Site Study Intersection



Figure 3
Existing Conditions Peak Hour
Intersection Volumes, Lane Configurations and Traffic Controls

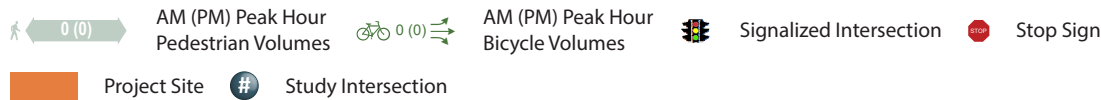
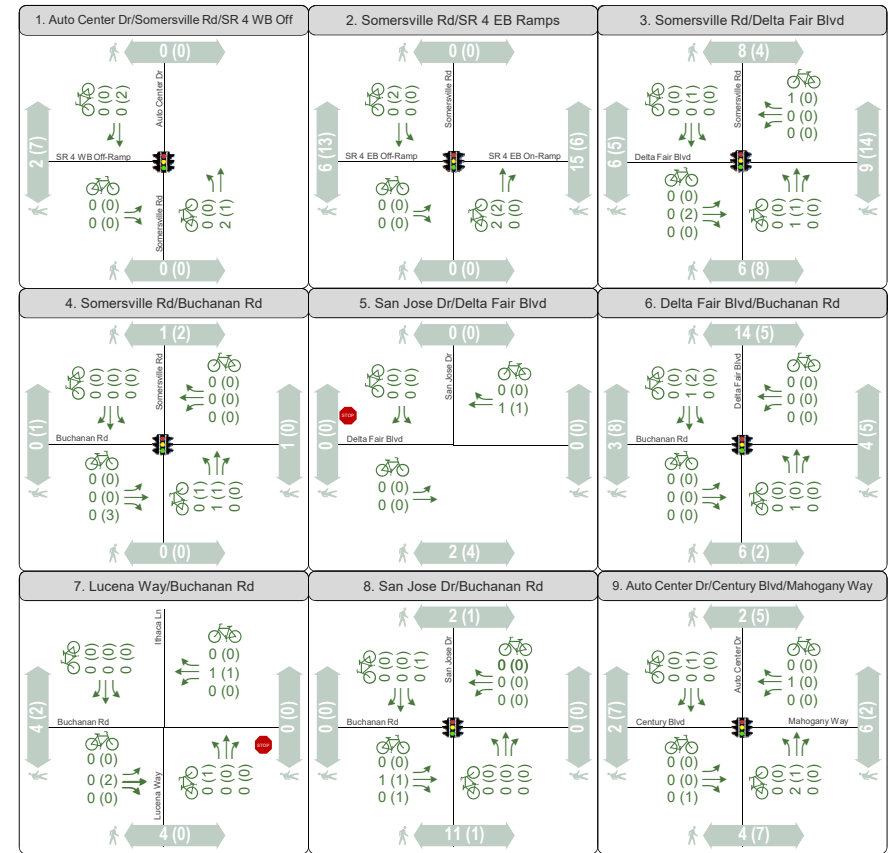
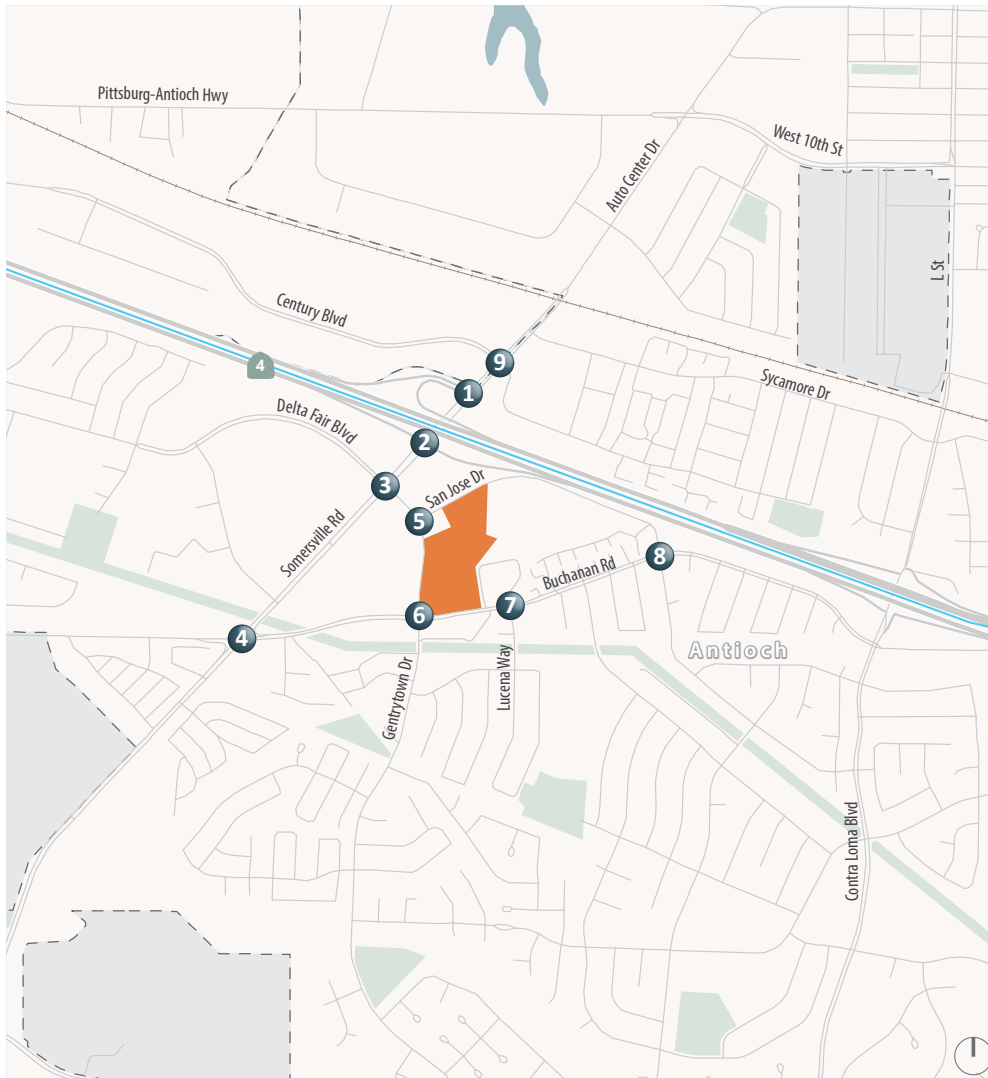


Figure 4
Existing Conditions
Peak Hour Bicycle and Pedestrian Volumes

Existing Intersection Levels of Service

Existing intersection lane configurations, signal timings, and peak hour turning movement volumes were used to calculate the levels of service for the study intersections during each peak hour, using the Synchro 10.0 software program. These levels of service are presented in **Table 3**. Observed peak hour factors¹ were used at all intersections for the existing analysis. Pedestrian and bicycle activity was also factored into the analysis. Detailed intersection LOS calculation worksheets are presented in **Appendix B**. As shown, all signalized and unsignalized intersections currently operate with the level of service standards set by the City of Antioch.

Table 3: Existing Conditions Peak Hour Intersection LOS Summary

Intersection	Control ¹	Peak Hour ²	Delay ³	LOS
1. Somersville Road/Auto Center Drive & SR 4 WB Ramps	Signal	AM PM	22.0 23.0	C C
2. Somersville Road & SR 4 EB Ramps	Signal	AM PM	13.7 27.8	B C
3. Somersville Road & Delta Fair Boulevard	Signal	AM PM	50.5 48.6	D D
4. Somersville Road & Buchanan Road	Signal	AM PM	51.0 28.1	C C
5. Delta Fair Boulevard & San Jose Drive	SSSC	AM PM	2.6 (11.4) 2.5 (11.3)	A (B) A (B)
6. Delta Fair Boulevard & Buchanan Road	Signal	AM PM	21.3 21.2	C C
7. Lucena Way & Buchanan Road	TWSC	AM PM	1.8 (12.5) 0.8 (13.4)	A (B) A (B)
8. San Jose Drive & Buchanan Road	Signal	AM PM	8.5 9.0	A A
9. Autocenter Drive & Century Boulevard/Mahogany Way	Signal	AM PM	25.0 35.4	C D

Notes:

1. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)

2. AM = Weekday morning peak hour, PM = Weekday evening peak hour

3. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, September 2019.

¹ The peak hour factor is the relationship between the peak 15-minute flow rate and the full hourly volume: $PHF = \text{Hourly volume} / (4 \times (\text{volume during the peak 15 minutes of flow}))$. The analysis level of service is based on peak rates of flow occurring within the peak hour because substantial short term fluctuations typically occurring during an hour.



3. Project Characteristics

This chapter provides an overview of the proposed Project components and addresses the proposed project trip generation, distribution, and assignment characteristics, allowing for an evaluation of project impacts on the surrounding roadway network. The amount of traffic associated with the Project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the Project site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the site was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Project Description

The Project site is located on Delta Fair Boulevard in Antioch between San Jose Drive and Buchanan Road as shown on Figure 1. The site is currently developed with an underperforming retail center that would be partially removed with the remaining buildings renovated as part of the Project. The proposed Project would remove 73,550 square feet of existing retail uses and much of the site's southern parking, to be replaced by a 141,440 square foot single story parking garage, with 210 multi-family residential units above the garage. The proposed Project will also develop a new 4,000 square foot retail or daycare building. The remaining existing 73,535 square feet of retail uses would be renovated. The Project site plan is shown on Figure 2.

Vehicular access would occur from San Jose Drive, Delta Fair Boulevard, and Buchanan Road via various existing and proposed driveways as part of the proposed Project.

Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for the daily condition and for the peak one-hour period during the morning and evening commute when traffic volumes on the adjacent streets are typically the highest. Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition).

Trip generation estimates were developed for the proposed Project described on the previous page and are presented in **Table 4**. For a conservative approach on the trip generation, the 4,000 square foot new facility was assumed to be daycare rather than retail.



The Project is expected to generate approximately 2,168 net new daily vehicle trips, including approximately 173 morning peak hour and 184 evening peak hour trips. This includes the trip generating potential of the new retail or day care center and renovated retail center uses, plus the new residential development, less project trips generated by the existing shopping center to be removed. Trip generation for the existing shopping center was determined by conducting turning movement counts at the existing site driveways during AM and PM peak hours.

Information contained in the ITE *Trip Generation Handbook* and surveys of similar uses were used to estimate pass-by trips for the shopping center. For shopping centers of similar size, the pass-by rate ranges from 25 percent to 60 percent; a pass-by rate of 30 percent was assumed to be conservative. In other words, 30 percent of the shopping center traffic entering and exiting the site is already on the surrounding roadway system – not a new vehicle trip to the area. To avoid over-estimation of traffic volumes on the surrounding roadway system, these pass-by trips were subtracted from the trip generation estimates.

It is expected that some proportion of trips generated by the proposed shopping center would have an origin or destination within the residential portion of the development. However, as there are not specific uses proposed, the level of internal trip making is difficult to quantify. A reduction of 5% in trips due to internal trips between land uses was assumed in the trip generation calculations.



Table 4: Trip Generation Summary

Use	Size	Weekday						
		Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Project Trips – Shopping Center								
Shopping Center ¹	73,535 Sq. Ft. GLA	4,877	117	72	189	208	225	433
Day Care Center ²	4,000 Sq. Ft. GLA	199	24	22	46	22	25	47
Less Pass-by Trips ³		-1,460	-27	-30	-57	-62	-68	-130
Less Internal Trips Between Land Uses ⁴		-54	-7	-4	-11	-12	-12	-24
<i>Net-New</i>		3,362	107	60	167	156	170	326
Project Trips - Residential								
Multifamily Housing (Mid-Rise) ⁵	210 dwelling units	1,143	18	53	71	56	35	91
Project Trips – Existing Shopping Center to be Removed								
Shopping Center ⁶	161,000 Sq. Ft. GLA	-2,375	-39	-26	-65	-109	-124	-233
Total New Vehicle Trips		2,168	86	87	173	103	81	184

- ITE land use category 820 – Shopping Center - Attached (Adj Streets, 7-9A, 4-6P):
Daily: $\text{Ln}(T) = 0.68 \text{Ln}(X) + 5.57$
AM Peak Hour: $T = 0.50(X) + 151.78$; Enter = 62%; Exit = 38%
PM Peak Hour: $\text{Ln}(T) = 0.74 \text{Ln}(X) + 2.89$; Enter = 48%; Exit = 52%
 - ITE land use category 565 – Day Care Center - Attached (Adj Streets, 7-9A, 4-6P):
Daily: Average rate of 47.62
AM Peak Hour: Average rate of 11.0; Enter = 53%; Exit = 47%
PM Peak Hour: Average rate of 11.12; Enter = 47%; Exit = 53%
 - Reflects a 30 percent pass-by reduction for shopping center and day care center only trips.
 - Reflects a five percent internal reduction for shopping center.
 - ITE land use category 221 – Multifamily Housing (Mid-Rise) (Adj Streets, 7-9A, 4-6P):
Daily: $T = 5.45 (X) - 1.75$
AM Peak Hour: $\text{Ln}(T) = 0.98 \text{Ln}(X) - 0.98$; Enter = 26%; Exit = 74%
PM Peak Hour: $\text{Ln}(T) = 0.96 \text{Ln}(X) - 0.63$; Enter = 61%; Exit = 39%
 - Existing shopping center trip generation taken from enter and exits from the peak hour turning movement counts.
- Source: *Trip Generation Manual* (10th Edition), ITE, 2017; Fehr & Peers, September 2019.

Project Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of regional project trip distribution were developed based on existing travel patterns in the area, a select zone analysis using the Contra Costa Transportation Authority (CCTA) travel demand model, and the location of complementary land uses. Separate estimates were developed for the residential and commercial portions of the Project as they are likely to have different trip



distribution patterns. Separate trip distribution estimates were developed for the Cumulative Scenario when the James Donlon Extension is assumed to be complete. The resulting trip distribution percentages are shown on **Figure 5A** and **5B**. Project trips were then assigned to the roadway network for each of the Project alternatives, as shown on **Figure 6A** for the existing and near-term roadway network and **Figure 6B** for the cumulative roadway network.



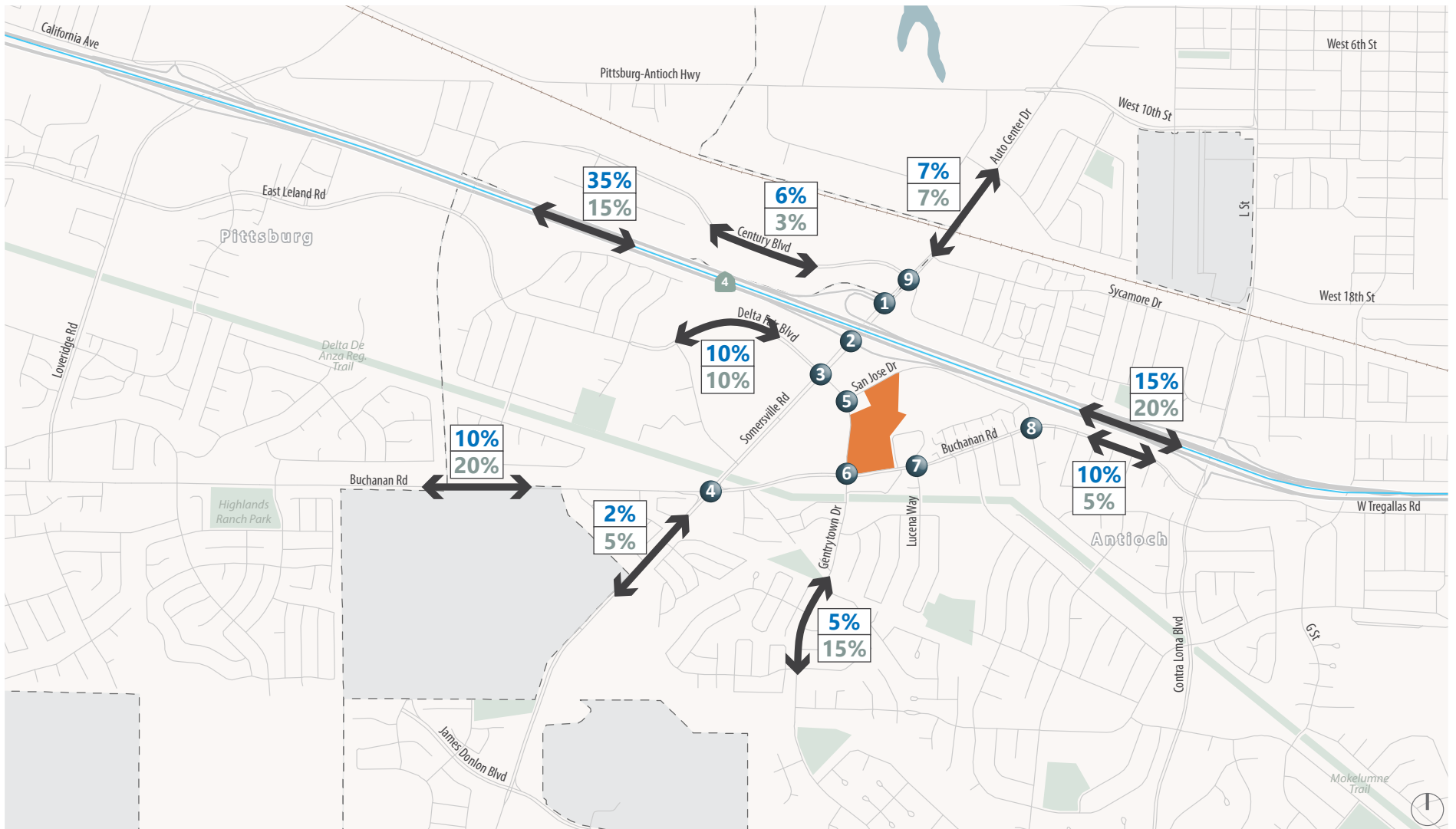


Figure 5A

Existing and Near-Term Project Trip Distribution



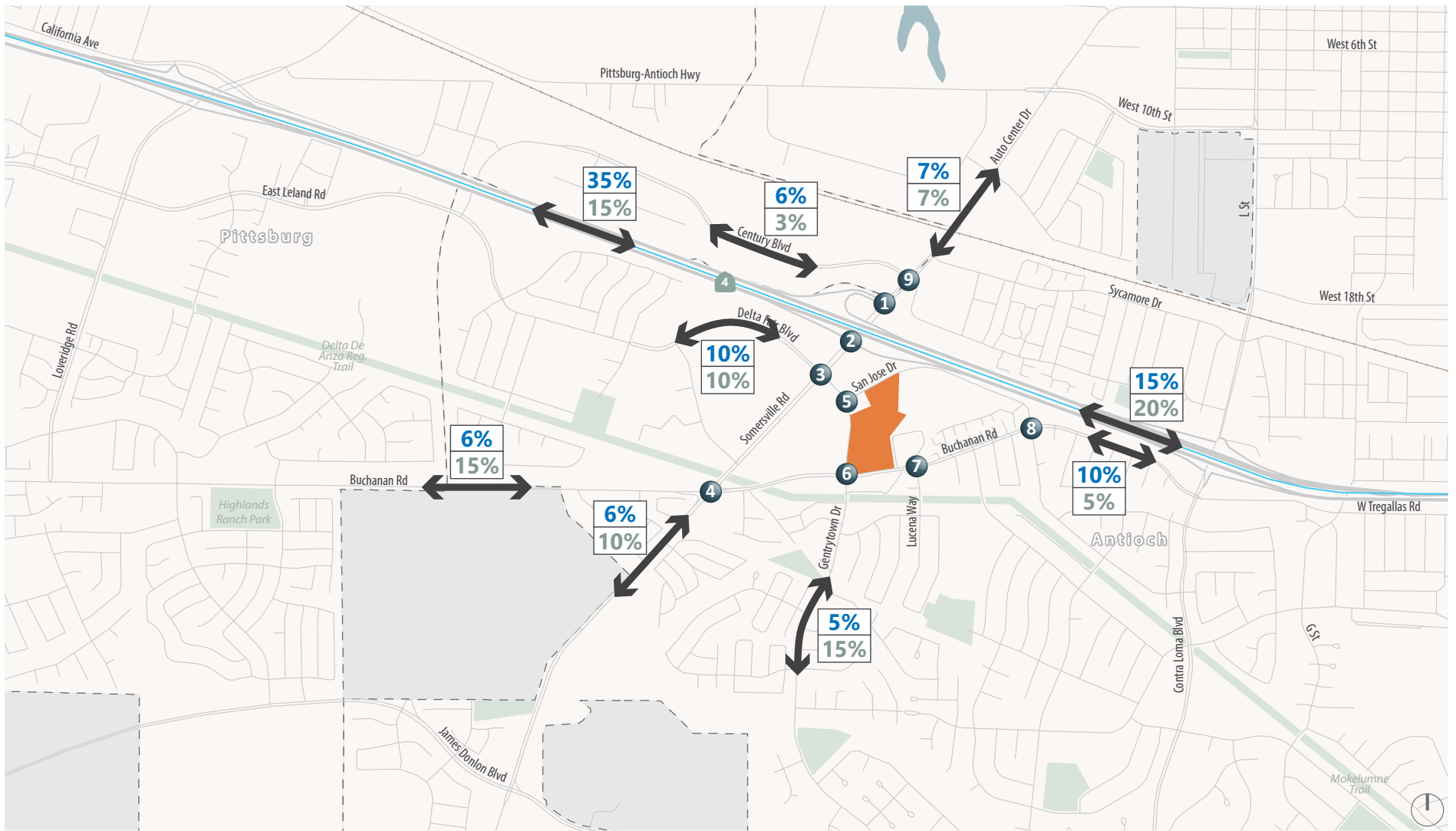
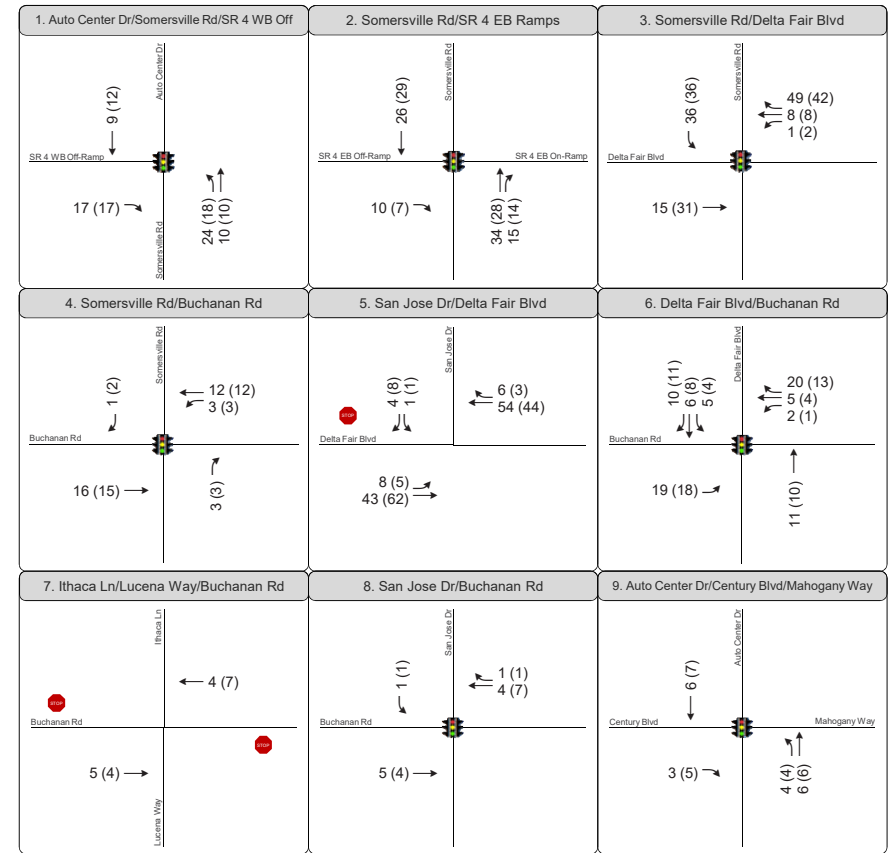
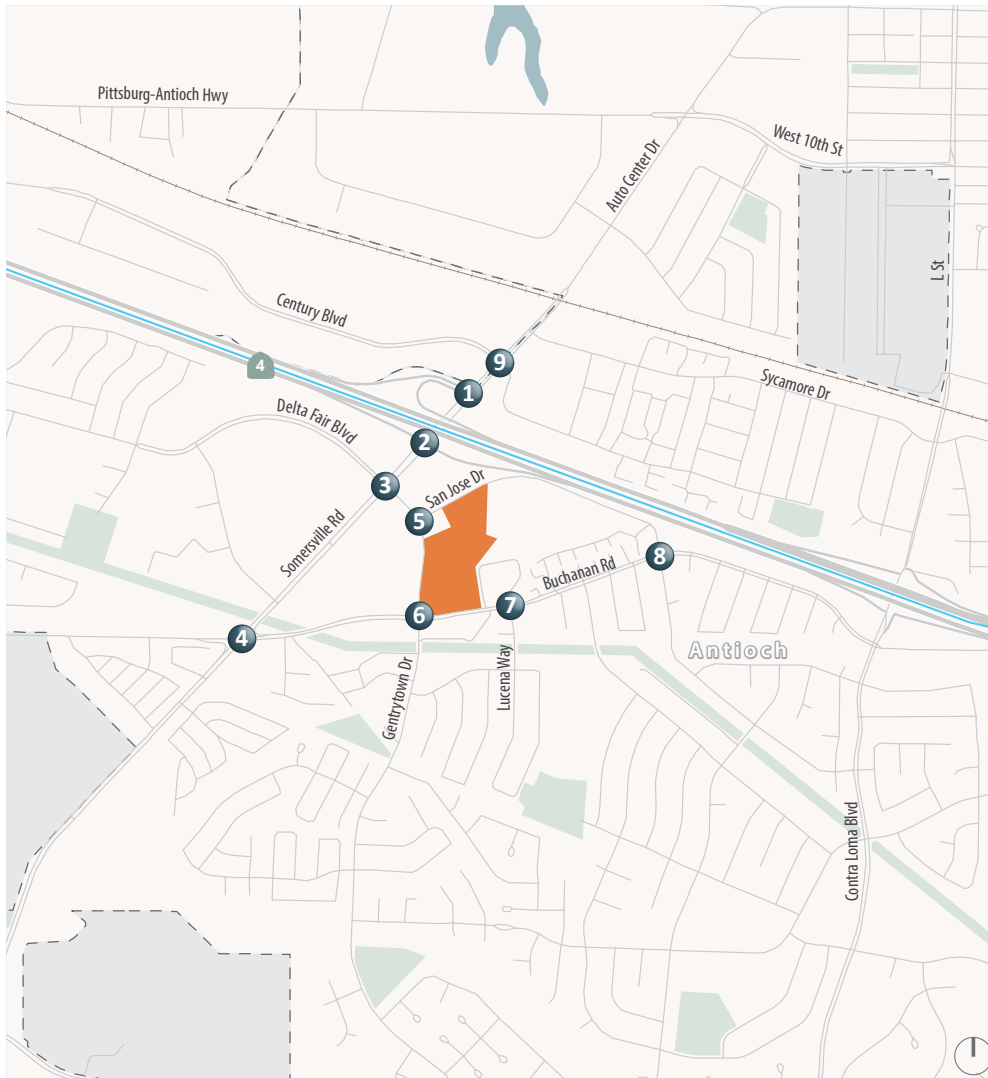


Figure 5B

Cumulative Project Trip Distribution





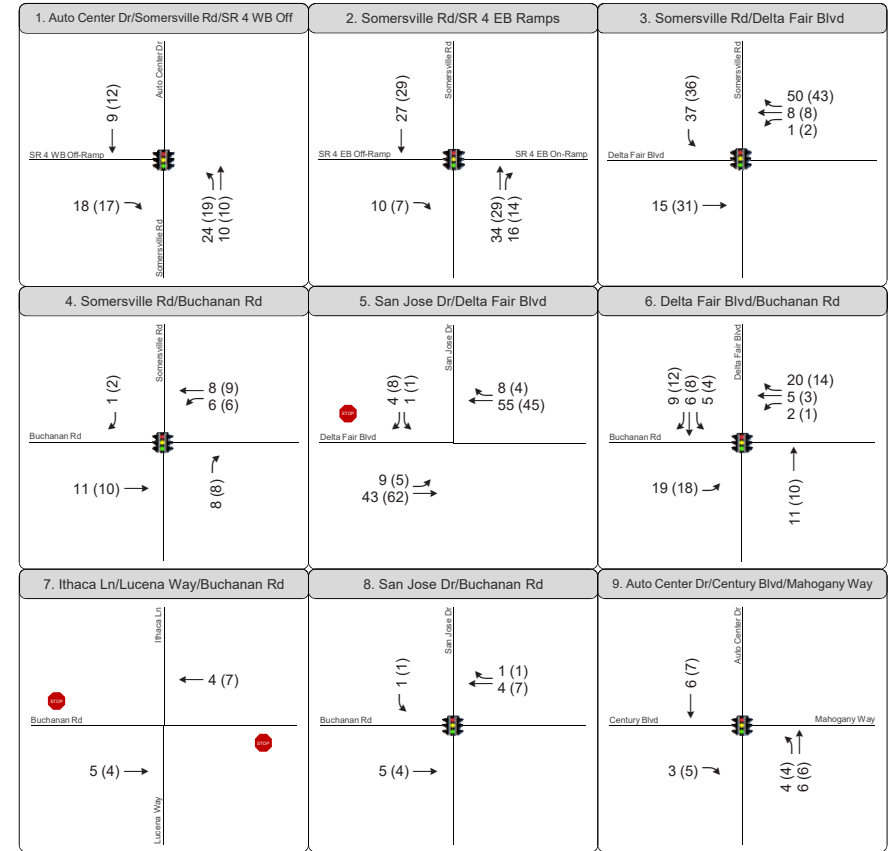
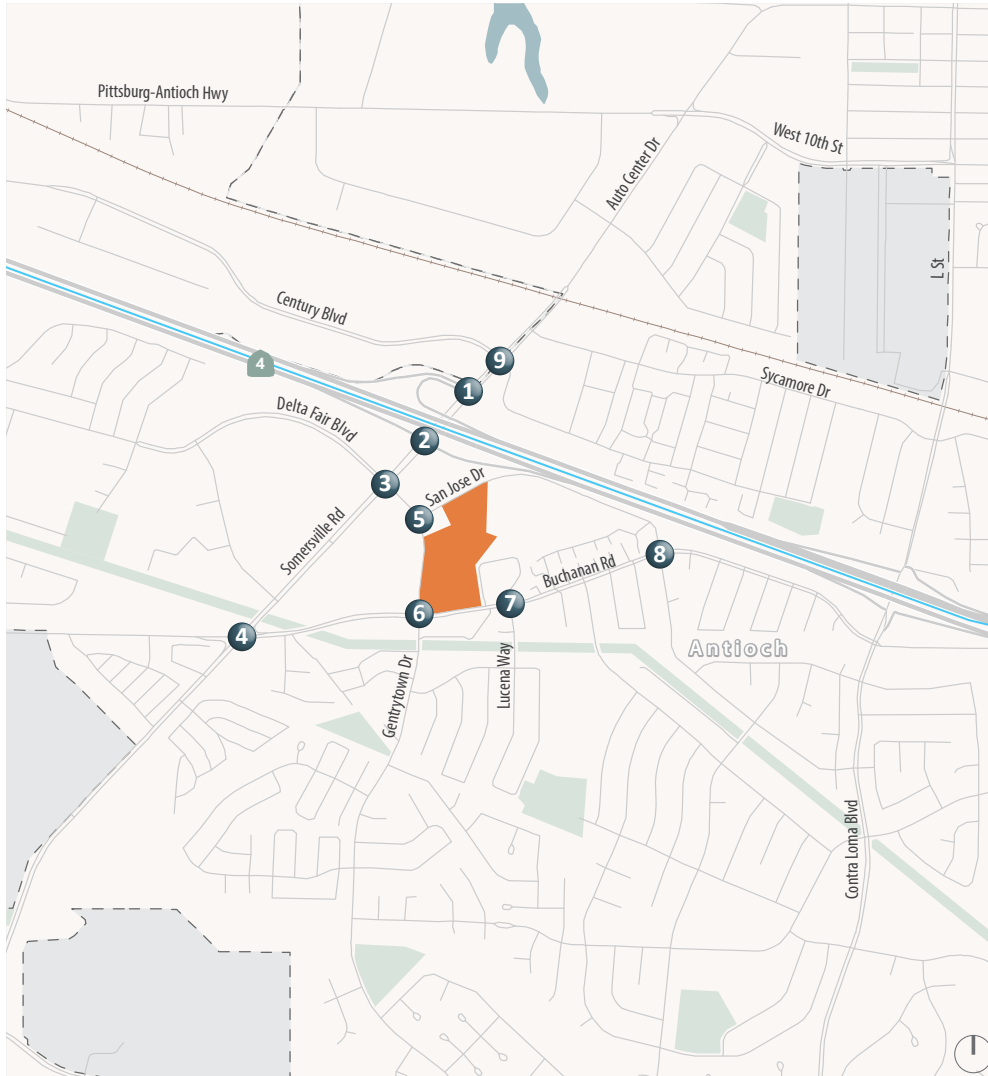
XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign

Project Site Study Intersection



Figure 6A

Existing and Near-Term Project Trip Assignment



XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign

Project Site Study Intersection



Figure 6B

Cumulative Project Trip Assignment

4. Existing With Project Traffic Conditions

This chapter evaluated potential off-site impacts under Existing with Project conditions.

Existing with Project Traffic Volumes

The Project traffic volumes on Figure 6A were added to the existing traffic volumes from Figure 3 to estimate the Existing with Project traffic volumes, as shown on **Figure 7**. An assessment of site access is provided in the site plan review.

Analysis of Existing With Project Conditions

Intersection Operations

Existing with Project intersections were evaluated using the methods described in Chapter 1. The Existing with Project analysis results are presented in **Table 5**, based on the traffic volumes and intersection configurations presented on Figure 7. Table 5 also includes the operations results for Existing conditions. The addition of project traffic would increase delay at the signalized and unsignalized study intersections. No signalized and unsignalized intersections that are currently operating within the City's level of service standard are projected to degrade beyond the established level of service standard with the addition of project traffic in the existing condition.



Table 5: Existing with Project Conditions Peak Hour Intersection LOS Summary

Intersection	Control ¹	Peak Hour ²	Existing		Existing with Project	
			Delay ³	LOS	Delay ³	LOS
1. Somersville Road/Auto Center Drive & SR 4 WB Ramps	Signal	AM PM	22.0 23.0	C C	22.1 23.7	C C
2. Somersville Road & SR 4 EB Ramps	Signal	AM PM	13.7 27.8	B C	13.7 28.0	B C
3. Somersville Road & Delta Fair Boulevard	Signal	AM PM	50.5 48.6	D D	50.9 49.1	D D
4. Somersville Road & Buchanan Road	Signal	AM PM	51.0 28.1	C C	51.7 28.5	D C
5. Delta Fair Boulevard & San Jose Drive	SSSC	AM PM	2.6 (11.4) 2.5 (11.3)	A (B) A (B)	2.6 (11.8) 2.5 (11.7)	A (B) A (B)
6. Delta Fair Boulevard & Buchanan Road	Signal	AM PM	21.3 21.2	C C	22.7 22.2	C C
7. Lucena Way & Buchanan Road	TWSC	AM PM	1.8 (12.5) 0.8 (13.4)	A (B) A (B)	1.8 (16.6) 0.7 (13.5)	A (C) A (B)
8. San Jose Drive & Buchanan Road	Signal	AM PM	8.5 9.0	A A	8.6 9.2	A A
9. Autocenter Drive & Century Boulevard/Mahogany Way	Signal	AM PM	25.0 35.4	C D	25.0 35.7	C D

Notes:

- Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)
- AM = Weekday morning peak hour, PM = Weekday evening peak hour
- Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

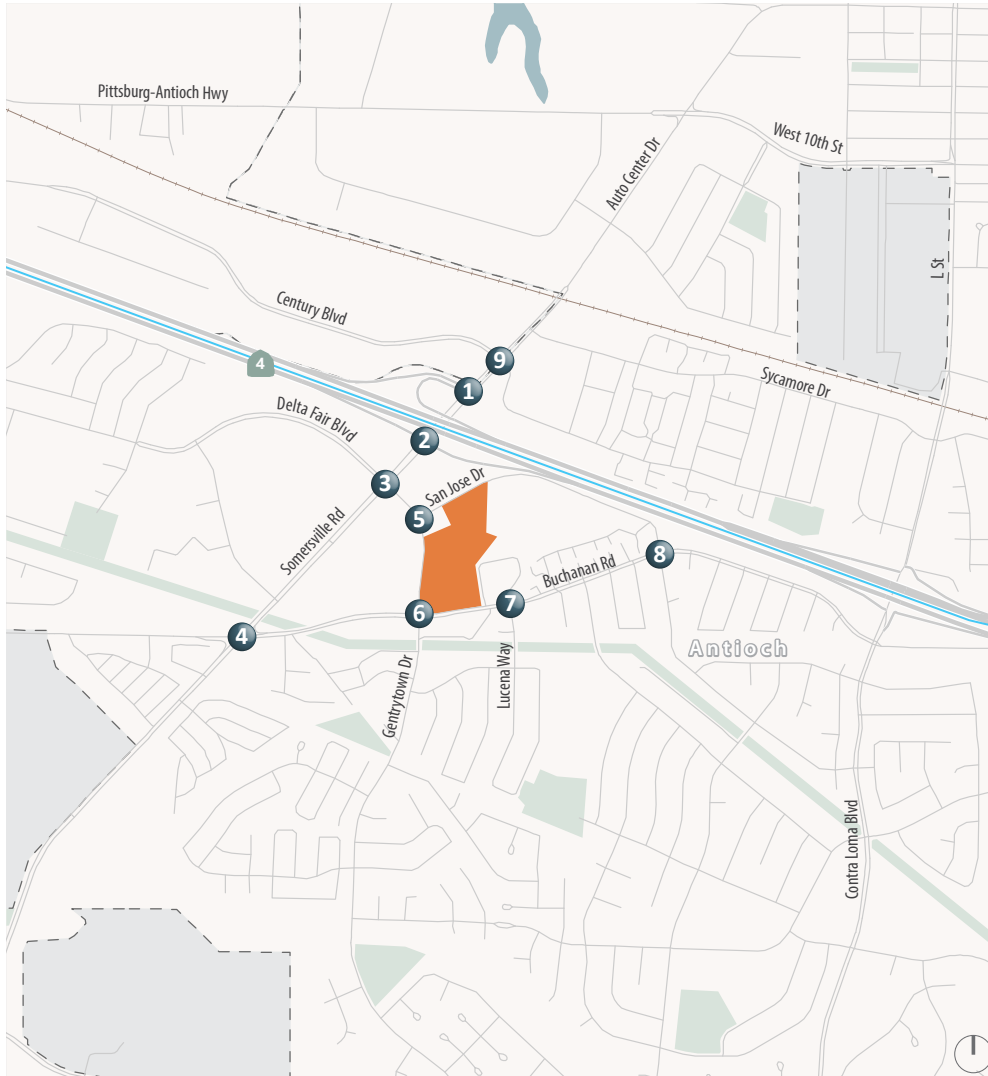
Bold indicates unacceptable operations.

Source: Fehr & Peers, September 2019.

Existing Conditions Impacts and Mitigation

Off-site intersection impacts of the proposed Project were found to be less-than-significant in the Existing with Project condition based on the significance criteria.





1. Auto Center Dr/Somersville Rd/SR 4 WB Off	2. Somersville Rd/SR 4 EB Ramps	3. Somersville Rd/Delta Fair Blvd
<p>Auto Center Dr SR 4 WB Off-Ramp Somersville Rd</p> <p>204 (367) 525 (1,063)</p> <p>394 (445) 512 (590)</p> <p>284 (340) 629 (947)</p>	<p>Somersville Rd SR 4 EB Off-Ramp SR 4 EB On-Ramp</p> <p>833 (1,002) 204 (651)</p> <p>225 (403) 309 (572)</p> <p>688 (884) 497 (698)</p>	<p>Somersville Rd Delta Fair Blvd</p> <p>390 (348) 446 (663) 301 (563)</p> <p>406 (408) 222 (159) 49 (44)</p> <p>281 (480) 121 (240) 16 (37)</p> <p>57 (61) 478 (646) 6 (27)</p>
4. Somersville Rd/Buchanan Rd	5. San Jose Dr/Delta Fair Blvd	6. Delta Fair Blvd/Buchanan Rd
<p>Somersville Rd Buchanan Rd</p> <p>183 (302) 164 (386) 46 (123)</p> <p>80 (64) 240 (176) 31 (44)</p> <p>257 (311) 133 (363) 131 (401)</p> <p>301 (244) 352 (216) 20 (17)</p>	<p>San Jose Dr Delta Fair Blvd</p> <p>157 (147) 5 (17)</p> <p>11 (24) 523 (431)</p> <p>88 (153) 280 (584)</p>	<p>Delta Fair Blvd Buchanan Rd</p> <p>22 (37) 131 (390) 63 (187)</p> <p>159 (130) 302 (216) 79 (59)</p> <p>43 (72) 135 (310) 28 (109)</p> <p>88 (73) 365 (254) 73 (31)</p>
7. Ithaca Ln/Lucena Way/Buchanan Rd	8. San Jose Dr/Buchanan Rd	9. Auto Center Dr/Century Blvd/Mahogany Way
<p>Ithaca Ln Buchanan Rd Lucena Way</p> <p>1 (2) 0 (0) 2 (0)</p> <p>1 (0) 464 (367) 30 (25)</p> <p>0 (1) 258 (506) 7 (27)</p> <p>26 (12) 0 (0) 69 (22)</p>	<p>San Jose Dr Buchanan Rd</p> <p>26 (16) 18 (23) 57 (100)</p> <p>85 (86) 372 (306) 2 (9)</p> <p>15 (7) 258 (389) 8 (24)</p> <p>17 (15) 37 (18) 12 (9)</p>	<p>Auto Center Dr Century Blvd Mahogany Way</p> <p>107 (106) 433 (789) 23 (22)</p> <p>35 (30) 42 (62) 185 (217)</p> <p>78 (213) 22 (74) 90 (367)</p> <p>214 (457) 626 (694) 183 (251)</p>

XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection



Figure 7
 Existing with Project Conditions Peak Hour
 Intersection Volumes, Lane Configurations and Traffic Controls

5. Near-Term Traffic Conditions

This chapter discusses near-term traffic conditions both without and with the Project. The near-term conditions analysis considers approved projects within the study area that are expected to be constructed and occupied in the next five to ten years.

Near-Term Roadway Assumptions

No roadway improvements were assumed at any of the study intersections for the analysis of near-term conditions. The analysis of cumulative conditions (see Chapter 6 for details) considers development within the City of Antioch as described in the General Plan and approved General Plan Amendment.

Near-Term Forecasts

The near-term scenario reflects existing traffic counts plus traffic from approved and pending developments. Therefore, the near-term condition represents the likely traffic levels at the time of project completion. The latest project lists from the City of Antioch Project Pipeline (January 2019), and the City of Pittsburg Current Project Pipeline Map (accessed May 2019) were used to determine approved and pending developments to be incorporated. Based on a review of the list, several developments were identified that could generate additional traffic through the study area. These proposed developments are listed in **Table 6**, and their locations are shown on **Figure 8**.

Near-Term project vehicle trip generation was estimated using trip generation rates and equations for the proposed land uses from ITE's *Trip Generation Manual* (10th Edition). The results are provided in **Appendix C**. Traffic generated by approved and pending developments was added to the existing traffic volumes, which were also increased by 5 percent to account for traffic growth from projects outside the immediate study area, to provide the basis for the Near-Term without Project analysis, as presented on **Figure 9**. Project traffic was added to the Near-Term without Project forecasts to estimate Near-Term with Project volumes, as presented on **Figure 10**.

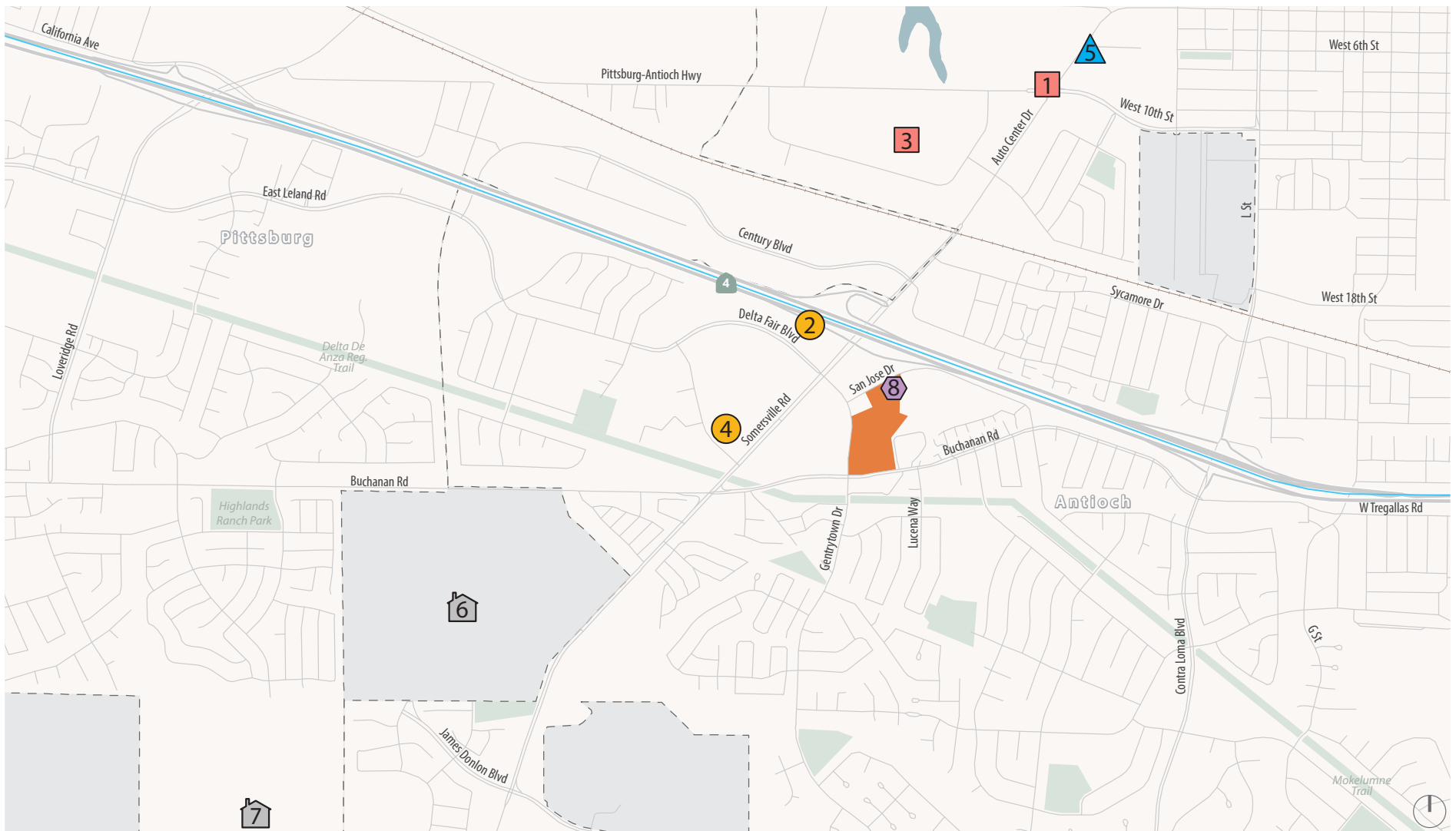


Table 6: Approved and Pending Projects

Map Location	Project Name	Project Address	Size	Land Use	Status
1	Arco AM/PM Gas Station and Car Wash	1800 West 10 th St, Antioch CA	18 Pumps 3,180 Square Foot (SF) Convenience Store 1 Tunnel Car Wash	Retail	Under Construction
2	Delta Bowl Addition and Remodels	3300 Delta Fair Blvd, Antioch CA	1,500 SF Arcade 16 Player Laser Tag 400 SF Party Room	Commercial	Under Construction
3	Granite Expo	1888 Verne Roberts Circle, Antioch CA	Remodel Exterior 11,836 SF Showroom 20,920 SF Wholesale Business	Retail	Under Construction
4	Buchanan Crossings Shops Building E	3140 Buchanan Road, Antioch CA	3,164 SF Drive Thru 4,339 SF Drive Thru 5,000 SF Retail	Commercial	Approved
5	Tri Delta Park & Ride	West 6 th St & Auto Center Dr, Antioch CA	186 Parking Spaces	Park-and-Ride Lot	Approved
6	Tuscany Meadows Residential Subdivision	Buchanan Road at Somersville Road, Pittsburg CA	917 Dwelling Units 375 Dwelling Units	Signal Family Homes Multi-Family Units	Approved
7	Sky Ranch II	South of Buchanan Road, West of Somersville Road, Pittsburg CA	415 Dwelling Units	Signal Family Homes	Approved
8	The City of the Lord Zion Church and School	2710 Delta Fair Boulevard, Suite A&B, Antioch CA	4,700 SF Church 9,300 SF Preschool and Daycare	Institutional	Under Review

Source: City of Antioch Development Project Pipeline, January 2019, City of Pittsburg Project Pipeline (Accessed May 7, 2019)



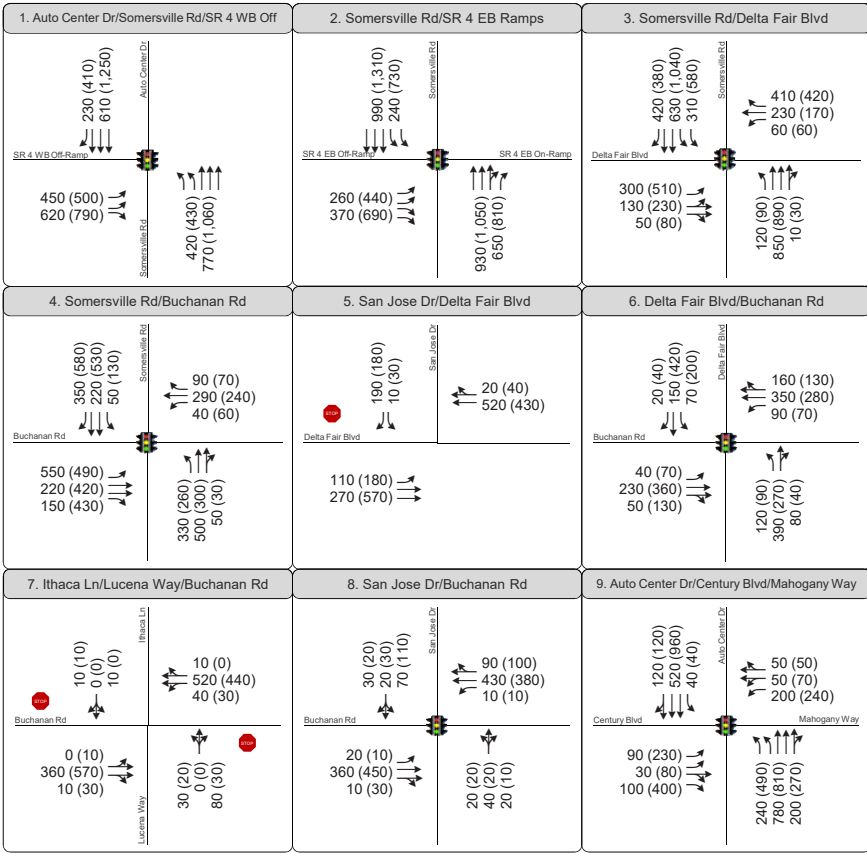
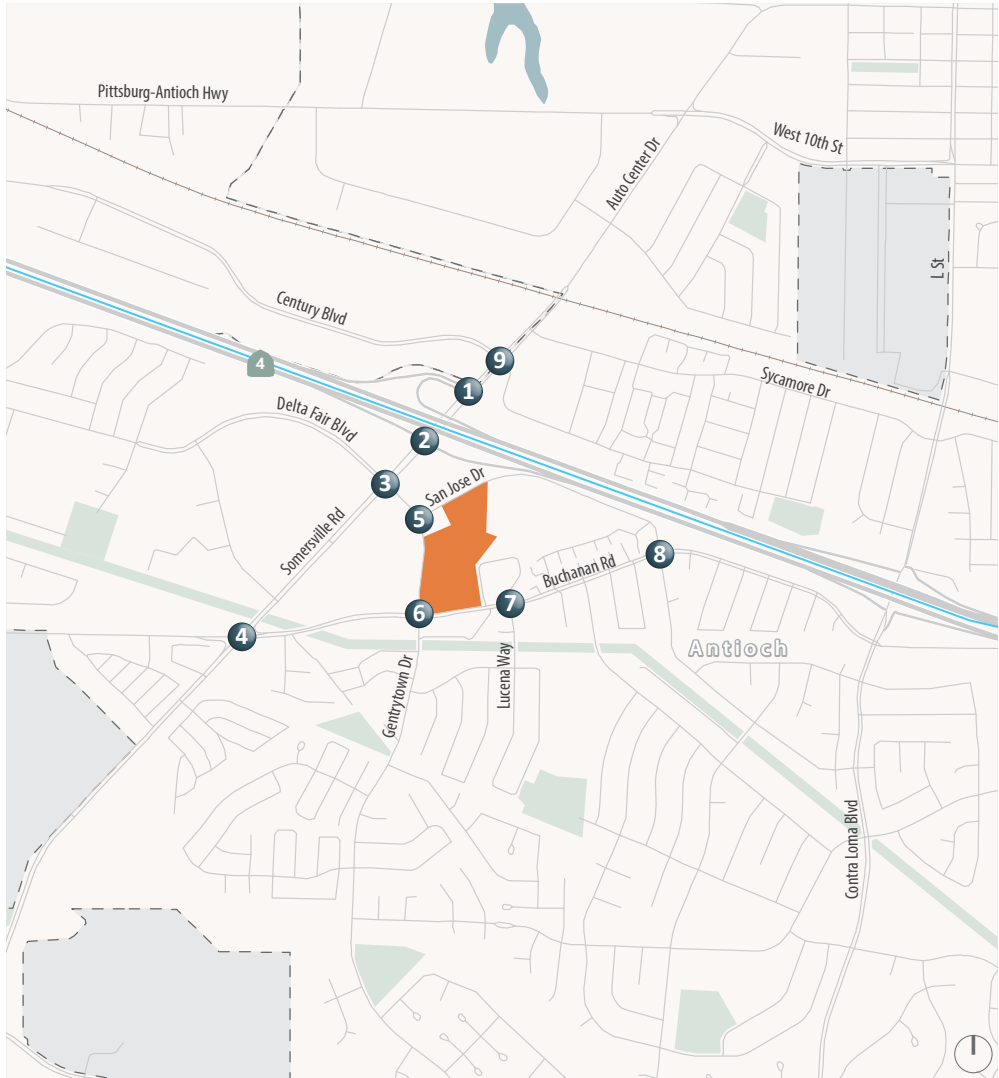


- Project Site
- # Retail Project
- # Park-and-Ride Lot Project
- # Single Family Home Project
- # Commercial Project
- # Institutional Project

Figure 8

Approved and Pending Project Locations

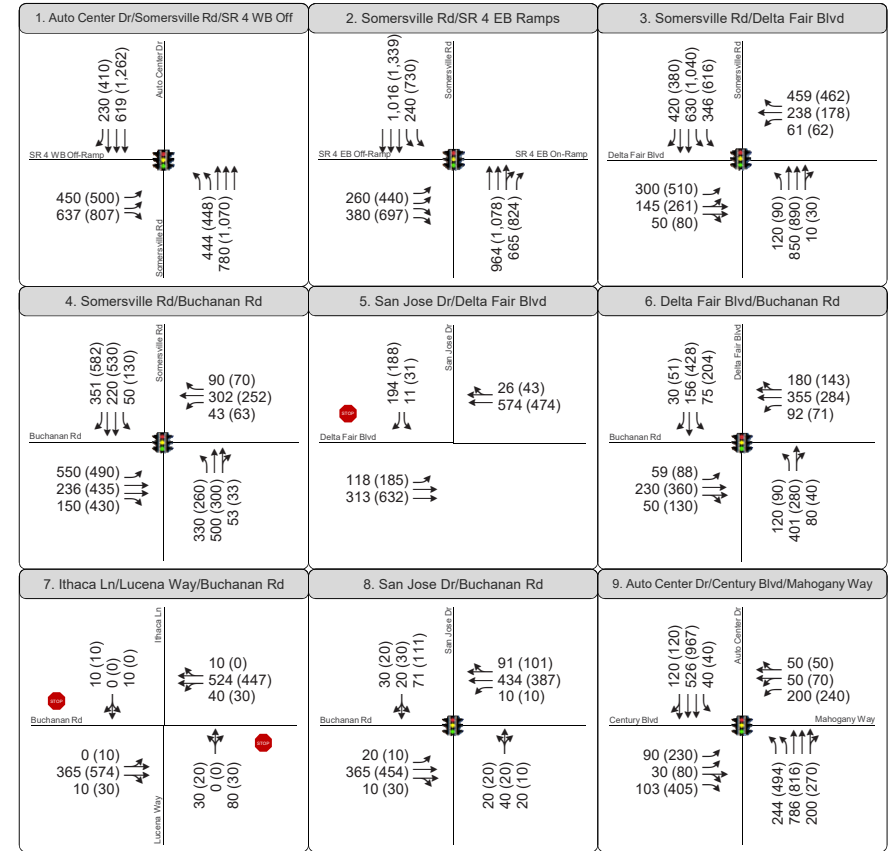
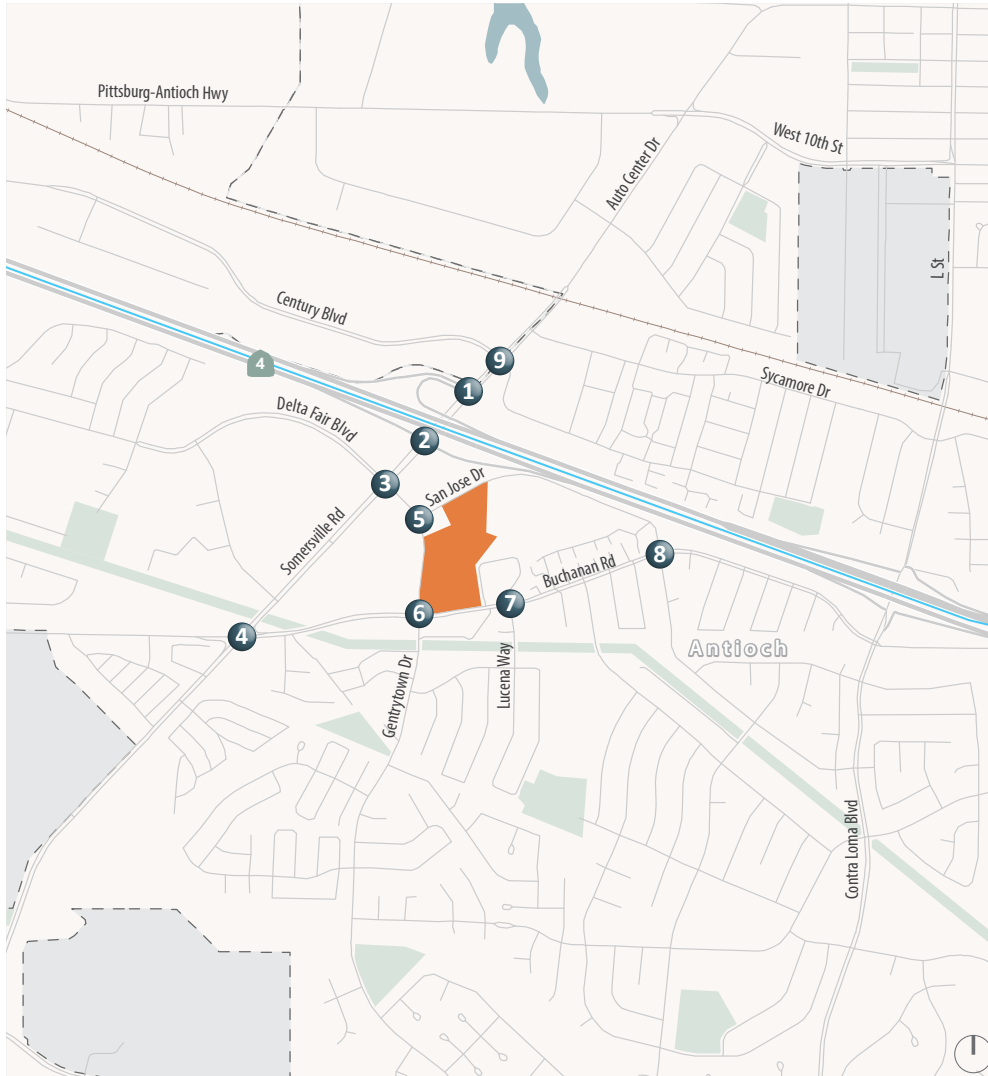




XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection



Figure 9
 Near-Term without Project Conditions Peak Hour
 Intersection Volumes, Lane Configurations and Traffic Controls



XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign

Project Site Study Intersection



Figure 10
Near-Term with Project Conditions Peak Hour
Intersection Volumes, Lane Configurations and Traffic Controls

Analysis of Near-Term Conditions

Intersection Operations

Near-Term without and with Project conditions were evaluated using the same methods described in Chapter 1. The analysis results are presented in **Table 7**, based on the traffic volumes and lane configurations presented on Figure 9 and Figure 10. In the near-term condition, Somersville Road at Buchanan Road would operate at deficient levels.

Table 7: Near-Term Conditions Peak Hour Intersection LOS Summary

Intersection	Control ¹	Peak Hour ²	Near-Term Without Project		Near-Term With Project	
			Delay ³	LOS	Delay ³	LOS
1. Somersville Road/Auto Center Drive & SR 4 WB Ramps	Signal	AM PM	25.1 37.6	C C	25.6 39.9	C D
2. Somersville Road & SR 4 EB Ramps	Signal	AM PM	15.3 30.2	B C	15.6 30.5	B C
3. Somersville Road & Delta Fair Boulevard	Signal	AM PM	51.0 50.8	D D	51.9 51.7	D D
4. Somersville Road & Buchanan Road	Signal	AM PM	136.6 67.8	F E	137.9 69.3	F E
5. Delta Fair Boulevard & San Jose Drive	SSSC	AM PM	3.1 (13.0) 2.5 (11.5)	A (B) A (B)	3.1 (13.2) 3.0 (13.6)	A (B) A (B)
6. Delta Fair Boulevard & Buchanan Road	Signal	AM PM	25.2 23.8	C C	28.2 25.0	C C
7. Lucena Way & Buchanan Road	TWSC	AM PM	2.3 (18.8) 1.2 (16.5)	A (C) A (C)	2.3 (18.9) 1.2 (16.6)	A (C) A (C)
8. San Jose Drive & Buchanan Road	Signal	AM PM	9.1 9.6	A A	9.4 9.7	A A
9. Autocenter Drive & Century Boulevard/Mahogany Way	Signal	AM PM	25.1 36.6	C D	25.9 37.2	C D

Notes:

- Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)
- AM = Weekday morning peak hour, PM = Weekday evening peak hour
- Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, September 2019.

With the addition of project traffic, operations of the deficient intersection would further degrade. All other study intersections would operate at acceptable service levels with the addition of project traffic.

Near-Term Conditions Impact and Mitigation

One intersection is projected to operate deficiently in the near-term condition prior to the addition of project traffic:



- Somersville Road at Buchanan Road – LOS F in the AM Peak Hour and LOS E in the PM Peak Hour

Impact Statement 1: The Somersville Road at Buchanan Road intersection is projected to operate at LOS F during the AM peak hour, and LOS E during the PM peak hour in the near-term condition. The addition of project traffic would increase delay by 1.3 seconds (136.6 seconds without project to 137.9 seconds with project) in the AM peak hour and 1.5 seconds (67.8 seconds without project to 69.3 seconds with project) in the PM peak hour. Based on the significance criteria, this is considered a **significant** adverse impact. The addition of project traffic would worsen operations within a failing condition.

As specified in the final EIR for the Tuscany Meadows Project dated July 2015 (City of Pittsburg), mitigations are proposed at this intersection to maintain established operational standards with the development of currently approved projects. The mitigation measure identified the conversion of an eastbound through lane to an eastbound through-left turn lane to allow for dual left turn movement onto northbound Somersville Road and an additional northbound lane to allow for a dual left turn movement onto westbound Buchanan Road. With implementation of the mitigation, the intersection would operate within acceptable standards based on the City of Antioch Standards, reducing the project impact to a **less-than-significant**, as shown in **Table 8**.

Mitigation Measure 1: Prior to issuance of building permits the applicant shall initiate construction and prior to occupancy of the first unit the applicant shall complete construction of dual northbound left turn lanes on Somersville Road onto Buchanan Road and conversion of an eastbound through lane to a through-left-turn lane to the satisfaction of the City Engineer. A portion of the improvements will be eligible for reimbursement.

Table 8: Near-Term Conditions Peak Hour Intersection LOS Summary with Mitigation

Intersection	Control ¹	Peak Hour	Near-Term Without Project		Near-Term with Project		Near-Term with Project with Mitigation	
			Delay ³	LOS	Delay ³	LOS	Delay ³	LOS
3. Somersville Road & Buchanan Road	Signal	AM	136.6	F	137.9	F	52.5	D
		PM	67.8	E	69.3	E	50.5	D

Notes:

1. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled)

2. AM = Weekday morning peak hour, PM = Weekday evening peak hour

3. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, September 2019.



6. Cumulative Traffic Conditions

This chapter discusses Cumulative traffic conditions both without and with the Project. The future conditions analysis considers development within the City of Antioch as described in the General Plan.

Cumulative Traffic Forecasts

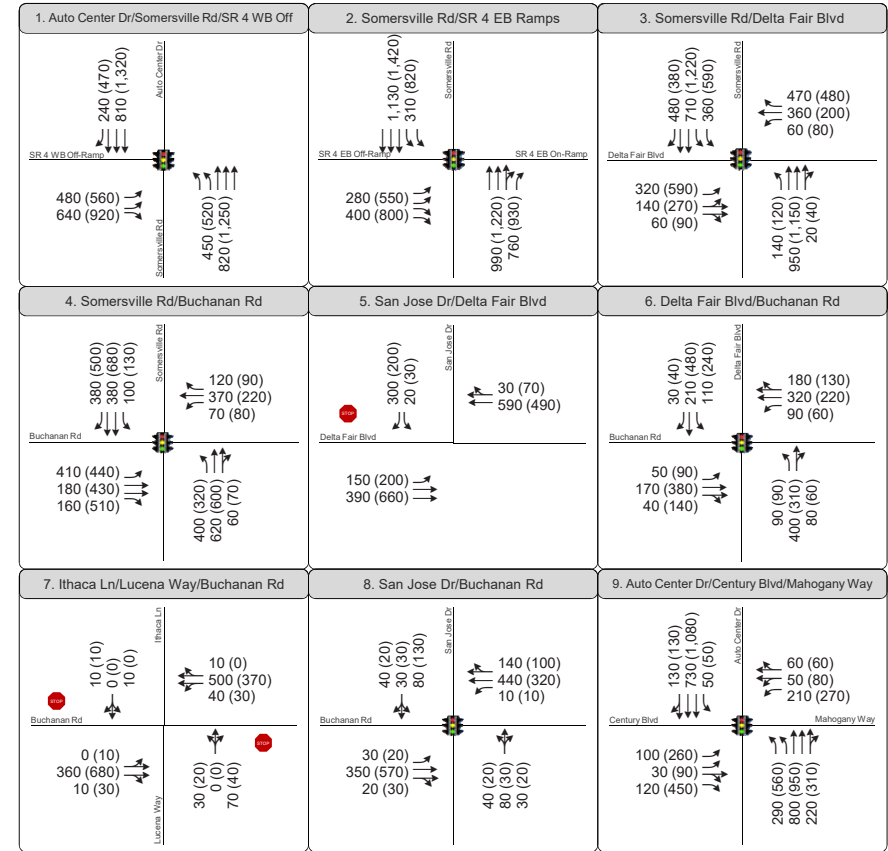
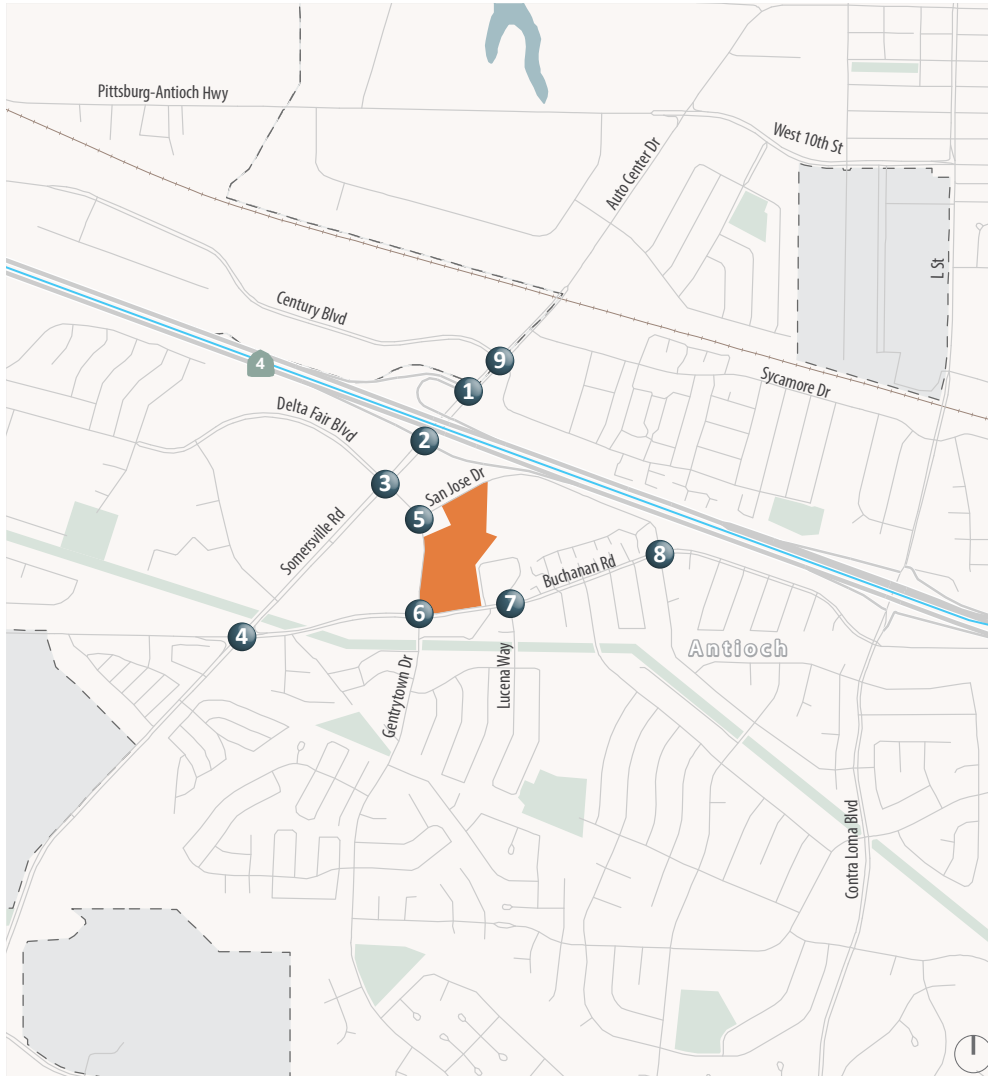
To assess future growth with planned development in the City of Antioch, several sources of data were reviewed, including the Contra Costa County Travel Demand Model (CCTA Model), and the traffic growth trends as described in the Antioch General Plan EIR. Traffic forecasts within the immediate study area were reviewed to ensure that known developments were adequately reflected in the forecasts, such as the Tuscany Meadows project located on the south side of Buchanan Road and just west Somersville Road in the City of Pittsburg. Minor adjustments were made to the forecasts to balance traffic volumes between closely spaced intersections in the study area. The resulting Cumulative without project forecasts are presented on **Figure 11**, which are representative of conditions over the next 20 to 25 years. The Project volumes from **Figure 6B** were added to the Cumulative without Project traffic volumes to represent Cumulative with project conditions, as presented on **Figure 12**.

Cumulative Roadway Assumptions

An important planned roadway improvement in the area is the propose James Donlon Boulevard Extension. The extension will start at Somersville Road and extend to Kirker Pass Road. The proposed roadway would merge from a four-lane road to a two-lane road and would be designed for vehicles traveling up to 55 miles per hour. The volumes presented on Figure 12 reflect that in the cumulative scenario, when the James Donlon extension is expected to be constructed. The assumed lane configurations are shown on Figure 11 and Figure 12.

Vehicle traffic generated by the proposed Project would contribute to the need for local and regional roadway improvements. The Project would contribute to the construction of regional roadway improvements through the payment of regional transportation impact fees to the East Contra Costa Regional Fee and Financing Authority (ECCRFFA).



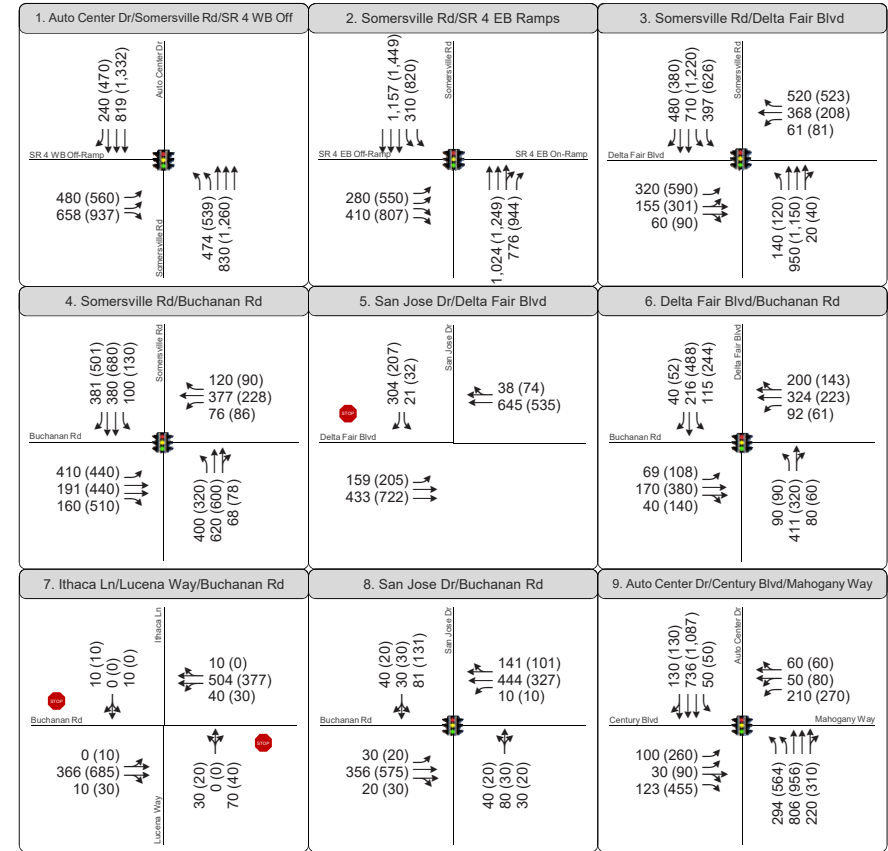
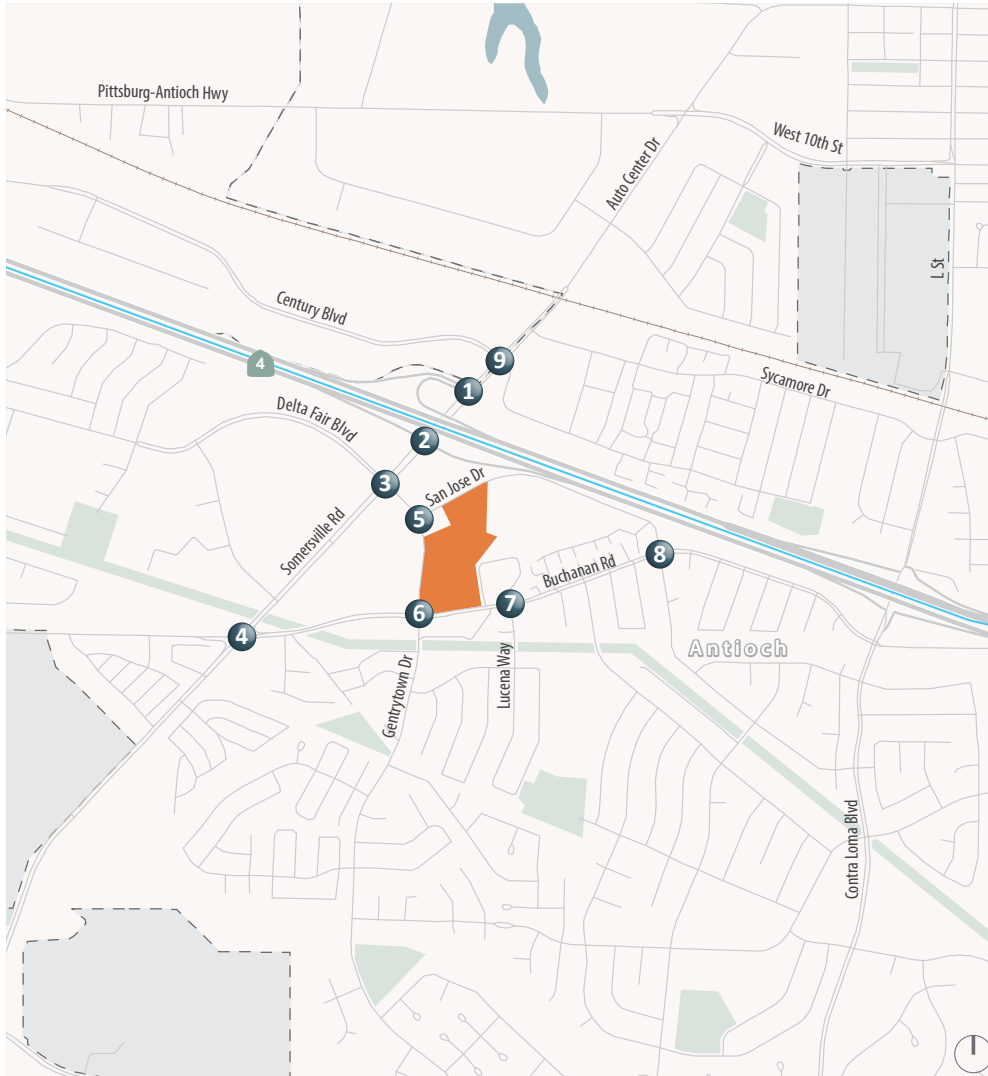


XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign

Project Site Study Intersection



Figure 11
Cumulative without Project Conditions Peak Hour
Intersection Volumes, Lane Configurations and Traffic Controls



XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign

Project Site Study Intersection



Figure 12
Cumulative with Project Conditions Peak Hour
Intersection Volumes, Lane Configurations and Traffic Controls

Analysis of Cumulative Conditions

Intersection Operations

Cumulative without and with Project conditions were evaluated using the methods described in Chapter 1. The analysis results are presented in **Table 9**, based on traffic volumes presented on Figure 11 and Figure 12. Three intersections are projected to operate at deficient levels in the cumulative conditions prior to the addition of project traffic:

- Somersville Road/Auto Center Drive at State Route 4 Westbound Ramps – LOS E in the PM Peak Hour
- Somersville Road at Delta Fair Boulevard – LOS E in the AM peak Hour and LOS E in the PM Peak Hour
- Somersville Road at Buchanan Road – LOS F in the AM Peak Hour and LOS E in the PM Peak Hour

Table 9: Cumulative Conditions Peak Hour Intersection LOS Summary

Intersection	Control ¹	Peak Hour ²	Cumulative Without Project		Cumulative With Project	
			Delay ³	LOS	Delay ³	LOS
1. Somersville Road/Auto Center Drive & SR 4 WB Ramps	Signal	AM PM	27.1 56.4	C E	29.6 59.4	C E
2. Somersville Road & SR 4 EB Ramps	Signal	AM PM	17.2 39.7	B D	17.4 40.6	B D
3. Somersville Road & Delta Fair Boulevard	Signal	AM PM	58.0 65.8	E E	59.3 68.3	E E
4. Somersville Road & Buchanan Road	Signal	AM PM	87.4 55.5	F E	88.3 56.5	F E
5. Delta Fair Boulevard & San Jose Drive	SSSC	AM PM	4.4 (16.0) 3.0 (13.3)	A (C) A (B)	4.5 (17.4) 3.0 (14.0)	A (C) A (B)
6. Delta Fair Boulevard & Buchanan Road	Signal	AM PM	28.4 27.5	C C	30.8 28.2	C C
7. Lucena Way & Buchanan Road	TWSC	AM PM	2.2 (18.1) 1.4 (17.3)	A (C) A (C)	2.2 (18.2) 1.4 (17.5)	A (C) A (C)
8. San Jose Drive & Buchanan Road	Signal	AM PM	10.4 10.2	B B	10.4 10.2	B B
9. Autocenter Drive & Century Boulevard/Mahogany Way	Signal	AM PM	29.2 41.9	C D	29.2 42.2	C D

Notes:

1. Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled, TWSC = Two-Way Stop-Controlled)

2. AM = Weekday morning peak hour, PM = Weekday evening peak hour

3. Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, September 2019.



The addition of project traffic would increase delay, resulting in potentially significant impacts at Somersville Road/Auto Center Drive at SR 4 Westbound Ramps, Somersville Road at Delta Fair Boulevard and Somersville Road at Buchanan Road.

Vehicle queues are expected to increase at study intersections as traffic volumes increase, which would further increase with the addition of Project traffic. Monitoring and adjusting traffic signal timings in response to actual traffic volumes to minimize the potential for vehicle queue spillback is recommended.

Cumulative Conditions Impact and Mitigation

Potential off-site intersection impacts were identified in the Cumulative condition.

Impact Statement 2: The Somersville Road/Auto Center Drive at SR 4 Westbound Ramps intersection is projected to operate at LOS E during the PM peak hour. The addition of project traffic would increase delay by 3 seconds (56.4 seconds without project to 59.4 seconds with project) in the PM peak hour. Based on the significance criteria, this is considered a **significant** adverse impact. The addition of project traffic would worsen operations within a deficient operating condition.

The modification of this traffic signal to provide an eastbound right-turn overlap phase with signal timing optimization would mitigate the Project's cumulative impact at this location. With this improvement, the intersection's operation would improve as compared to the without project condition, reducing the Project impact to a **less-than-significant**, as presented in Table 10. As this intersection is under the jurisdiction of Caltrans, their approval of the improvement would be required to implement this mitigation measure.

Mitigation Measure 2: Prior to occupancy of the first unit, the Project applicant shall provide funding for the City to modify the Somersville Road/Auto Center Drive at SR 4 Westbound Ramps traffic signal to install an eastbound right-turn overlap phase and retime the signal to the satisfaction of the City Engineer.

Impact Statement 3: The Somersville Road at Delta Fair Boulevard intersection is projected to operate at LOS E during the AM peak hour, and LOS E during the PM peak hour. The addition of project traffic would increase delay by 1.3 seconds (58 seconds without project to 59.3 seconds with project) in the AM peak hour and 2.5 seconds (65.8 seconds without project to 68.3 seconds with project) in the PM peak hour. Based on the significance criteria, this is considered a **significant** adverse impact. The addition of project traffic would worsen operations within a deficient operating condition.

The restriping of the intersection's eastbound approach to convert the eastbound left-thru shared lane to an exclusive eastbound left lane would mitigate the Project's cumulative impact at this location. As the



existing intersection currently operates with east-west split phasing, which would be converted to lead lag phasing, the traffic signal would need to be modified, along with surrounding infrastructure to ensure no vehicle conflicts occur with the eastbound and westbound left turn movements. Implementation of this improvement with retiming of the traffic signal, would improve operations as compared to the without project condition, reducing the impact to **less-than-significant**, as presented in Table 10.

Mitigation Measure 3: The Project applicant shall restripe the eastbound approach to convert the eastbound left-thru shared lane to an exclusive eastbound left lane. Prior to occupancy of the first unit the applicant shall complete this mitigation to the satisfaction of the City Engineer.

Impact Statement 4: The Somersville Road at Buchanan Road intersection is projected to operate at LOS F during the AM peak hour, and LOS E during the PM peak hour. The addition of project traffic would increase delay by 0.9 seconds (87.4 seconds without project to 88.3 seconds with project) in the AM peak hour and one second (55.5 seconds without project to 56.5 seconds with project) in the PM peak hour under cumulative conditions. Based on the significance criteria, this is considered a **significant** adverse impact. The addition of project traffic would worsen operations within a deficient condition.

As discussed in Impact Statement 1 above, Tuscany Meadows EIR identified a mitigation measure at this location. That mitigation included the conversion of an eastbound through lane to an eastbound through-left turn lane to allow for dual left turn movement onto northbound Somersville Road and an additional northbound lane to allow for a dual left turn movement onto westbound Buchanan Road. With implementation of this mitigation measure, the intersection's operation would operate within acceptable standards based on the City of Antioch Standards, reducing the Project's cumulative impact to **less-than-significant**, as shown in Table 10.

Mitigation Measure 4: Implement mitigation measure 1. Prior to issuance of building permits the applicant shall initiate construction and prior to occupancy of the first unit the applicant shall complete construction of dual northbound left turn lanes on Somersville Road onto Buchanan Road and conversion of an eastbound through lane to a through-left-turn lane to the satisfaction of the City Engineer. A portion of the improvements will be eligible for reimbursement.



Table 10: Cumulative Conditions Peak Hour Intersection LOS Summary with Mitigation

Intersection	Control ¹	Peak Hour ²	Cumulative Without Project		Cumulative with Project		Cumulative with Project with Mitigation	
			Delay ³	LOS	Delay ³	LOS	Delay ³	LOS
1. Somersville Road/Auto Center Drive & SR 4 WB Ramps	Signal	AM	27.1	C	27.1	C	22.4	C
		PM	56.4	E	59.4	E	27.8	C
3. Somersville Road & Delta Fair Boulevard	Signal	AM	58.0	E	59.3	E	54.3	D
		PM	65.8	E	68.3	E	64.4	E
4. Somersville Road & Buchanan Road	Signal	AM	87.4	F	88.3	F	54.8	D
		PM	55.5	E	56.5	E	43.4	D

Notes:

- Existing intersection traffic control type (SSSC = Side-Street Stop-Controlled)
- AM = Weekday morning peak hour, PM = Weekday evening peak hour
- Whole intersection average delay reported for signalized intersections. Side-street stop-controlled delay presented as Whole Intersection Average Delay (Worst Movement Delay). Delay calculated per HCM 2010 methodologies.

Bold indicates unacceptable operations.

Source: Fehr & Peers, September 2019.



7. Freeway Analysis

The freeway analysis was conducted under existing, near-term and cumulative conditions based on the methodology outlined in Chapter 1 to determine travel speeds along the State Route 4 corridor from Loveridge Road and Somersville Road/Autocenter Drive to Contra Loma Boulevard/L Street and Lone Tree Way.

Existing Conditions

Existing conditions mainline traffic counts for the State Route 4 study corridor and associated on and off-ramps were obtained from the Caltrans Performance Measurement System (PeMS). From this data, the peak hour of westbound and eastbound travel was identified during both the morning and evening commute periods. Existing conditions results are presented in **Table 11** for the AM peak hour and **Table 12** for the PM peak hour. During both the morning and evening peak hour, little congestion is experienced in the peak-direction, such that some segments of State Route 4 operate with a delay index of 1.01. Free-flow conditions are represented by a delay index of 1.0, indicating that travel during peak times takes 1.01 times longer than travel during off-peak times. All study segments operate at free flow conditions in the off-peak direction with a delay index of 1.0.

The Project would increase traffic on freeways in the study area and worsen the delay index for segments that are projected to operate within the standard; however, it would not result in study-segment operations to degrade beyond the established standard.

The amount of vehicle traffic in high-occupancy vehicle lanes was also assessed, as presented in **Table 13**. The table shows that in both the morning and evening peak hours in the existing condition, the volume of traffic on the HOV lane traveling in the commute direction (WB during AM, EB during PM) is above the desired MTSO standard of at least 600 vehicles per hour per lane. The Project is expected to add traffic to these HOV lane segments.



Table 11: Existing Conditions Freeway Operations Summary – AM Peak Hour

Segment	Direction	Existing		Existing with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB ²	3016	1.00	3026	1.00
	WB ¹	6029	1.01	6053	1.01
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB ²	3178	1.00	3193	1.00
	WB ¹	6329	1.01	6346	1.01
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB ²	3434	1.00	3449	1.00
	WB ¹	5903	1.01	5920	1.01

Notes:

1. AM WB peak hour analysis reflects operation of the HOV lane which carries approximately 14-15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

2. AM EB peak hour analysis reflects operation of the HOV lane which carries approximately 13-16 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr & Peers, 2019.

Table 12: Existing Conditions Freeway Operations Summary – PM Peak Hour

Segment	Direction	Existing		Existing with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB ²	6189	1.01	6196	1.01
	WB ¹	4150	1.00	4168	1.00
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB ²	6293	1.01	6307	1.01
	WB ¹	4479	1.00	4496	1.00
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB ²	6161	1.01	6175	1.01
	WB ¹	4568	1.00	4585	1.00

Notes:

1. PM WB peak hour analysis reflects operation of the HOV lane which carries approximately 11-13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

2. PM EB peak hour analysis reflects operation of the HOV lane which carries approximately 15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr & Peers, 2019.



Table 13: Existing Conditions Freeway Operations Summary – HOV Lane Volumes

Segment	Direction	Existing		Existing with Project	
		AM	PM	AM	PM
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB	--	898	--	899
	WB	862	--	865	--
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB	--	913	--	915
	WB	921	--	923	--
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB	--	894	--	896
	WB	844	--	846	--

Source: Fehr & Peers, 2019.

The addition of project trips to the freeway system is not expected to create any significant impacts in the existing condition.

Near-Term

Near-term freeway forecasts were developed based on the same method used to develop the near-term intersection forecasts, both without and with the Project. Operations were evaluated using the same methods described in Chapter 1. No freeway improvements were included in the evaluation of near-term freeway operations. The Near-term without and with Project analysis results are presented in **Table 14** and **Table 15** for the AM and PM peak hours, respectively, based on the estimates of near-term traffic volumes, plus estimates of project traffic.

The Project would increase traffic on freeways in the study area and worsen the delay index for segments that are projected to operate within the standard; however, it would not result in study-segment operations to degrade beyond the established standard.

The amount of vehicle traffic in high-occupancy vehicle lanes was also assessed, as presented in **Table 16**. Similar to the existing conditions, the volume of traffic on the HOV lane traveling in the commute direction (WB during AM, EB during PM) is above the desired MTSO standard of at least 600 vehicles per hour per lane. The Project is expected to add traffic to these HOV lane segments.



Table 14: Near-term Conditions Freeway Operations Summary – AM Peak Hour

Segment	Direction	Near Term		Near Term with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB ²	3230	1.00	3240	1.00
	WB ¹	6490	1.02	6514	1.02
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB ²	3490	1.00	3505	1.00
	WB ¹	6770	1.02	6787	1.02
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB ²	3760	1.00	3775	1.00
	WB ¹	6320	1.01	6337	1.01

Notes:

1. AM WB peak hour analysis reflects operation of the HOV lane which carries approximately 14-15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.
2. AM EB peak hour analysis reflects operation of the HOV lane which carries approximately 13-16 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr & Peers, 2019.



Table 15: Near-term Conditions Freeway Operations Summary – PM Peak Hour

Segment	Direction	Near Term		Near Term with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB ²	6600	1.01	6607	1.00
	WB ¹	4470	1.00	4488	1.00
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB ²	6740	1.01	6754	1.16
	WB ¹	4920	1.00	4937	1.00
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB ²	6600	1.01	6614	1.07
	WB ¹	5010	1.00	5027	1.00

Notes:

1. PM WB peak hour analysis reflects operation of the HOV lane which carries approximately 11-13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.
2. PM EB peak hour analysis reflects operation of the HOV lane which carries approximately 15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr & Peers, 2019.

Table 16: Near Term Conditions Freeway Operations Summary – HOV Lane Volumes

Segment	Direction	Near Term		Near Term with Project	
		AM	PM	AM	PM
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB	--	960	--	961
	WB	930	--	933	--
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB	--	980	--	982
	WB	990	--	992	--
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB	--	960	--	962
	WB	900	--	902	--

Source: Fehr & Peers, 2019.

The addition of project trips to the freeway system is not expected to create any significant impacts in the Near-Term condition.

Cumulative

Cumulative freeway forecasts were developed based on the same method used to develop the cumulative intersection forecasts, both without and with the Project. Operations were evaluated using the same



methods described in Chapter 1. The Cumulative without and with Project analysis results are presented in **Table 17** and **Table 18** for the AM and PM peak hours, respectively, based on the estimates of cumulative traffic volumes, plus estimates of project traffic. In the cumulative condition, operations of State Route 4 are projected to further degrade on some segments during the morning and evening peak hours, but not beyond the MTSO standard of 2.5 for the delay index.

The Project would increase traffic on freeways in the study area and worsen the delay index for segments that are projected to operate within the standard; however, it would not result in study-segment operations to degrade beyond the established standard.

The amount of vehicle traffic in high-occupancy vehicle lanes was also assessed, as presented in **Table 19**, which shows that in both the morning and evening peak hours, the volume of traffic in the HOV lane is above the desired MTSO standard of at least 600 vehicles per hour per lane. The Project is expected to add traffic to these HOV lane segments.



Table 17: Cumulative Conditions Freeway Operations Summary – AM Peak Hour

Segment	Direction	Cumulative		Cumulative with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB ²	4300	1.00	4310	1.00
	WB ¹	9200	1.27	9224	1.28
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB ²	4500	1.00	4516	1.00
	WB ¹	9700	1.40	9718	1.41
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB ²	4900	1.00	4916	1.00
	WB ¹	9000	1.22	9018	1.23

Notes:

1. AM WB peak hour analysis reflects operation of the HOV lane which carries approximately 14 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

2. AM EB peak hour analysis reflects operation of the HOV lane which carries approximately 12-16 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr & Peers, 2019.

Table 18: Cumulative Conditions Freeway Operations Summary – PM Peak Hour

Segment	Direction	Cumulative		Cumulative with Project	
		Volume	Delay Index	Volume	Delay Index
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB ²	8800	1.11	8807	1.11
	WB ¹	5500	1.00	5519	1.00
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB ²	8900	1.12	8914	1.12
	WB ¹	5900	1.00	5917	1.00
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB ²	8700	1.10	8714	1.10
	WB ¹	6000	1.01	6017	1.01

Notes:

1. PM WB peak hour analysis reflects operation of the HOV lane which carries approximately 10-14 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

2. PM EB peak hour analysis reflects operation of the HOV lane which carries approximately 15 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak hour.

Source: Fehr & Peers, 2019.



Table 19: Cumulative Conditions Freeway Operations Summary – HOV Lane Volumes

Segment	Direction	Cumulative		Cumulative with Project	
		AM	PM	AM	PM
1. State Route 4, between Loveridge Rd and Somersville Rd/Autocenter Dr	EB	--	1300	--	1301
	WB	1300	--	1303	--
2. State Route 4, between Somersville Rd/Autocenter Dr and Contra Loma Blvd/L St	EB	--	1300	--	1302
	WB	1400	--	1403	--
3. State Route 4, between Contra Loma Blvd/L St and Lone Tree Way	EB	--	1300	--	1302
	WB	1300	--	1303	--

Source: Fehr & Peers, 2019.

The addition of project trips to the freeway system is not expected to create any significant impacts in the Cumulative condition.



8. Site Plan Review

This chapter analyzes site access and internal circulation for vehicles, pedestrians, bicycles, and emergency vehicles based on the site plan presented previously on Figure 2.

Vehicular Site Access and Circulation

Vehicular access to the Project site is proposed to be provided via two driveways on San Jose Drive, two driveways on Delta Fair Boulevard, two driveways on Buchanan Road, and one driveway along the frontage road that borders the Elder Winds apartment complex. Figure 2 illustrates the proposed Project site plan, including all driveways, internal roadways, and parking spaces. The two driveways on San Jose Drive currently exist and are proposed to be realigned. The northern-most driveway on Delta Fair Boulevard would remain in its current location and configuration, with the other Delta Fair Boulevard driveway being relocated and reconstructed just north to fit the revised site plan. On Buchanan Road, the western-most existing driveway will be replaced by a right-turn, exit-only parking garage driveway at the location shown on Figure 2. The existing eastern driveway on Buchanan Road is proposed to remain in its current location and configuration. Along the Elder Winds frontage road, a new driveway would provide residents access to and from the Project site. All driveways are proposed to have stop sign control on the driveway approaches, with the main street (San Jose Drive, Delta Fair Boulevard and Buchanan Road) approaches being uncontrolled. This control type is consistent with that present at all existing driveway locations.

Field observed travel speeds along Buchanan Road in the vicinity of the Project site range between 30 and 40 miles per hour. The posted speed limit is 35 mph. Table 201.1 of the Caltrans Highway Design Manual (HDM) states that the stopping sight distance standard for a design speed of 40 miles per hour is 300 feet (250 feet for 35 miles per hour). Field observations of existing sight distance at the two proposed driveway locations on Buchanan Road indicate sight distances in excess of 300 feet. Field observed travel speeds along Delta Fair Boulevard in the vicinity of the Project site range between 25 and 35 miles per hour, with the posted speed limit being 30 miles per hour. Field observations of existing sight distance at the two newly proposed driveway locations on Delta Fair Boulevard indicate sight distances in excess of 250 feet, which would be the required stopping sight distance for a design speed of 35 miles per hour. Thus, adequate sight distance appears to be provided at all new driveway locations proposed by the Project. However, as the Project's design is finalized, these distances should be checked, and the Project should propose no features (signs, landscaping, etc.) that would compromise driveway sight distance.



Site Recommendation 1 The final site plan for the Project should be analyzed by the Project's Civil Engineer to ensure that adequate sight distance is maintained at all driveways. No objects (landscaping, monument signs, etc.) greater than three feet in height should be allowed within the sight distance triangles at driveway intersections. Review available speed survey information from the City and adjust required sight distance if necessary.

Site Recommendation 2: The conceptual site plan appears to show raised islands, potentially with signage or entry markers, at the two new driveways on Delta Fair Boulevard. We recommend removing the raised islands for both safety and operational efficiency. Entrance signing should be relocated to the driveway corners and not obstruct vehicular sight distance, as noted above.

As illustrated on Figure 2, the Project site is served by an internal at-grade landscaped parking lot providing 90-degree parking. In the central portion of the site the 90-degree parking is oriented largely on a north-south axis to align with the Delta Fair Boulevard driveways. This orientation transitions to an east-west axis towards the northern portion of the Project site to align with the San Jose Drive driveways. Parking aisles are generally 26 feet in width.

Trucks are expected to travel on site for moving, garbage, deliveries and emergency access.

Site Recommendation 3: The final site plan for the Project should illustrate truck turning templates at project driveways and internal roadways showing that applicable routes of travel provide sufficient space for emergency vehicles, garbage trucks, moving trucks/vans and automobiles.

Vehicles accessing the site and parking garage may be blocked from vehicles parking or entering the garage.

Site Recommendation 4: At all parking garage entries, install signs indicating that garage use is for "residents only." No parking within 25 feet of garage entry gates will be permitted inside the garage, unless otherwise approved by a City Engineer.

Site Recommendation 5: At project driveways, provide a minimum throat depth of 50 feet (approximately two vehicles). Parking spaces would not be provided or accessed from within this throat depth. Provide two outbound lanes (dedicated right and left turn lanes) onto Delta Fair Boulevard at the most northerly driveway and two outbound lanes onto San Jose Drive on the most westerly driveway. Align project driveways with internal parking lot aisles and provide a driveway width consistent with the drive aisle width (26 feet).

The following recommendations are provided to enhance vehicular access and circulation throughout the Project site:

Site Recommendation 6: Identify and provide locations for garbage and recycling pick up that do not result in trucks blocking through traffic on adjacent surface streets or internal roadways.



Identify and provide locations for loading and unloading of moving vehicles that do not result in trucks/vans/vehicles blocking through traffic on adjacent surface streets or internal roadways. Consider widening the roadway along the garage's eastern frontage to provide 22 feet of width for both trash pick-up and loading/unloading to occur.

Site Recommendation 7: Just northeast of the proposed 4,000 square foot retail or daycare center the site plan proposes an acute angle/triangular shaped intersection. Redesign the parking and aisles so that they intersect at 90-degree angles.

Site Recommendation 8: An existing acute angle intersection would remain within the central northern portion of the parking lot (just east of the adjacent retail parcel to remain at the corner of Delta Fair Boulevard and San Jose Drive). This internal intersection presents a large unstriped area wherein vehicle right-of-way is ambiguous. Redesign this internal intersection to reduce/eliminate the amount of unassigned pavement and intersect internal parking aisles as near to 90-degrees as possible.

Emergency Vehicle Access

Several factors determine whether a project has sufficient access for emergency vehicles, including:

1. Number of access points (both public and emergency access only)
2. Width of access points
3. Width of internal roadways

The Project site plan shows a total of five access points for emergency vehicles along Buchanan Road, Delta Fair Boulevard and San Jose Drive. With the exception of the exit-only driveway on Buchanan Road, and the driveway along the Elder Winds frontage road, all project driveways described in the Vehicular Site Access and Circulation section above would serve as access points for emergency vehicles. The 20 to 26-foot roadways through the site meet regulations for emergency vehicle widths.

Site Recommendation 9: Provide driveway widths to ensure access points width are sufficient for emergency vehicles.

Site Recommendation 10: Implement Site Recommendation 4

Pedestrian Access and Circulation

A 10-foot side-walk currently surrounds the Project frontage with crosswalks at nearby intersections. The proposed site plan shows connections to offsite public sidewalks on all sides of the Project frontage.



Site Recommendation 11: Show internal sidewalk widths. A minimum sidewalk width of 6-feet at all points including locations where signs, poles, fire hydrants, etc. are placed in the walkway per City of Antioch commercial design guidelines.

Site Recommendation 12: Provide accessible paths of travel between accessible parking spaces and building entries. Identify locations for accessible parking spaces in accordance with Code requirements.

Bike Access and Circulation

Currently an unmarked Class II bike lane is provided along northern Buchanan Road which terminates just prior to Delta Fair Boulevard.

Site Recommendation 13: Install sharrows along the Project's frontage on Buchanan Road to incorporate a class III bike route.

No bicycle parking is provided on the site plan; a minimum of 19 bicycle spaces are required for the retail portions of the development and bicycle parking is recommended for the residential units.

Site Recommendation 14: Provide at least 19 bicycle parking spaces for the retail portions. For the residential units, provide one per unit in either a restricted access bike room or individual bike lockers.

Transit Access Adjacent to Site

As described previously, three routes serve the study area, with stops on the east and west side of Delta Fair Boulevard, and on the north and south side of Buchanan Road at Delta Fair Boulevard intersection. With a provided sidewalk on the roadways and crosswalks at the intersections, a continuous pedestrian path would be provided from the Project site to area transit stops.

Parking

The proposed development requires 370 parking spaces for residents, 42 guest parking spaces, 21 parking spaces for the new retail facility and 438 parking spaces for the renovated retail building for a total of 829 parking spaces per the City of Antioch, California Code of Ordinances section 9-5.1703.1. 837 parking spaces are proposed, adequate parking is provided.



CEQA Checklist Review

This section provides a summary of the potential Project impacts related to bicycles, pedestrians, and transit based on the significance criteria outlined in Chapter 1, and summarized for each topic area, as presented in **Table 20**.



Table 20: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
<i>A pedestrian impact is considered significant if the Project would:</i>		
Disrupt existing pedestrian facilities	Pedestrian access is currently provided on Delta Fair Boulevard, San Jose Drive and Buchanan Drive. No pedestrian facilities are proposed to be removed as a part of the development.	None required.
Interfere with planned pedestrian facilities	The Project would construct pedestrian access to all offsite public sidewalks. Existing sidewalks and pedestrian facilities offsite are proposed to remain in place.	None Required
Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards	Sidewalks throughout the Project site are not dimensioned to connect to offsite pedestrian facilities. (Impact 5)	Mitigation Measure 5: Implement site recommendation number 11 to the satisfaction of the City Engineer. Implementation of this recommendation would reduce the impact to <i>less-than-significant</i> .
<i>A bicycle impact is considered significant if the Project would:</i>		
Disrupt existing bicycle facilities	Existing Class II bicycle facilities are provided in the immediate vicinity of the Project site on Buchanan Road. The Project does not propose to eliminate existing bicycle facilities in the vicinity of Project.	None required.
Interfere with planned bicycle facilities	The proposed Project does not interfere with any infrastructure off-site. The Project does not interfere with planned bicycle facilities in the area.	None Required
Create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards	The proposed development does not create any inconsistencies with the adopted bicycle system plans, guidelines, policies or standards. The current site plans does not show any bicycle parking as required by the City of Antioch, California Code of Ordinances. (Impact 6)	Mitigation Measure 6: implement site recommendation number 14 to the satisfaction of the City Engineer. Implementation of this measure would reduce the impact to a <i>less-than-significant</i> level.



Table 20: CEQA Checklist Review

Significance Criteria	Discussion	Mitigation
<i>A transit impact is considered significant if the Project would:</i>		
Result in development that is inaccessible to transit riders	Bus stops are currently located on Delta Fair Boulevard and Buchanan Road. Pedestrian connections would be provided from the site to the bus stops. However, many more residences would be located within close proximity to these bus stops. (Impact 7)	Mitigation Measure 7: Prior to the issuance of a building permit, the applicant shall consult with TriDelta Transit to determine if additional transit amenities should be provided throughout the Project site or Project frontages. Implementation of this measure would reduce the impact to a <i>less-than-significant</i> level.
Generate transit demand that cannot be met by existing or planned transit in the area.	Based on the existing travel patterns in the area, it is not expected that the Project would generate significant levels of transit ridership.	None required.
<i>Other Transportation Effects not addressed in other Chapters</i>		
An impact could occur if the Project substantially increases traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses.	An increase in hazardous road conditions could occur if the site circulation design does not meet City of Antioch standards or the Project adds traffic to a roadway that does not meet current design standards. Roadways within the Project site would be designed to meet City of Antioch standards.	None Required
An impact could occur if the Project results in inadequate emergency access	The Project provides five access points for emergency vehicles from numerous roadways. With roadway widths of 20 to 26 feet in the Project site. However, it is unclear what the driveway widths are and if emergency vehicles can make the turns in the site. (Impact 8)	Mitigation Measure 8: Implement Site Recommendation 9 and 10 to the satisfaction of the City Engineer. The final site plan shall be reviewed and approved by the Fire Marshal shall to ensure adequate emergency access. Implementation of this measure would reduce the impact to a <i>less-than-significant</i> level.



9. Vehicle Miles Traveled

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with updated draft guidelines prepared January 2016, which incorporated public comments from the August 2014 guidelines. OPR released final proposed Guidelines on November 27, 2017, with an associated Technical Advisory Document on Evaluating Transportation Impacts in CEQA dated December 2018. The updated guidelines were finalized in January 2019 by the Natural Resources Agency, which includes a new Section 15064.3 on VMT analysis and thresholds for land use developments. New Guidelines section 15064.3 states that they do not take effect until July 1, 2020 unless the lead agency adopts them earlier. Neither the City of Antioch nor the Contra Costa Transportation Authority has established any standards or thresholds on VMT. Therefore, the new guidelines have not yet been adopted and are not in effect at this time.

Since there are no standards in effect on VMT analysis, a preliminary assessment of the vehicle miles of travel (VMT) generated by the proposed Project was prepared for informational and disclosure purposes only. No determination on the significance of VMT impacts is made in this document since none is legally required.

CEQA Guidelines

Changes to Appendix G of the CEQA guidelines were finalized in January 2019, with methods for evaluating transportation impacts detailed in the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018)^[1] The following provides the information relevant to this Project:

Text of Amendments to Appendix G

b) For a land use Project, would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1)?

(b) Criteria for Analyzing Transportation Impacts.

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than

^[1] Full document can be found here:
http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf



significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact. For office uses, developments that would result in VMT 15 percent below **existing** regional VMT per employee (work tour or home-based work) would be considered less than significant.

Local-serving retail may be less than significant (projects less than 50,000 square feet). Retail which increases VMT compared to previous shopping patterns may be considered significant.

As neither the City of Antioch nor the Contra Costa Transportation Authority (CCTA) have established thresholds, and the new guidelines have not yet been adopted, this assessment is prepared for informational purposes only. This assessment focuses on the residential component of the Project only as the proposed commercial uses are unknown.

Analysis Methods

To conduct the VMT assessment, Fehr & Peers used the CCTA travel demand model as well as information from the Metropolitan Transportation Commission (MTC). The CCTA model was used to estimate average trip lengths for the proposed Project, while MTC data^[2] was used to establish average trip lengths for existing residential uses in Antioch. The existing average trip lengths for the City of Antioch, Contra Costa County and the Bay Area based on the MTC data are presented in **Table 21**. Home based trips in Antioch and Contra Costa County are slightly higher than the Bay Area average, while work based trips to jobs in Antioch are much lower than regional averages, indicating a jobs-housing imbalance where more people commute from Antioch to other employment centers, while jobs in Antioch tend to be filled by more local residents.

Table 21: Average Home-Based VMT Per Capita

Land Use Type	Antioch	Contra Costa County	Bay Area
Home Based VMT - 2015	17.9	18.0	15.3

Analysis Results

A select zone analysis was conducted using the CCTA model whereby all the trips generated by the residential portion of the Project were tracked through the transportation system. Based on this analysis, the proposed Project is estimated to generate approximately **16 vehicle miles of travel** per day per person for the residential portion of the Project. This includes all trips generated by each person that is

^[2] <http://analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita>



projected to live in the development that either start or end at home. This level of vehicle travel is lower than the City of Antioch average but higher than the Bay Area Average.

All trips generated by the retail portion of the Project were also tracked through the transportation system using a CCTA model select zone analysis. The average trip length of the retail portion of the Project was six miles; shorter than the average trip length of the residential portion of the Project. This is consistent with the MTC data which indicates a jobs-housing imbalance where more people commute from Antioch to other employment centers, while jobs in Antioch tend to be filled by more local residents. The daily project VMT is 21,749.

VMT Conclusion

Results of the VMT analysis indicate that the Project would contribute to an increase in vehicle miles of travel on a per-capita basis as the Project adds a housing development that would require residents to travel longer-than-average distances, than the regional average, to meet their daily needs. However, the average trip length of the residential and retail portions of the Project have lower average trip lengths than the City of Antioch average. The residential **vehicle miles of travel** per day per person is also lower than the City of Antioch average. As there are no thresholds of significance, this analysis is being provided for informational purposes only.



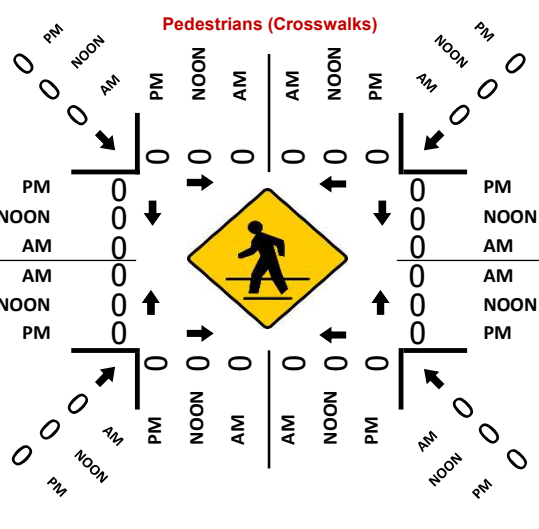
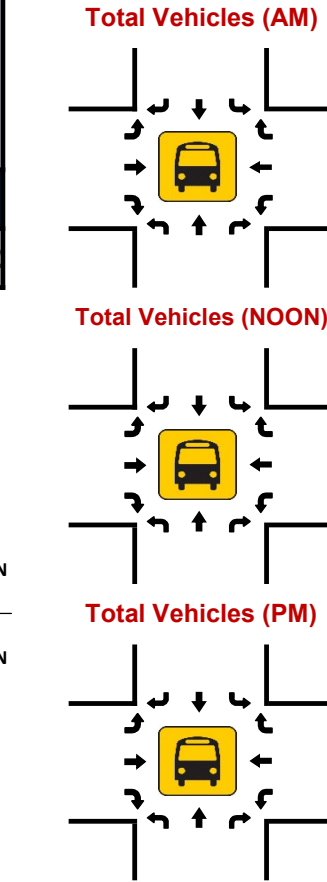
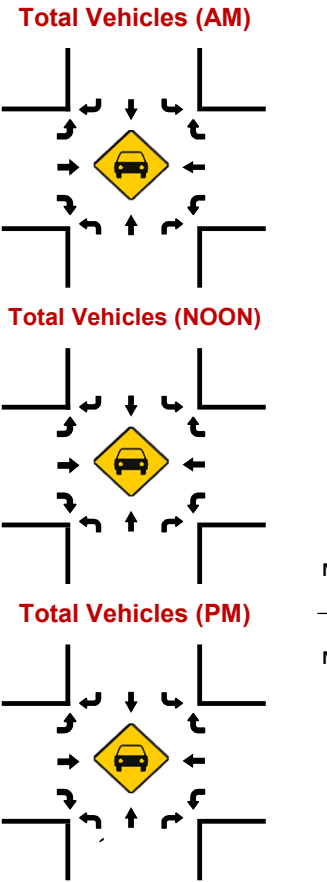
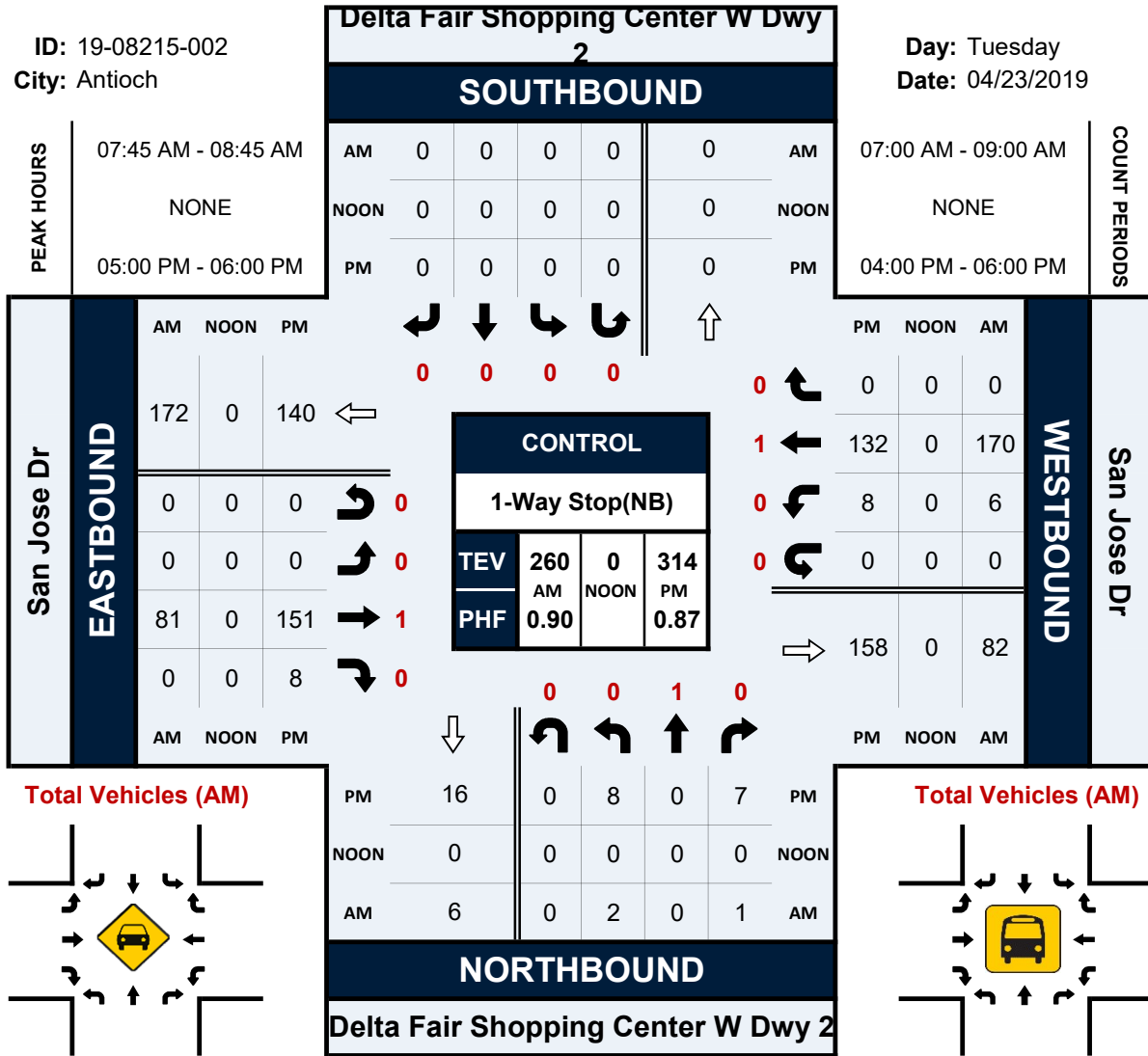
Appendix A: Counts

Delta Fair Shopping Center W Dwy 2 & San Jose Dr

Peak Hour Turning Movement Count

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City: Antioch

Day: Tuesday
Date: 04/23/2019

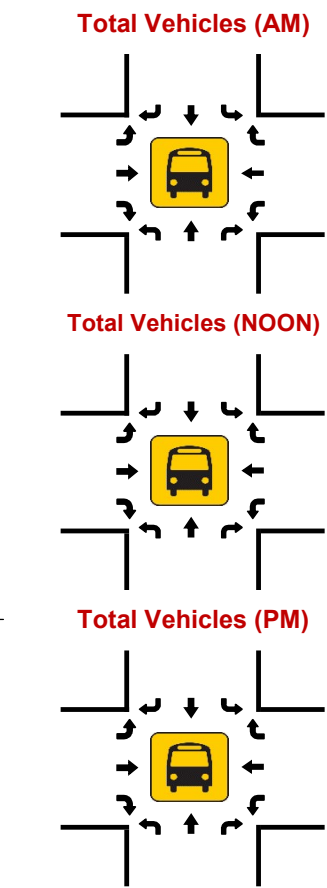
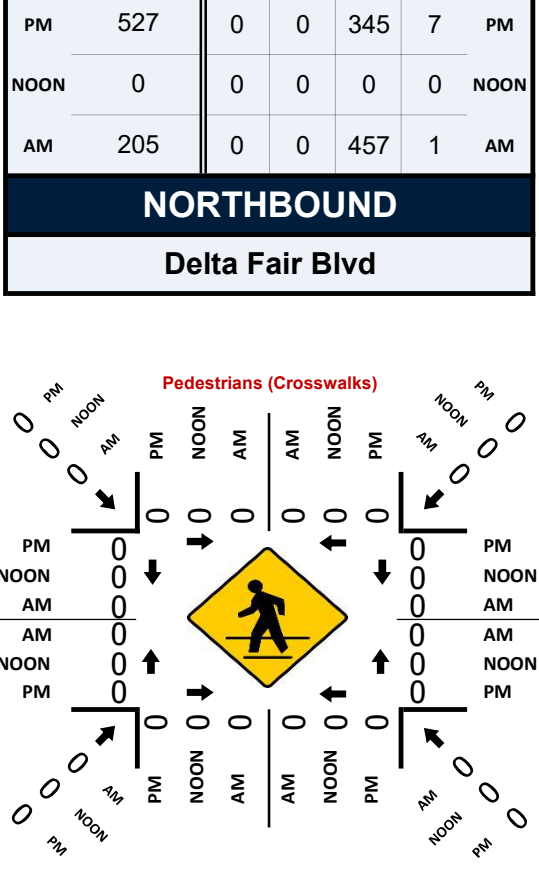
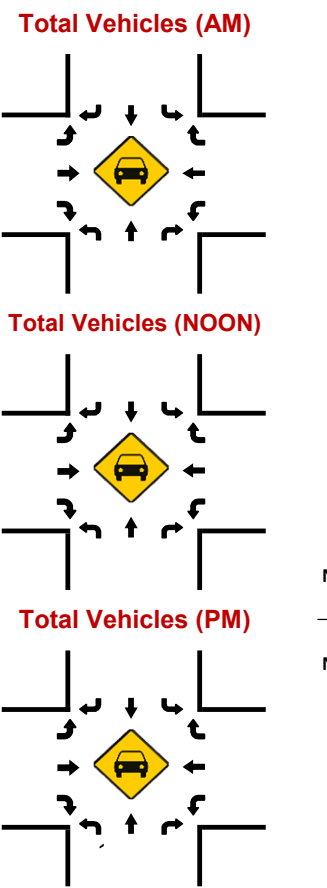
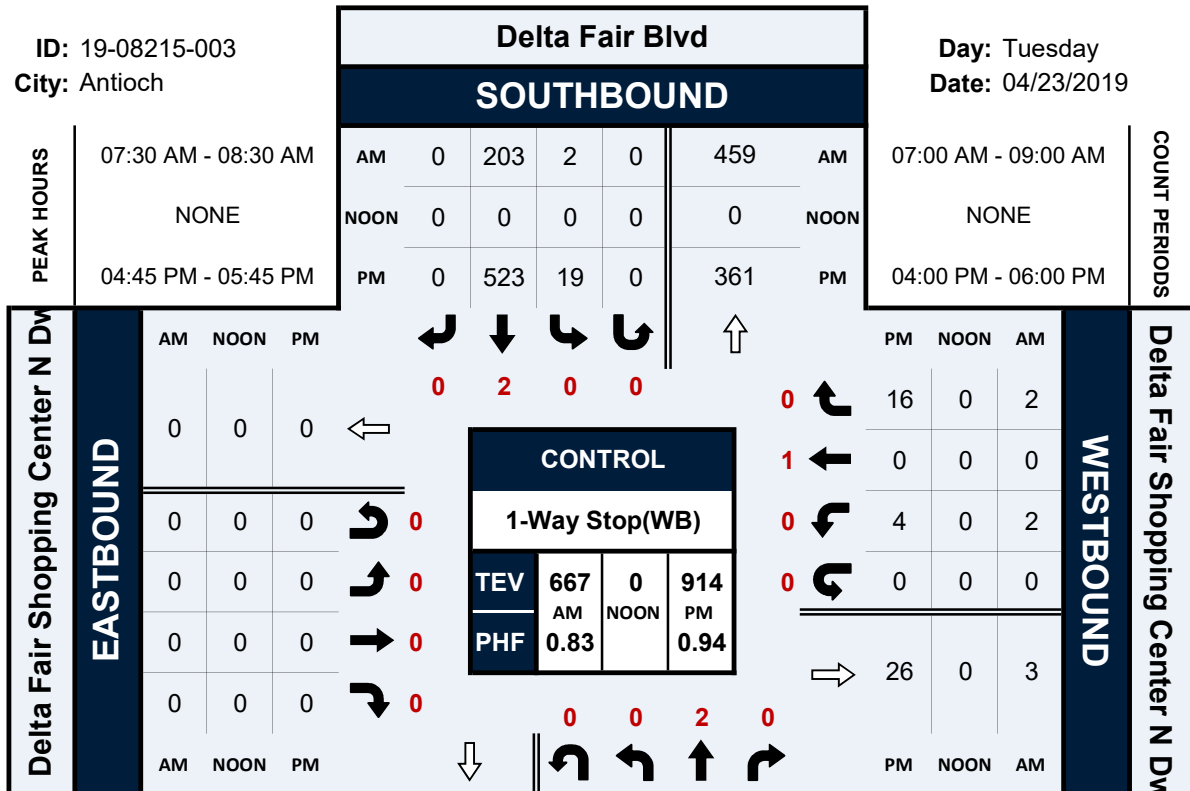


Delta Fair Blvd & Delta Fair Shopping Center N Dwy 3

Peak Hour Turning Movement Count

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City: Antioch

Day: Tuesday
Date: 04/23/2019

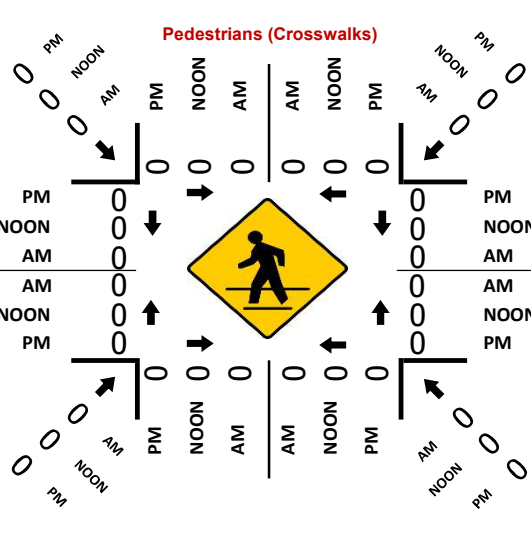
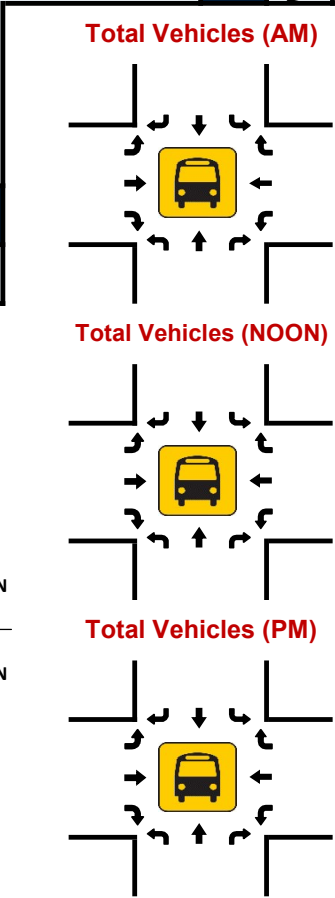
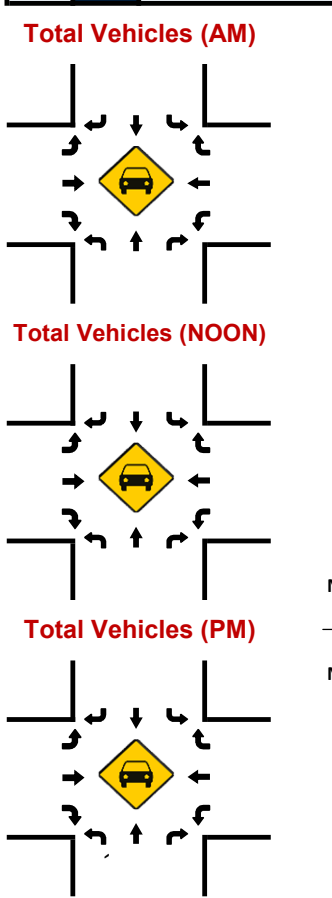
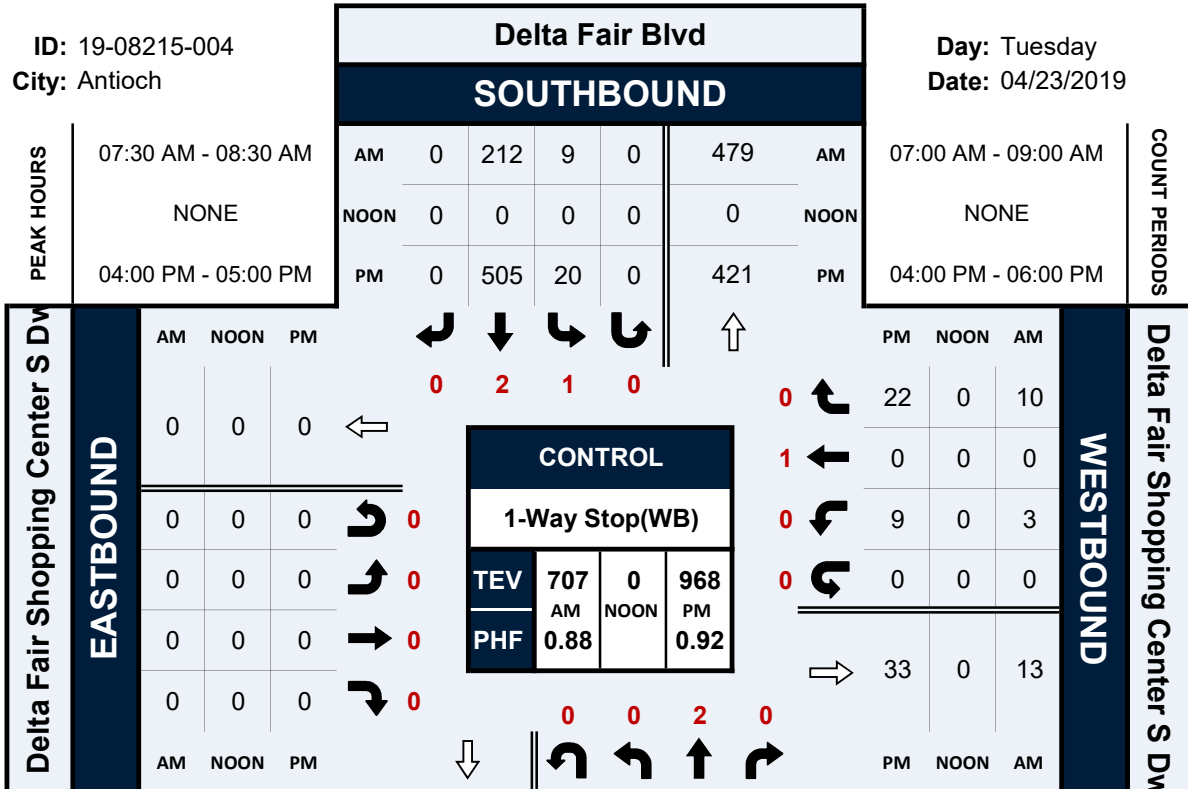


Delta Fair Blvd & Delta Fair Shopping Center S Dwy 4

Peak Hour Turning Movement Count

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City: Antioch

Day: Tuesday
Date: 04/23/2019

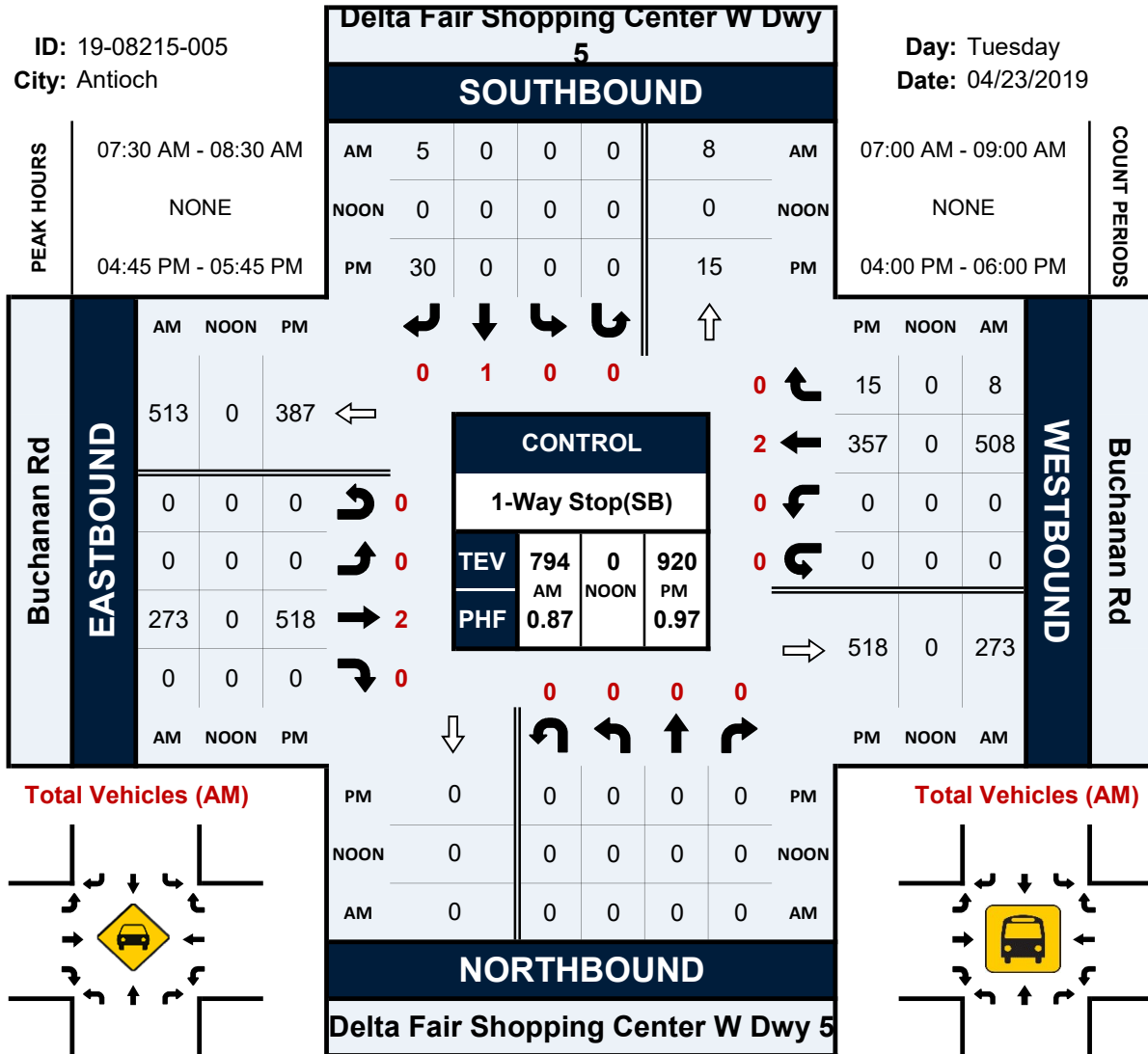


Delta Fair Shopping Center W Dwy 5 & Buchanan Rd

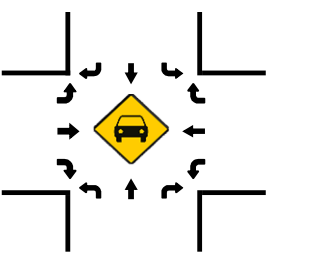
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City: Antioch

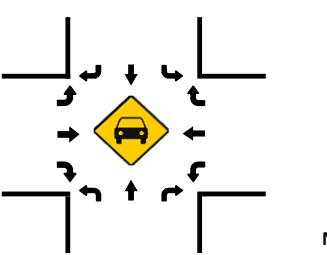
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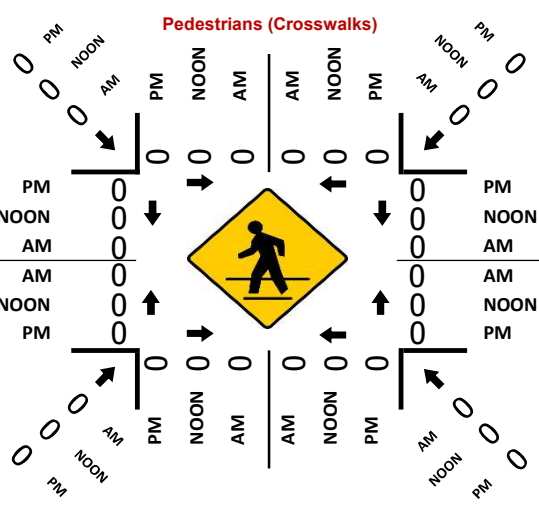
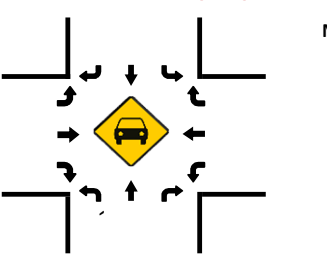
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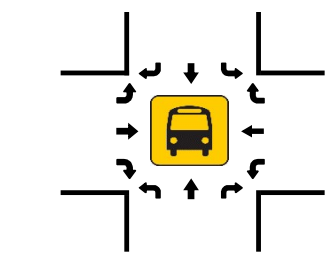
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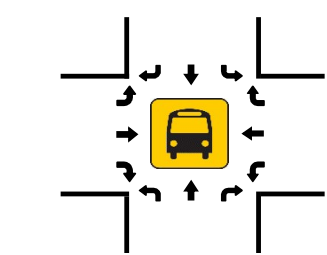
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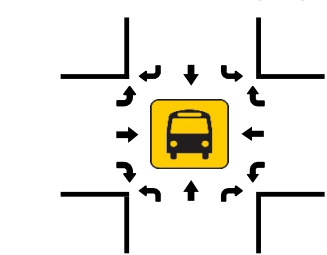
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Total Vehicles (NOON)



Total Vehicles (PM)

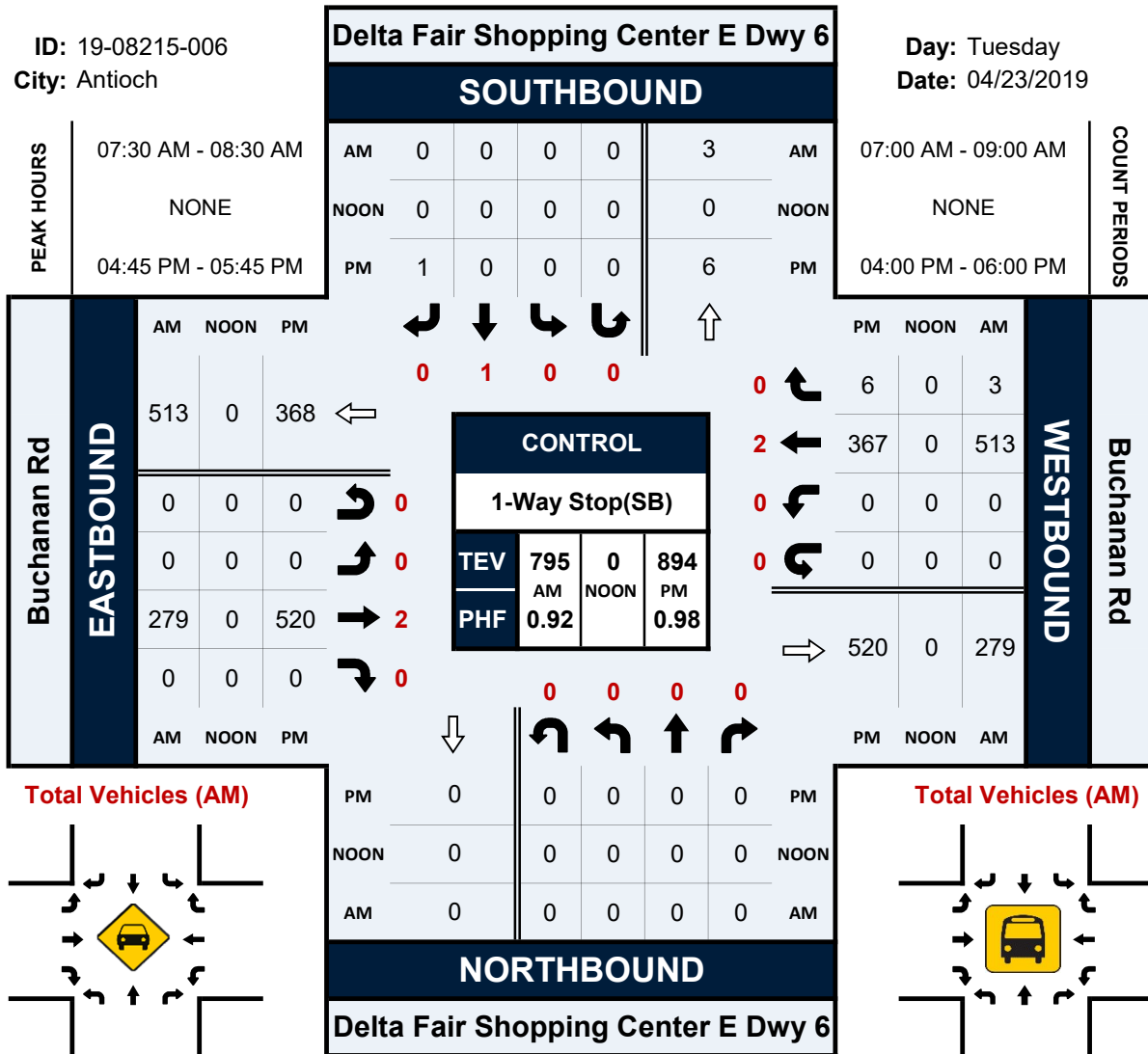


Delta Fair Shopping Center E Dwy 6 & Buchanan Rd

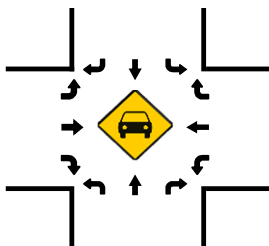
Peak Hour Turning Movement Count

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City: Antioch

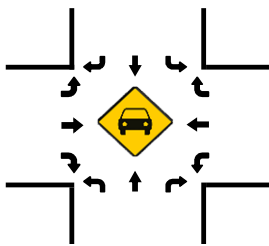
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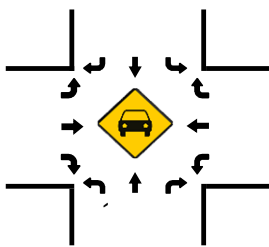
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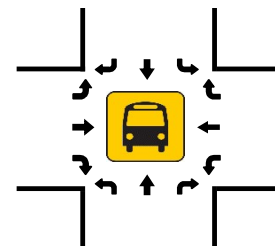
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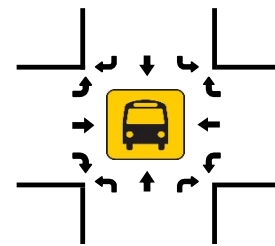
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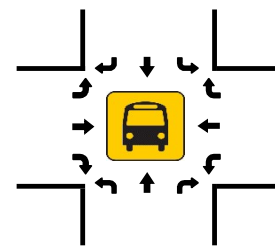
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Total Vehicles (NOON)



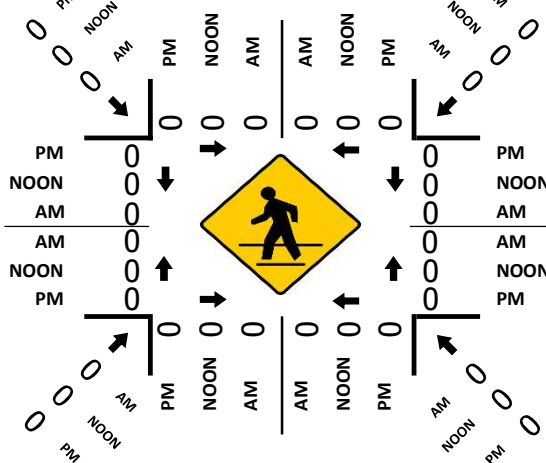
Total Vehicles (PM)



NORTHBOUND

Delta Fair Shopping Center E Dwy 6

Pedestrians (Crosswalks)

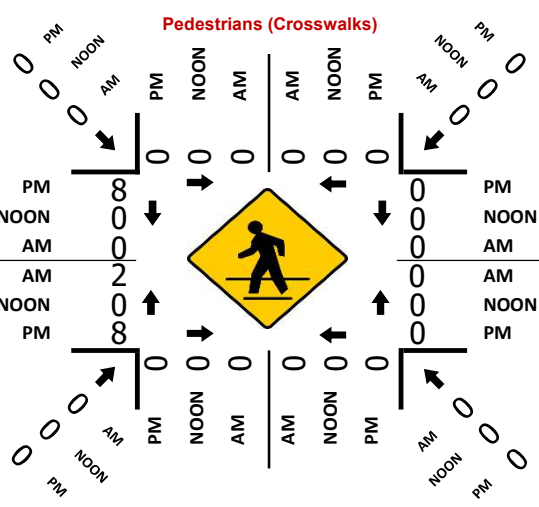
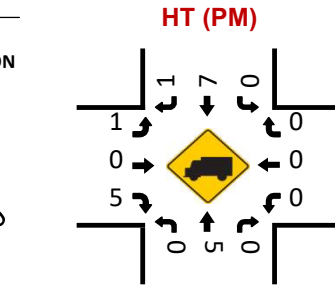
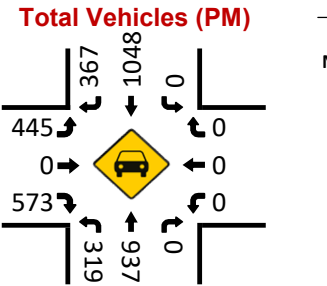
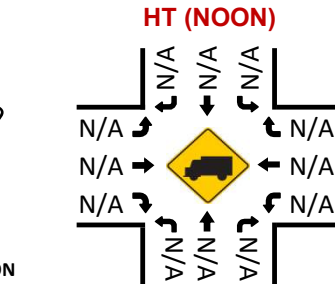
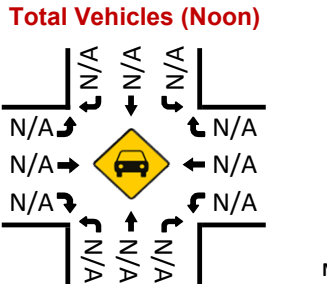
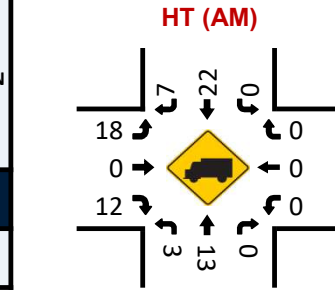
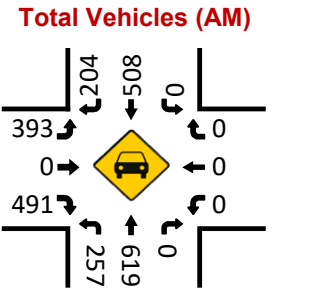
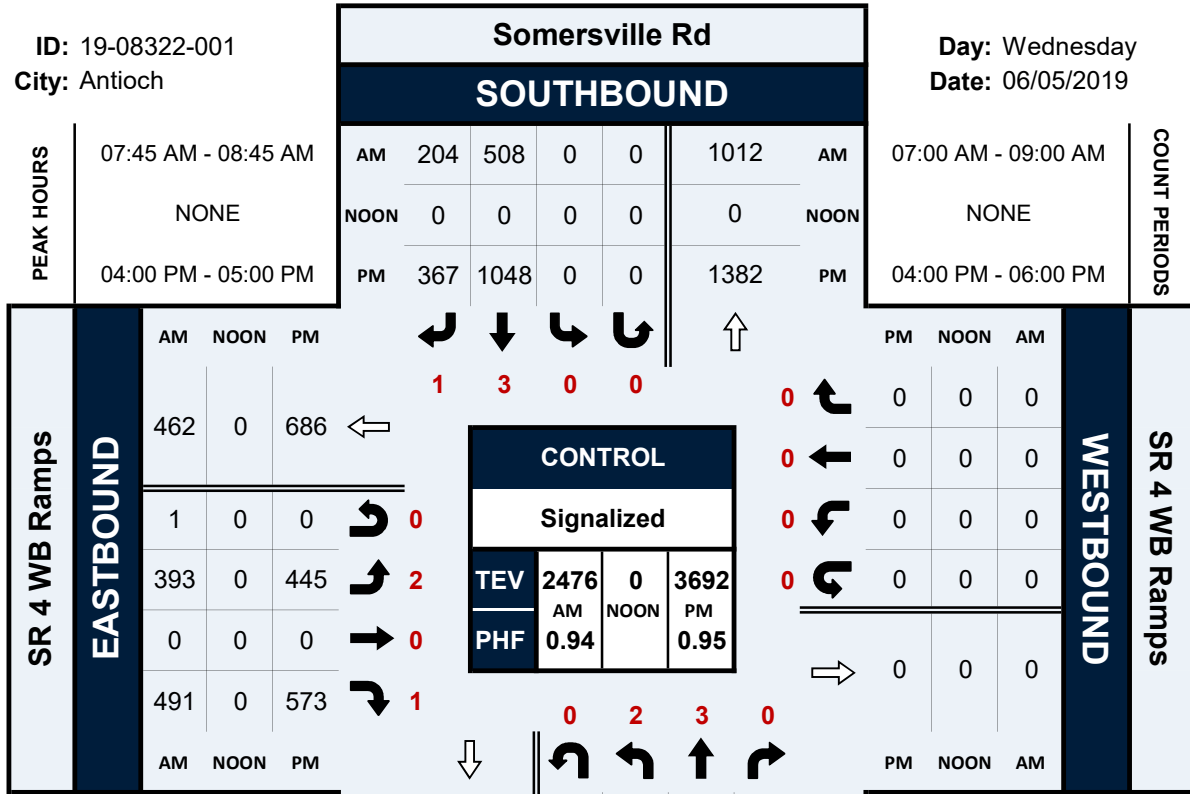


Somersville Rd & SR 4 WB Ramps

Peak Hour Turning Movement Count

ID: 19-08322-001
City: Antioch

Day: Wednesday
Date: 06/05/2019

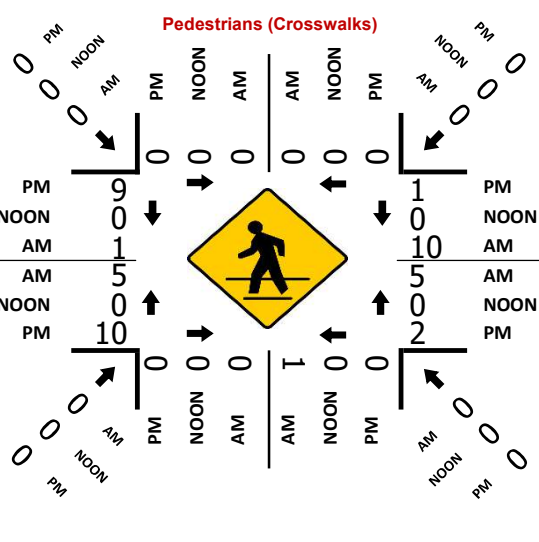
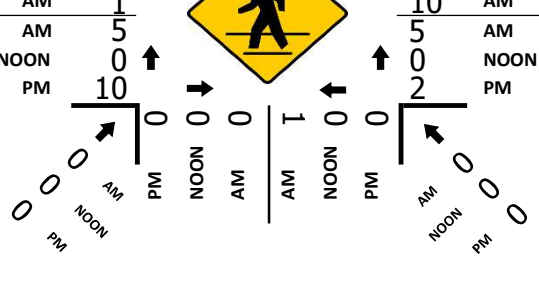
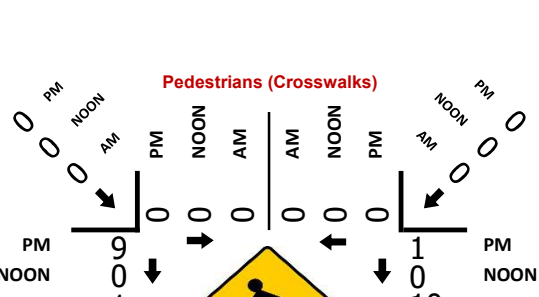
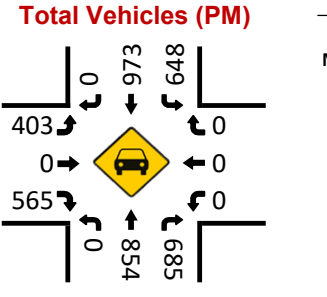
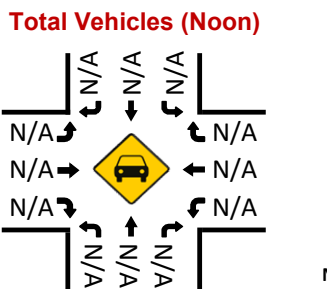
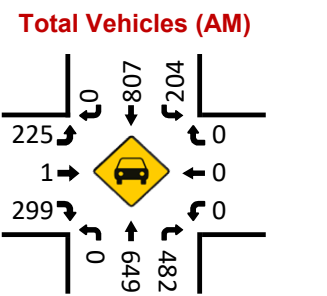
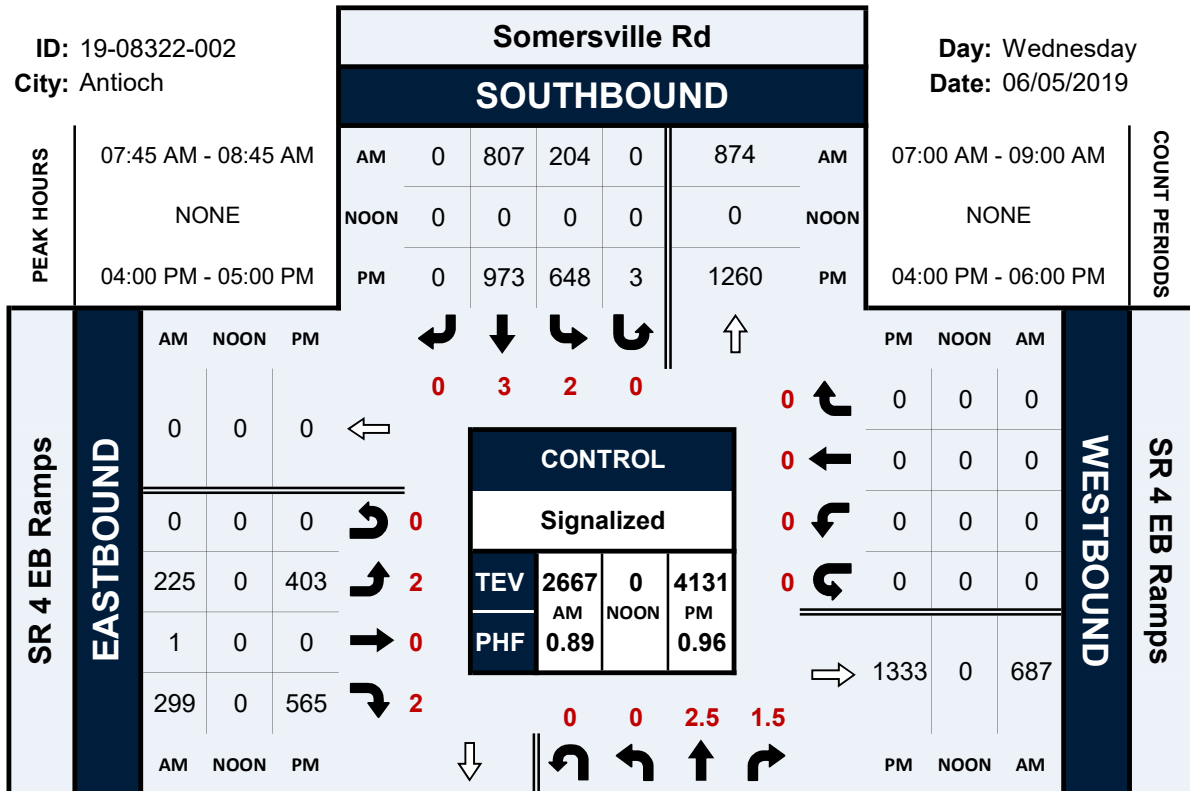


Somersville Rd & SR 4 EB Ramps

Peak Hour Turning Movement Count

ID: 19-08322-002
City: Antioch

Day: Wednesday
Date: 06/05/2019

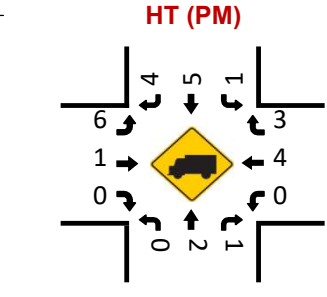
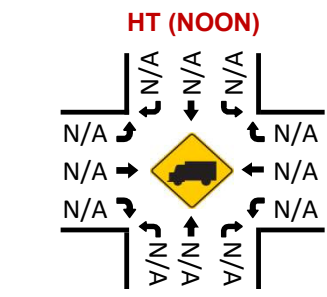
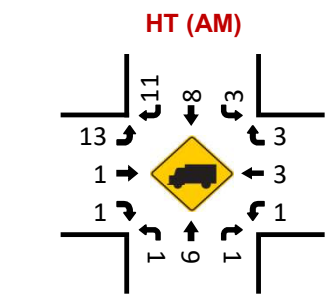
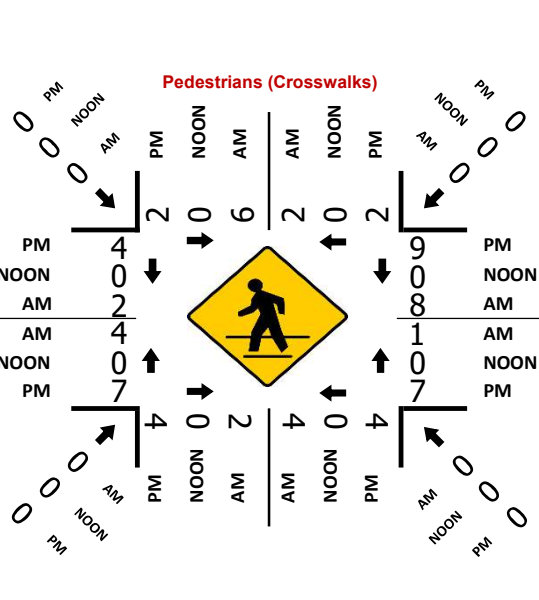
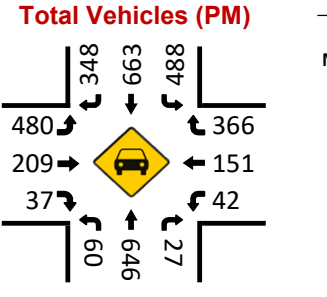
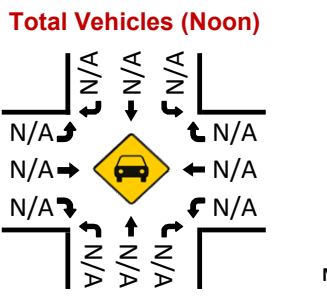
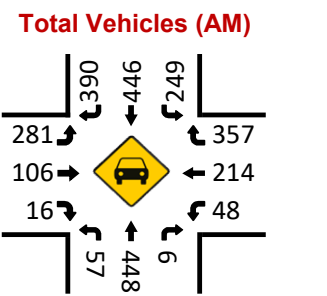
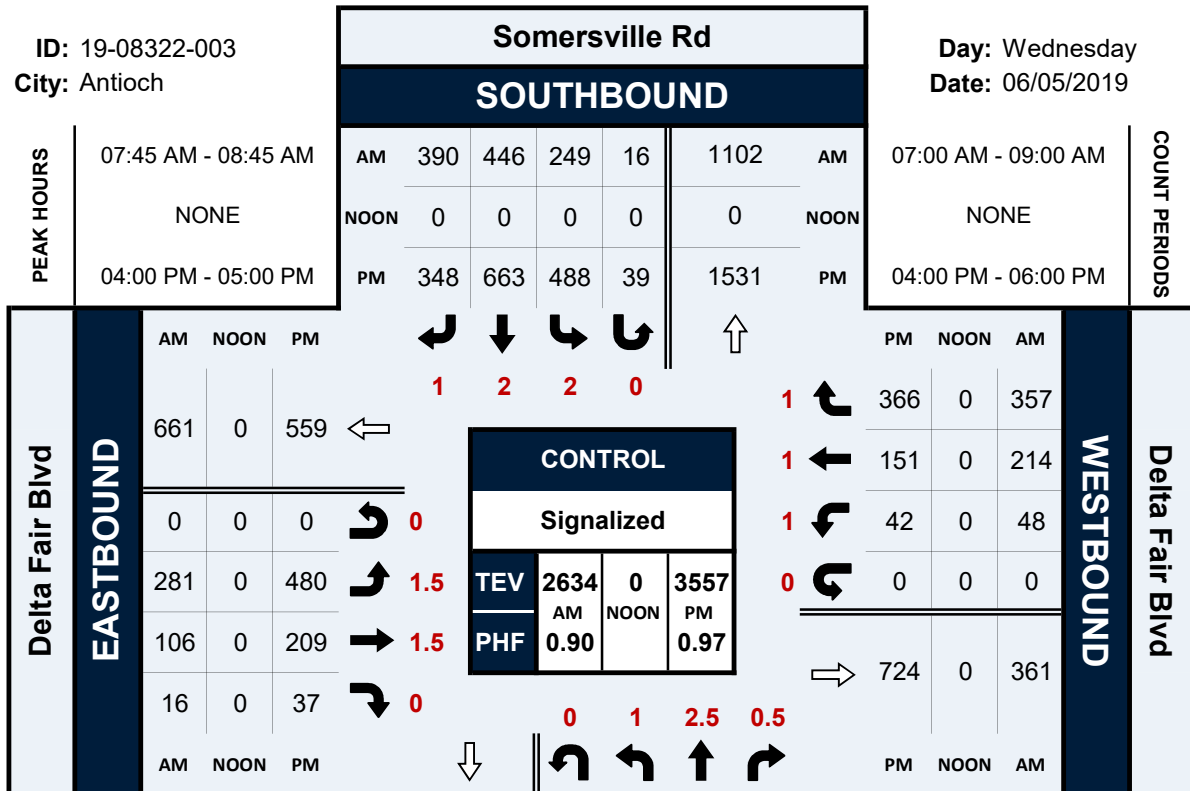


Somersville Rd & Delta Fair Blvd

Peak Hour Turning Movement Count

ID: 19-08322-003
City: Antioch

Day: Wednesday
Date: 06/05/2019

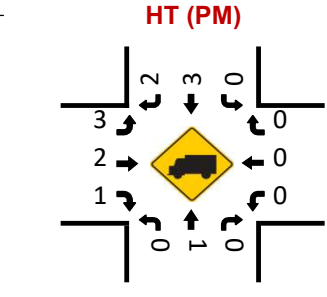
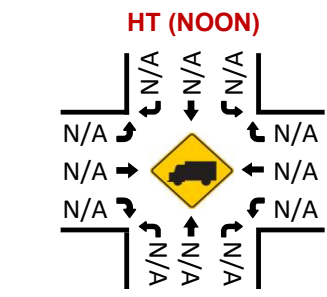
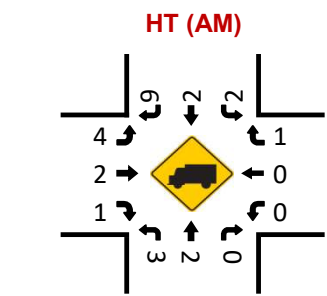
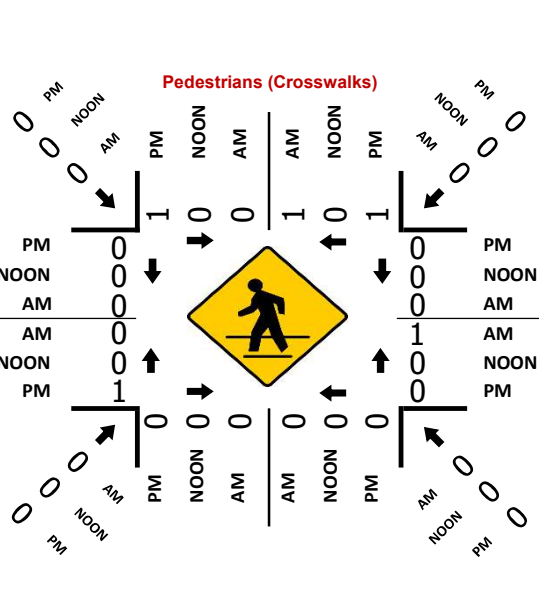
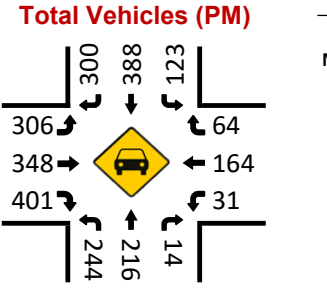
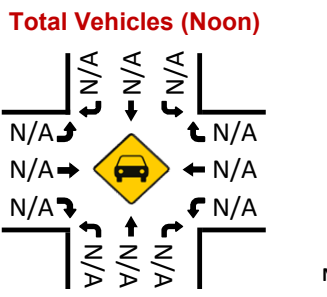
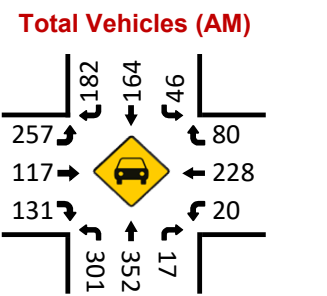
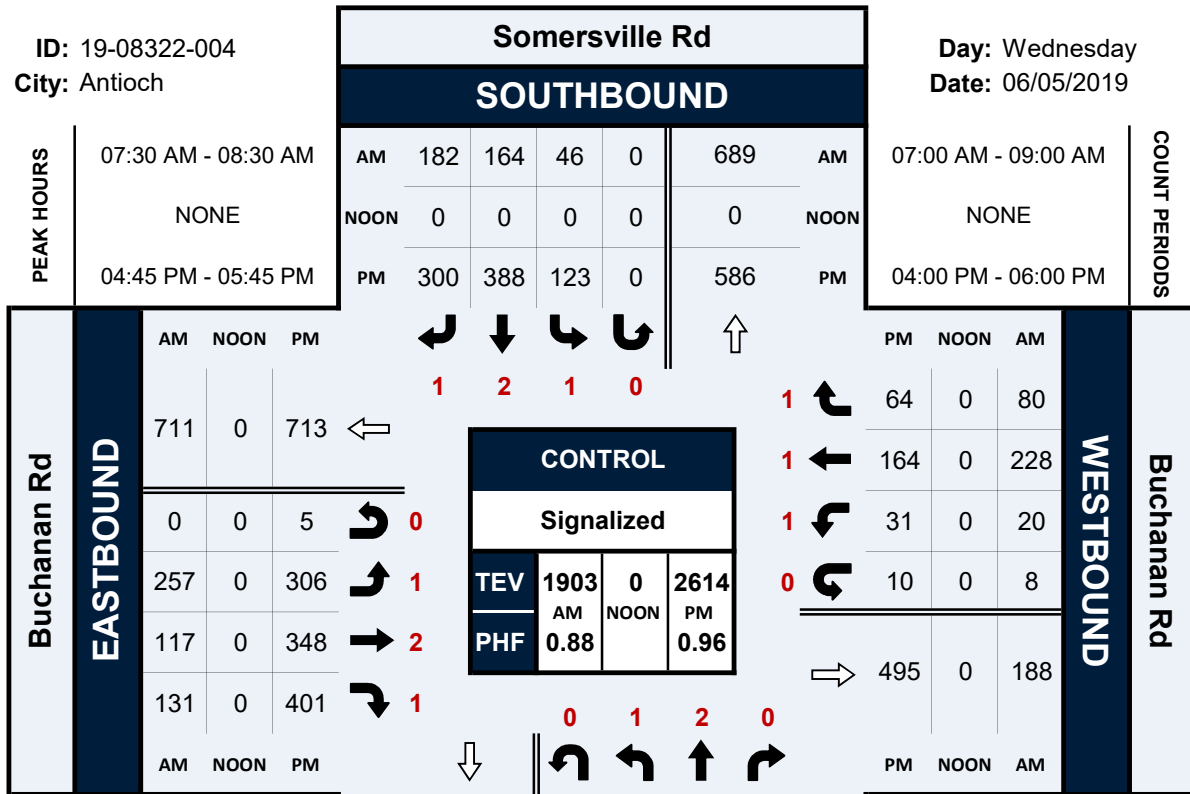


Somersville Rd & Buchanan Rd

Peak Hour Turning Movement Count

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City: Antioch

Day: Wednesday
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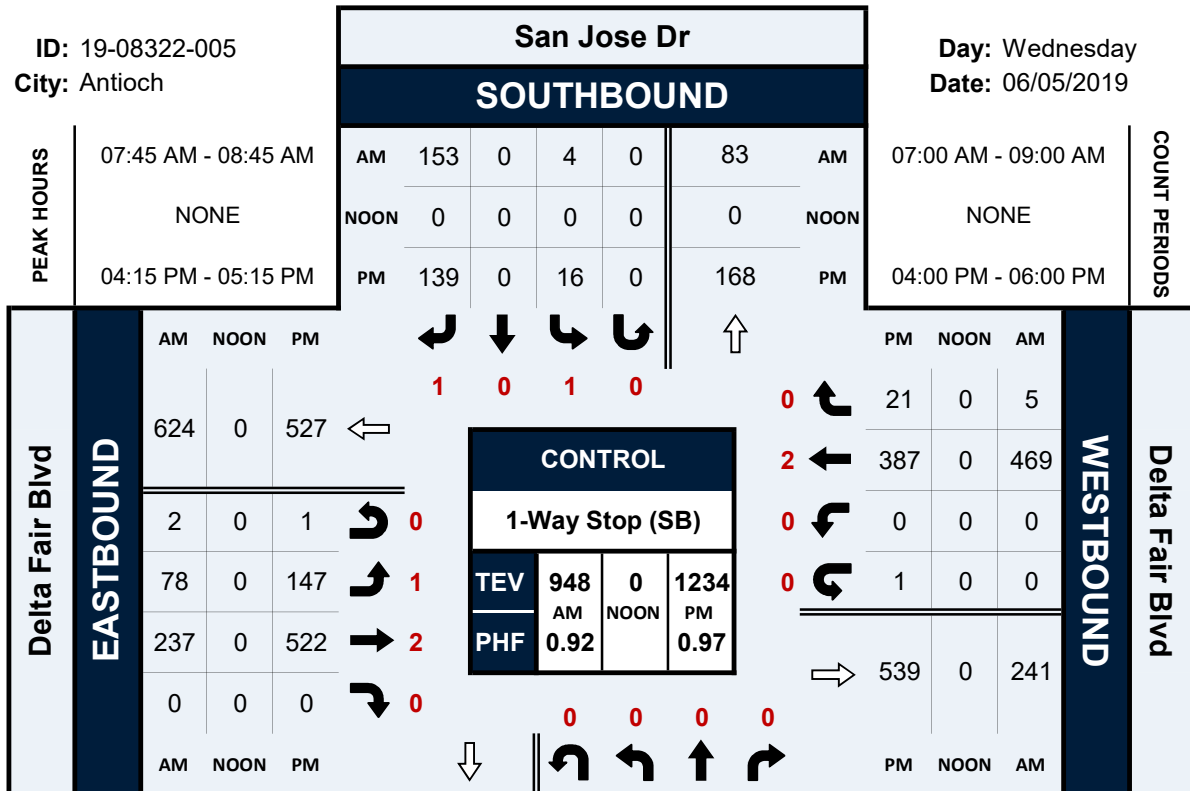


San Jose Dr & Delta Fair Blvd

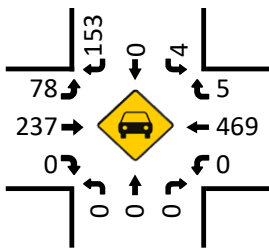
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City: Antioch

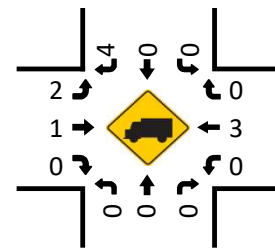
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Date: 06/05/2019



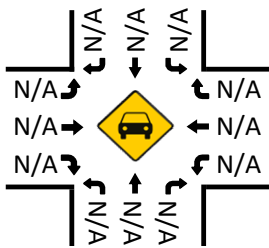
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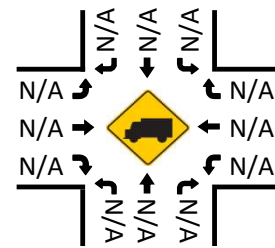
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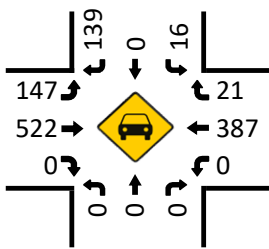
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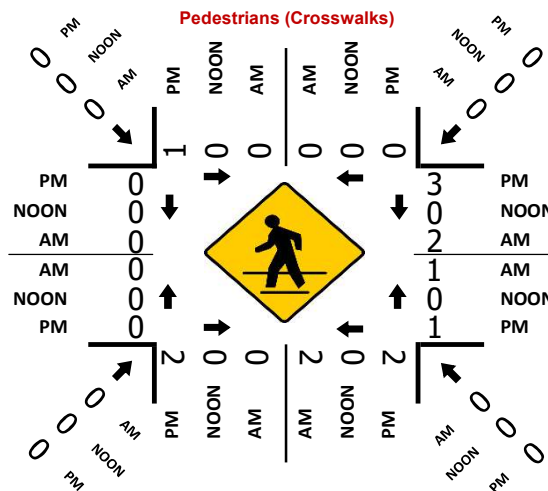
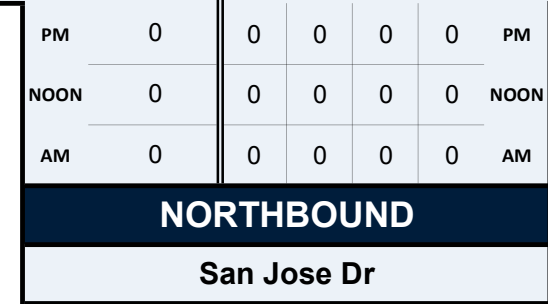
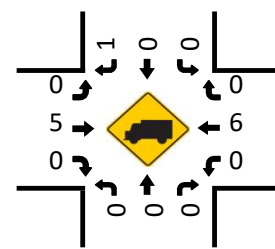
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Total Vehicles (PM)



HT (PM)

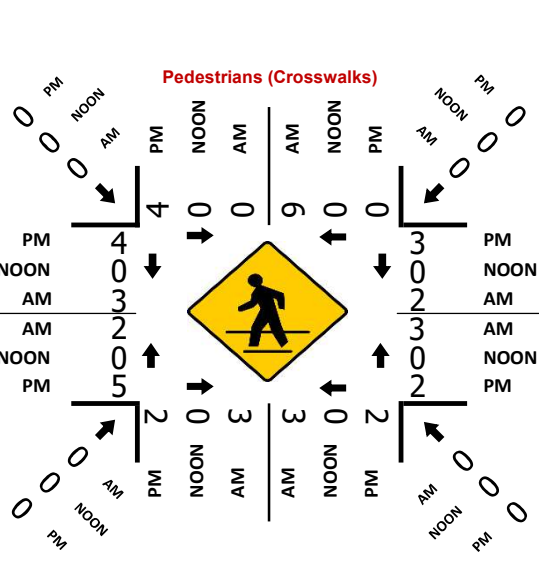
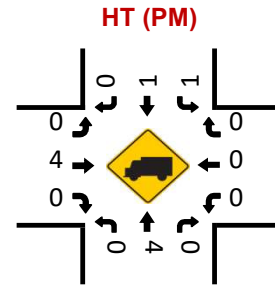
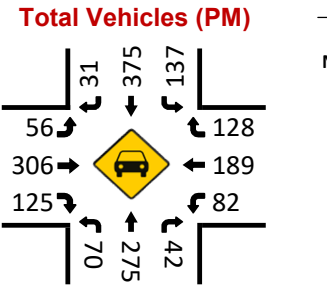
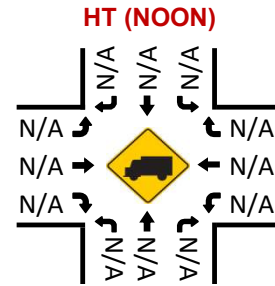
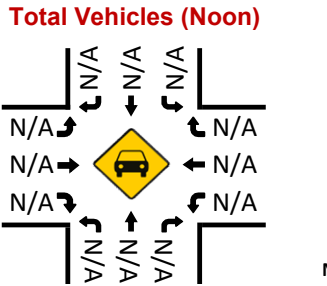
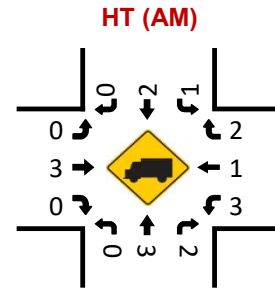
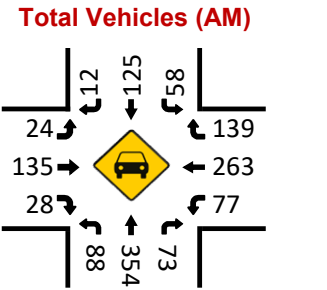
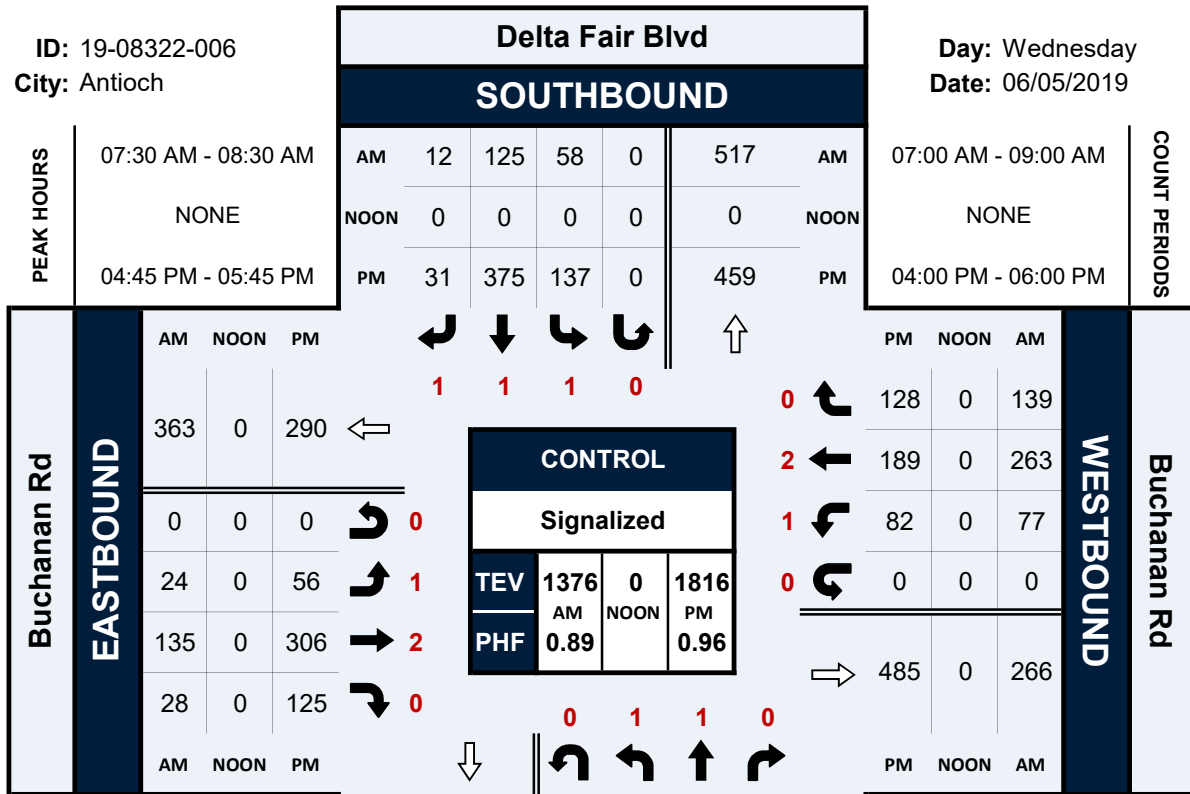


Delta Fair Blvd & Buchanan Rd

Peak Hour Turning Movement Count

ID: 19-08322-006
City: Antioch

Day: Wednesday
Date: 06/05/2019

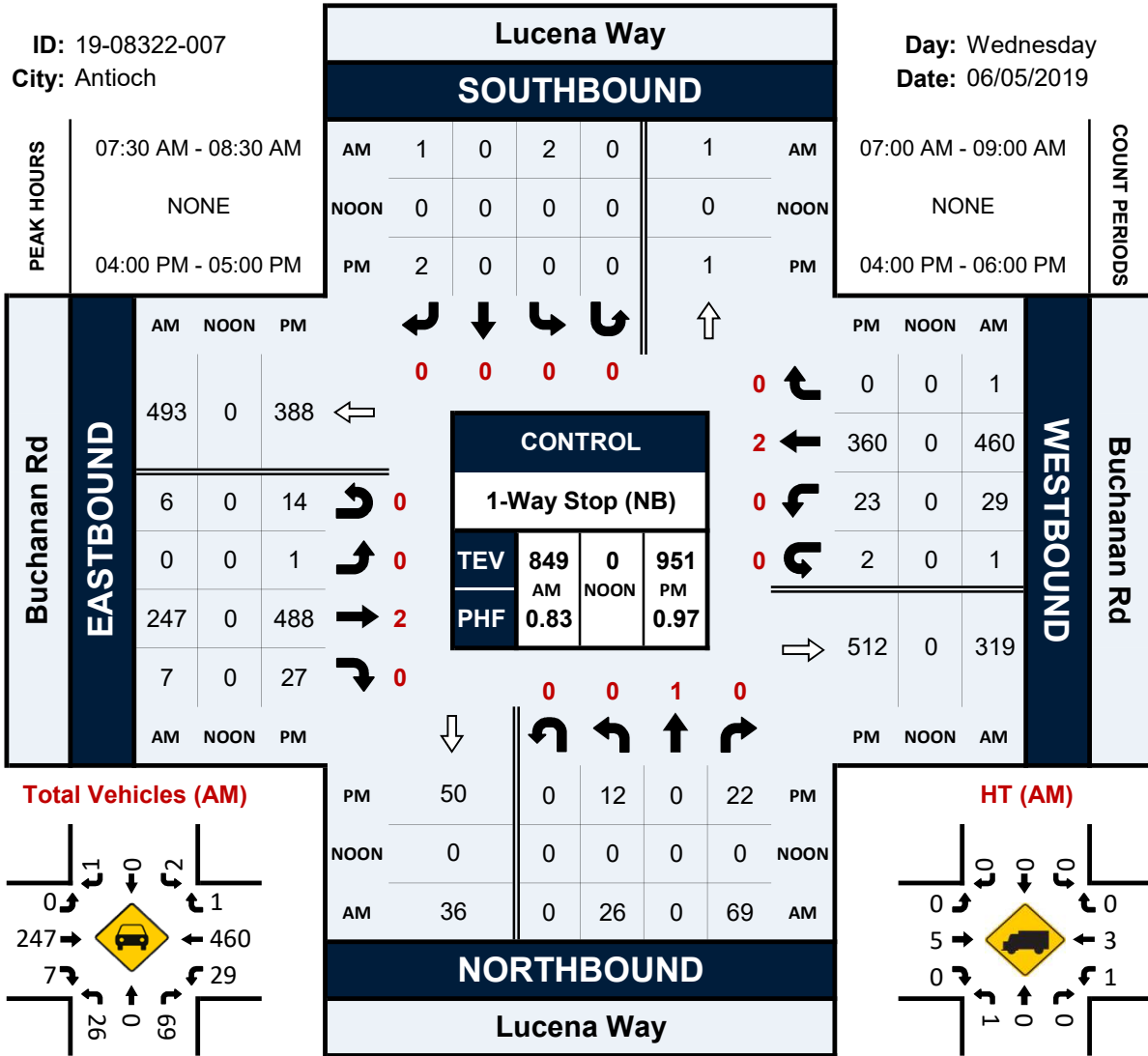


Lucena Way & Buchanan Rd

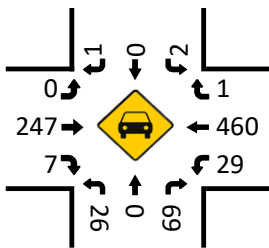
Peak Hour Turning Movement Count

ID: 19-08322-007
City: Antioch

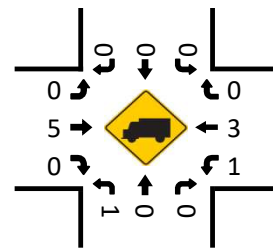
Day: Wednesday
Date: 06/05/2019



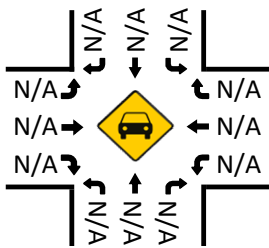
Total Vehicles (AM)



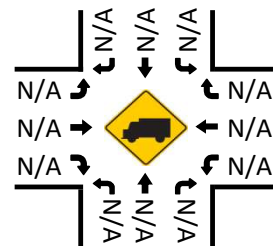
HT (AM)



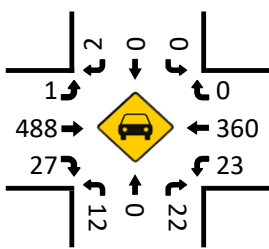
Total Vehicles (Noon)



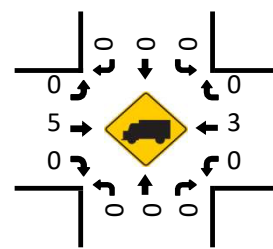
HT (NOON)



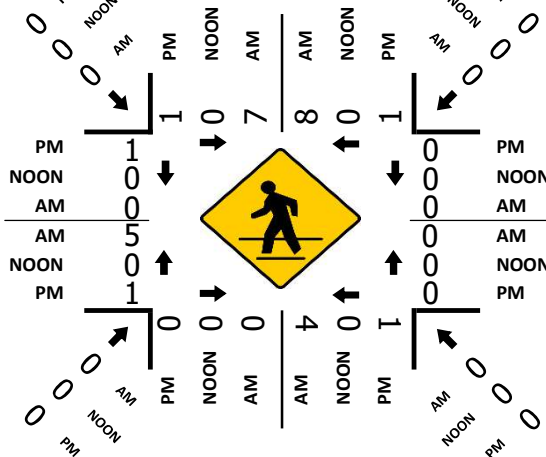
Total Vehicles (PM)



HT (PM)



Pedestrians (Crosswalks)

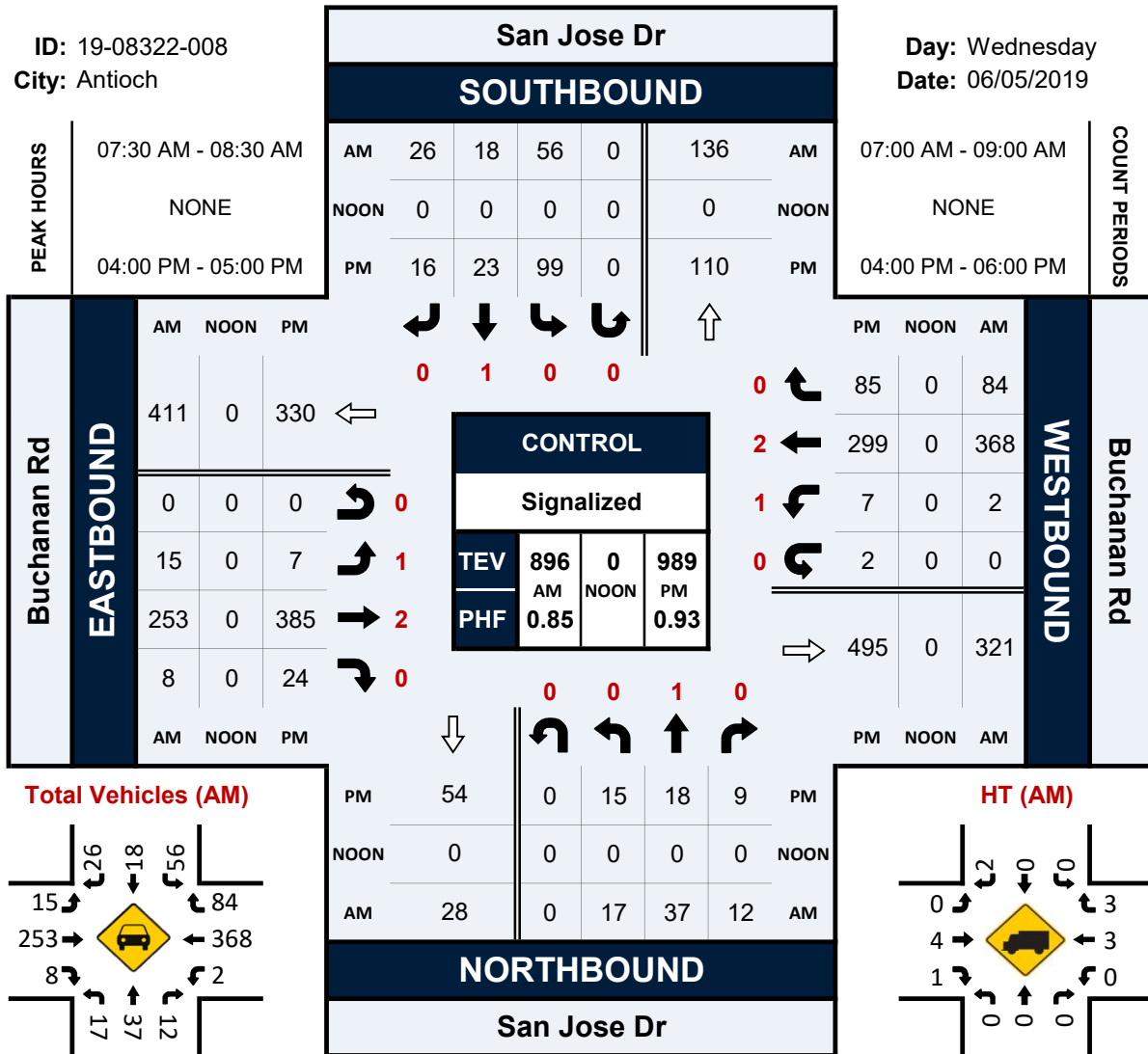


San Jose Dr & Buchanan Rd

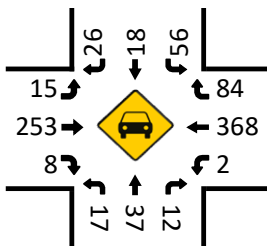
Peak Hour Turning Movement Count

ID: 19-08322-008
City: Antioch

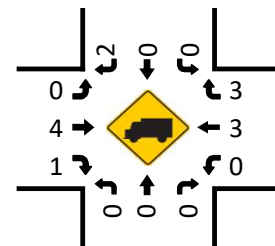
Day: Wednesday
Date: 06/05/2019



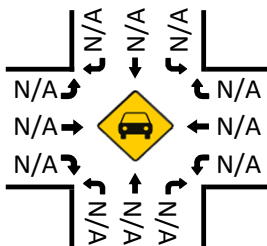
Total Vehicles (AM)



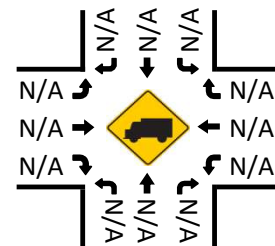
HT (AM)



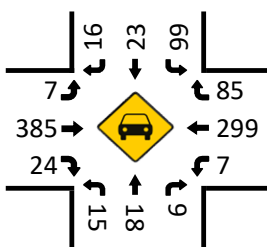
Total Vehicles (Noon)



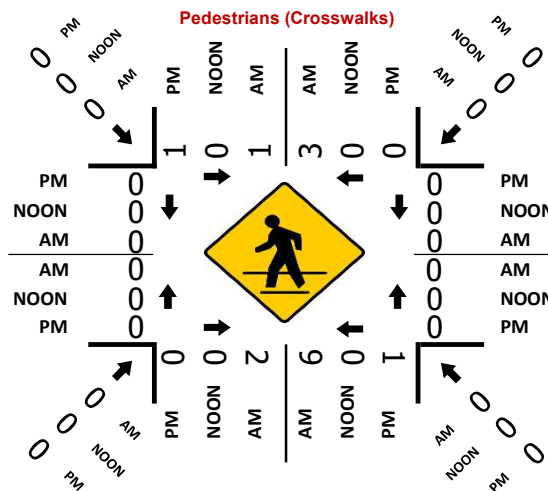
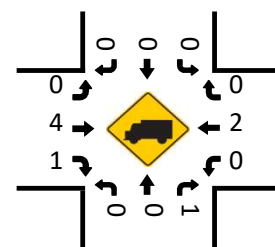
HT (NOON)



Total Vehicles (PM)



HT (PM)

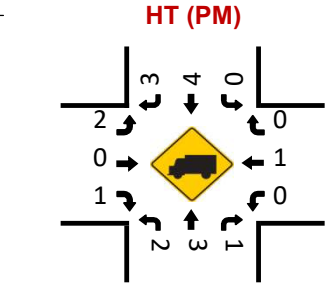
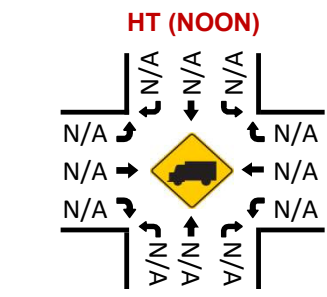
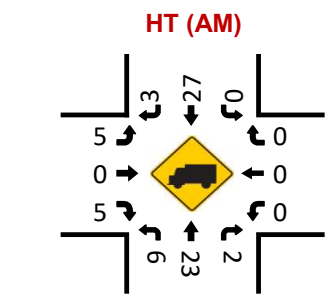
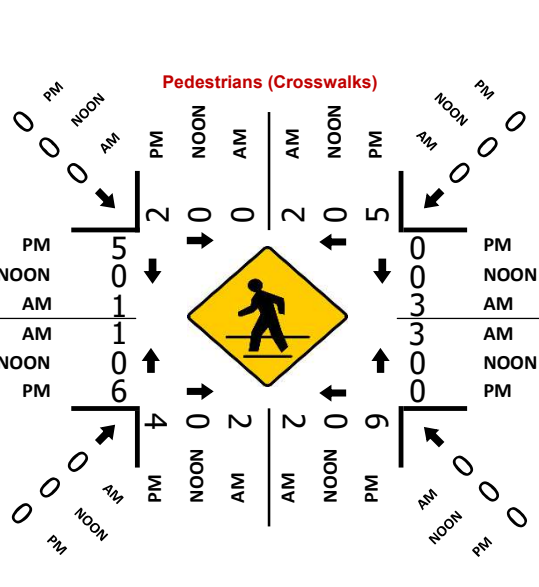
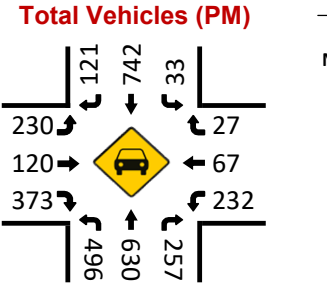
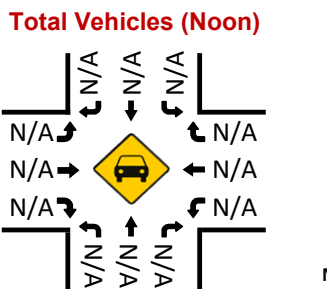
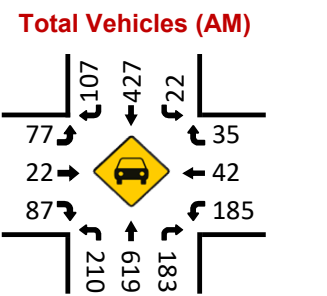
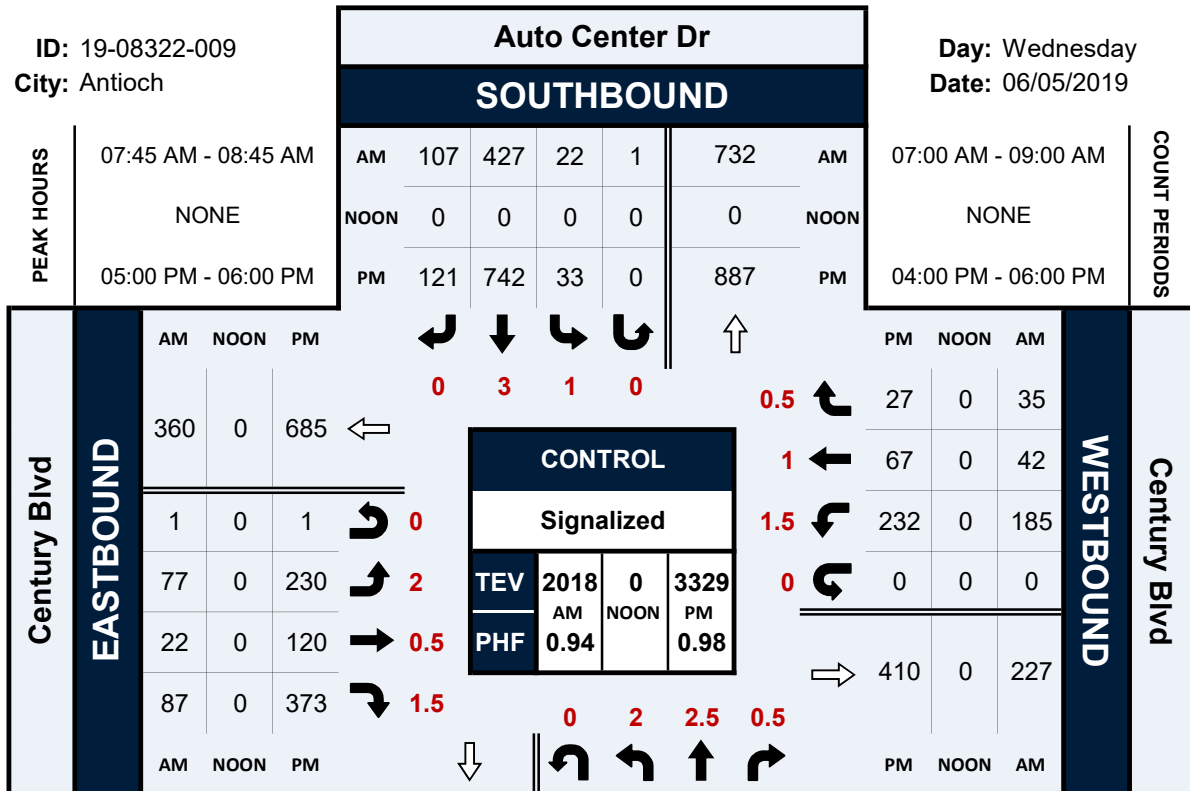


Auto Center Dr & Century Blvd

Peak Hour Turning Movement Count

ID: 19-08322-009
City: Antioch



















Day: Wednesday
Date: 06/05/2019



Appendix B: LOS Calculation Worksheets



















HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing AM

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	 		 	  	  				
Traffic Volume (veh/h)	394	495	260	619	516	204			
Future Volume (veh/h)	394	495	260	619	516	204			
Number	7	14	5	2	6	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845			
Adj Flow Rate, veh/h	419	86	277	659	549	126			
Adj No. of Lanes	2	1	2	3	3	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	3	3	3	3	3	3			
Cap, veh/h	494	227	909	3907	2375	723			
Arrive On Green	0.14	0.14	0.53	1.00	0.47	0.47			
Sat Flow, veh/h	3408	1568	3408	5202	5202	1532			
Grp Volume(v), veh/h	419	86	277	659	549	126			
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1532			
Q Serve(g_s), s	14.4	6.0	5.4	0.0	7.8	5.7			
Cycle Q Clear(g_c), s	14.4	6.0	5.4	0.0	7.8	5.7			
Prop In Lane	1.00	1.00	1.00			1.00			
Lane Grp Cap(c), veh/h	494	227	909	3907	2375	723			
V/C Ratio(X)	0.85	0.38	0.30	0.17	0.23	0.17			
Avail Cap(c_a), veh/h	710	327	909	3907	2375	723			
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.92	0.92	0.98	0.98			
Uniform Delay (d), s/veh	50.0	46.4	21.8	0.0	18.8	18.2			
Incr Delay (d2), s/veh	5.8	0.8	0.8	0.1	0.2	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.2	5.3	2.6	0.0	3.7	2.5			
LnGrp Delay(d),s/veh	55.8	47.2	22.6	0.1	19.0	18.8			
LnGrp LOS	E	D	C	A	B	B			
Approach Vol, veh/h	505			936	675				
Approach Delay, s/veh	54.4			6.7	19.0				
Approach LOS	D			A	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs	2		4		5	6			
Phs Duration (G+Y+Rc), s	98.1		21.9		36.5	61.6			
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0			
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0			
Max Q Clear Time (g_c+I1), s	2.0		16.4		7.4	9.8			
Green Ext Time (p_c), s	7.7		1.0		0.8	2.8			
Intersection Summary									
HCM 2010 Ctrl Delay			22.0						
HCM 2010 LOS			C						
Notes									

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing AM

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	 		 	  	  				
Traffic Volume (veh/h)	394	495	260	619	516	204			
Future Volume (veh/h)	394	495	260	619	516	204			
Number	7	14	5	2	6	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845			
Adj Flow Rate, veh/h	419	86	277	659	549	126			
Adj No. of Lanes	2	1	2	3	3	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	3	3	3	3	3	3			
Cap, veh/h	494	227	909	3907	2375	723			
Arrive On Green	0.14	0.14	0.53	1.00	0.47	0.47			
Sat Flow, veh/h	3408	1568	3408	5202	5202	1532			
Grp Volume(v), veh/h	419	86	277	659	549	126			
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1532			
Q Serve(g_s), s	14.4	6.0	5.4	0.0	7.8	5.7			
Cycle Q Clear(g_c), s	14.4	6.0	5.4	0.0	7.8	5.7			
Prop In Lane	1.00	1.00	1.00				1.00		
Lane Grp Cap(c), veh/h	494	227	909	3907	2375	723			
V/C Ratio(X)	0.85	0.38	0.30	0.17	0.23	0.17			
Avail Cap(c_a), veh/h	710	327	909	3907	2375	723			
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.92	0.92	0.98	0.98			
Uniform Delay (d), s/veh	50.0	46.4	21.8	0.0	18.8	18.2			
Incr Delay (d2), s/veh	5.8	0.8	0.8	0.1	0.2	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.2	5.3	2.6	0.0	3.7	2.5			
LnGrp Delay(d),s/veh	55.8	47.2	22.6	0.1	19.0	18.8			
LnGrp LOS	E	D	C	A	B	B			
Approach Vol, veh/h	505			936	675				
Approach Delay, s/veh	54.4			6.7	19.0				
Approach LOS	D			A	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs	2		4		5	6			
Phs Duration (G+Y+Rc), s	98.1		21.9		36.5	61.6			
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0			
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0			
Max Q Clear Time (g_c+I1), s	2.0		16.4		7.4	9.8			
Green Ext Time (p_c), s	7.7		1.0		0.8	2.8			
Intersection Summary									
HCM 2010 Ctrl Delay			22.0						
HCM 2010 LOS			C						
Notes									

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	225	0	299	0	0	0	0	654	482	204	807	0
Future Volume (veh/h)	225	0	299	0	0	0	0	654	482	204	807	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	253	0	48				0	944	291	229	907	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	307	0	248				0	3882	1064	279	4163	0
Arrive On Green	0.09	0.00	0.09				0.00	0.70	0.70	0.16	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	5534	1516	3408	5202	0
Grp Volume(v), veh/h	253	0	48				0	944	291	229	907	0
Grp Sat Flow(s),veh/h/ln1704	0	1380					0	1845	1516	1704	1679	0
Q Serve(g_s), s	8.8	0.0	1.9				0.0	7.4	8.5	7.8	0.0	0.0
Cycle Q Clear(g_c), s	8.8	0.0	1.9				0.0	7.4	8.5	7.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	307	0	248				0	3882	1064	279	4163	0
V/C Ratio(X)	0.82	0.00	0.19				0.00	0.24	0.27	0.82	0.22	0.00
Avail Cap(c_a), veh/h	738	0	598				0	3882	1064	767	4163	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.88	0.88	0.86	0.86	0.00
Uniform Delay (d), s/veh	53.7	0.0	50.6				0.0	6.4	6.6	49.3	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.1				0.0	0.1	0.6	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln4.2	0.0	0.0	0.7				0.0	3.8	3.7	3.7	0.0	0.0
LnGrp Delay(d),s/veh	55.8	0.0	50.7				0.0	6.6	7.2	51.3	0.1	0.0
LnGrp LOS	E		D					A	A	D	A	
Approach Vol, veh/h		301						1235			1136	
Approach Delay, s/veh		55.0						6.7			10.4	
Approach LOS		D						A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s5.0	89.5			15.5		104.5						
Change Period (Y+Rc), s5.2	5.3			* 4.7		5.3						
Max Green Setting (Gmax), s27	51.8			* 26		84.0						
Max Q Clear Time (g_c+I), s19.8	10.5			10.8		2.0						
Green Ext Time (p_c), s	0.0	1.3		0.0		1.3						
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Somersville Rd & Delta Fair Blvd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	106	16	48	214	357	57	478	6	265	446	390
Future Volume (veh/h)	281	106	16	48	214	357	57	478	6	265	446	390
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	312	118	14	53	238	68	63	531	6	294	496	194
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	196	23	292	306	257	81	1083	12	358	929	413
Arrive On Green	0.12	0.12	0.12	0.16	0.16	0.16	0.05	0.21	0.21	0.03	0.09	0.09
Sat Flow, veh/h	3548	1632	194	1774	1863	1560	1774	5182	58	3442	3539	1572
Grp Volume(v), veh/h	312	0	132	53	238	68	63	347	190	294	496	194
Grp Sat Flow(s),veh/h/ln	1774	0	1825	1774	1863	1560	1774	1695	1851	1721	1770	1572
Q Serve(g_s), s	10.2	0.0	8.2	3.1	14.7	4.6	4.2	10.8	10.9	10.2	16.1	14.1
Cycle Q Clear(g_c), s	10.2	0.0	8.2	3.1	14.7	4.6	4.2	10.8	10.9	10.2	16.1	14.1
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	427	0	220	292	306	257	81	708	387	358	929	413
V/C Ratio(X)	0.73	0.00	0.60	0.18	0.78	0.26	0.78	0.49	0.49	0.82	0.53	0.47
Avail Cap(c_a), veh/h	721	0	371	510	536	449	169	708	387	531	929	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	0.96	0.96	0.96
Uniform Delay (d), s/veh	50.9	0.0	50.0	43.2	48.0	43.8	56.7	41.8	41.8	56.8	47.8	46.9
Incr Delay (d2), s/veh	1.8	0.0	2.0	0.1	1.6	0.2	5.2	2.1	3.9	3.8	2.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.3	1.5	7.7	2.0	2.2	5.3	6.0	5.1	8.2	6.6
LnGrp Delay(d),s/veh	52.7	0.0	52.0	43.3	49.6	44.0	61.9	43.9	45.7	60.6	49.9	50.5
LnGrp LOS	D		D	D	D	D	E	D	D	E	D	D
Approach Vol, veh/h		444			359			600			984	
Approach Delay, s/veh		52.5			47.6			46.4			53.2	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.5	29.7		18.9	10.1	36.1		24.2				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	18.5	25.0		24.4	11.4	31.5		34.5				
Max Q Clear Time (g_c+1/2), s	12.2	12.9		12.2	6.2	18.1		16.7				
Green Ext Time (p_c), s	0.3	5.5		1.2	0.0	7.1		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			50.5									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	117	131	28	228	80	301	352	17	46	164	182
Future Volume (veh/h)	257	117	131	28	228	80	301	352	17	46	164	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	292	133	0	32	259	0	342	400	17	52	186	32
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	319	1125	503	67	327	278	377	1634	69	79	1064	476
Arrive On Green	0.18	0.31	0.00	0.04	0.17	0.00	0.21	0.47	0.47	0.04	0.30	0.30
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3492	148	1792	3574	1599
Grp Volume(v), veh/h	292	133	0	32	259	0	342	204	213	52	186	32
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1853	1792	1787	1599
Q Serve(g_s), s	21.5	3.6	0.0	2.4	17.7	0.0	25.0	9.2	9.3	3.8	5.2	1.9
Cycle Q Clear(g_c), s	21.5	3.6	0.0	2.4	17.7	0.0	25.0	9.2	9.3	3.8	5.2	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	319	1125	503	67	327	278	377	836	867	79	1064	476
V/C Ratio(X)	0.92	0.12	0.00	0.48	0.79	0.00	0.91	0.24	0.25	0.66	0.17	0.07
Avail Cap(c_a), veh/h	427	1125	503	267	560	476	600	836	867	400	1064	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	32.8	0.0	63.4	53.1	0.0	51.8	21.5	21.5	63.2	35.0	33.8
Incr Delay (d2), s/veh	19.2	0.2	0.0	3.9	17.5	0.0	13.0	0.7	0.7	6.8	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	1.8	0.0	1.2	10.8	0.0	13.7	4.7	4.9	2.1	2.6	0.9
LnGrp Delay(d),s/veh	73.4	33.0	0.0	67.3	70.7	0.0	64.7	22.2	22.2	70.0	35.3	34.1
LnGrp LOS	E	C		E	E		E	C	C	E	D	C
Approach Vol, veh/h		425			291			759			270	
Approach Delay, s/veh		60.8			70.3			41.4			41.9	
Approach LOS		E			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	67.9	9.0	47.6	32.8	45.0	27.9	28.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+1), s	15.8	11.3	4.4	5.6	27.0	7.2	23.5	19.7				
Green Ext Time (p_c), s	0.1	2.0	0.0	2.1	1.2	1.8	0.4	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			51.0									
HCM 2010 LOS			D									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	80	237	469	5	4	153
Future Vol, veh/h	80	237	469	5	4	153
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	87	258	510	5	4	166


























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	518	0	-	0	822 261
Stage 1	-	-	-	-	516 -
Stage 2	-	-	-	-	306 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	1051	-	-	-	314 741
Stage 1	-	-	-	-	567 -
Stage 2	-	-	-	-	723 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1048	-	-	-	286 739
Mov Cap-2 Maneuver	-	-	-	-	388 -
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	721 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1048	-	-	-	388	739
HCM Lane V/C Ratio	0.083	-	-	-	0.011	0.225
HCM Control Delay (s)	8.7	-	-	-	14.4	11.3
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0.9

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	24	135	28	77	297	139	88	354	73	58	125	12
Future Volume (veh/h)	24	135	28	77	297	139	88	354	73	58	125	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	27	152	12	87	334	101	99	398	75	65	140	3
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	89	641	50	152	612	182	164	512	96	128	590	493
Arrive On Green	0.05	0.19	0.19	0.08	0.23	0.23	0.09	0.33	0.33	0.07	0.31	0.31
Sat Flow, veh/h	1792	3349	261	1792	2701	802	1792	1535	289	1792	1881	1571
Grp Volume(v), veh/h	27	80	84	87	219	216	99	0	473	65	140	3
Grp Sat Flow(s),veh/h/ln	1792	1787	1823	1792	1787	1716	1792	0	1824	1792	1881	1571
Q Serve(g_s), s	0.8	2.1	2.2	2.6	6.1	6.3	3.0	0.0	13.2	2.0	3.1	0.1
Cycle Q Clear(g_c), s	0.8	2.1	2.2	2.6	6.1	6.3	3.0	0.0	13.2	2.0	3.1	0.1
Prop In Lane	1.00		0.14	1.00		0.47	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	89	342	349	152	405	389	164	0	608	128	590	493
V/C Ratio(X)	0.30	0.23	0.24	0.57	0.54	0.56	0.60	0.00	0.78	0.51	0.24	0.01
Avail Cap(c_a), veh/h	634	949	968	634	949	911	634	0	968	634	999	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	19.3	19.4	24.9	19.3	19.3	24.7	0.0	16.9	25.3	14.4	13.3
Incr Delay (d2), s/veh	1.9	0.5	0.5	3.4	1.6	1.8	3.5	0.0	3.1	3.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.1	1.1	1.4	3.2	3.1	1.6	0.0	7.1	1.1	1.6	0.0
LnGrp Delay(d),s/veh	27.8	19.8	19.9	28.2	20.9	21.1	28.2	0.0	20.0	28.3	14.7	13.4
LnGrp LOS	C	B	B	C	C	C	C		C	C	B	B
Approach Vol, veh/h		191			522			572			208	
Approach Delay, s/veh		21.0			22.2			21.4			18.9	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	23.9	8.8	15.8	9.2	22.7	6.8	17.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	4.0	15.2	4.6	4.2	5.0	5.1	2.8	8.3				
Green Ext Time (p_c), s	0.1	3.6	0.2	1.2	0.2	1.0	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			21.3									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	253	7	30	460	1	26	0	69	0	0	1
Future Vol, veh/h	0	253	7	30	460	1	26	0	69	0	0	1
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	305	8	36	554	1	31	0	83	0	0	1



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	555	0	0	317	0	0	667	940	161	780	944	283
Stage 1	-	-	-	-	-	-	313	313	-	627	627	-
Stage 2	-	-	-	-	-	-	354	627	-	153	317	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1011	-	-	1247	-	-	346	262	859	285	261	714
Stage 1	-	-	-	-	-	-	675	656	-	438	474	-
Stage 2	-	-	-	-	-	-	639	474	-	834	653	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1011	-	-	1242	-	-	331	250	856	249	249	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	250	-	249	249	-
Stage 1	-	-	-	-	-	-	672	653	-	438	454	-
Stage 2	-	-	-	-	-	-	608	454	-	753	650	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.6			12.5			10.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	597	1011	-	-	1242	-	-	711
HCM Lane V/C Ratio	0.192	-	-	-	0.029	-	-	0.002
HCM Control Delay (s)	12.5	0	-	-	8	0.1	-	10.1
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	253	8	2	368	84	17	37	12	56	18	26
Future Volume (veh/h)	15	253	8	2	368	84	17	37	12	56	18	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	18	298	5	2	433	75	20	44	3	66	21	13
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	130	1261	21	123	1053	181	209	124	8	311	34	21
Arrive On Green	0.07	0.35	0.35	0.07	0.35	0.35	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1792	3595	60	1792	3037	522	483	1218	80	1051	334	207
Grp Volume(v), veh/h	18	148	155	2	253	255	67	0	0	100	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1772	1781	0	0	1593	0	0
Q Serve(g_s), s	0.3	1.7	1.7	0.0	3.2	3.2	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.3	1.7	1.7	0.0	3.2	3.2	1.0	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.29	0.30		0.04	0.66		0.13
Lane Grp Cap(c), veh/h	130	627	655	123	620	615	341	0	0	366	0	0
V/C Ratio(X)	0.14	0.24	0.24	0.02	0.41	0.41	0.20	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	1226	2447	2557	1226	2447	2426	1324	0	0	1229	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	6.7	6.7	12.7	7.3	7.3	12.2	0.0	0.0	12.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.0	0.6	0.6	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.9	0.0	1.7	1.7	0.5	0.0	0.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	12.9	7.0	7.0	12.7	7.9	7.9	12.3	0.0	0.0	12.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		321			510			67			100	
Approach Delay, s/veh		7.3			7.9			12.3			12.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	16.2		7.0	6.1	16.1		7.0				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	3.7		3.7	2.3	5.2		3.0				
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	4.7		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			8.5									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↗	↔	↔		↔	↑↑↑		↔	↑↑↑	
Traffic Volume (veh/h)	78	22	87	185	42	35	210	620	183	23	427	107
Future Volume (veh/h)	78	22	87	185	42	35	210	620	183	23	427	107
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	83	36	31	197	45	14	223	660	0	24	454	97
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	187	98	80	290	111	34	1500	3406	0	32	1059	220
Arrive On Green	0.05	0.05	0.05	0.08	0.08	0.08	0.89	1.00	0.00	0.02	0.26	0.26
Sat Flow, veh/h	3480	1827	1494	3480	1330	414	3375	5152	0	1740	4128	857
Grp Volume(v), veh/h	83	36	31	197	0	59	223	660	0	24	363	188
Grp Sat Flow(s),veh/h/ln	1740	1827	1494	1740	0	1743	1688	1663	0	1740	1663	1659
Q Serve(g_s), s	2.8	2.3	2.4	6.6	0.0	3.9	1.0	0.0	0.0	1.6	10.9	11.4
Cycle Q Clear(g_c), s	2.8	2.3	2.4	6.6	0.0	3.9	1.0	0.0	0.0	1.6	10.9	11.4
Prop In Lane	1.00		1.00	1.00		0.24	1.00		0.00	1.00		0.52
Lane Grp Cap(c), veh/h	187	98	80	290	0	145	1500	3406	0	32	853	426
V/C Ratio(X)	0.44	0.37	0.39	0.68	0.00	0.41	0.15	0.19	0.00	0.75	0.43	0.44
Avail Cap(c_a), veh/h	783	411	336	1009	0	506	1500	3406	0	200	853	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.92	0.92	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	54.8	54.8	53.5	0.0	52.2	3.8	0.0	0.0	58.6	37.2	37.4
Incr Delay (d2), s/veh	0.6	0.8	1.1	1.1	0.0	0.7	0.0	0.1	0.0	12.3	1.6	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	1.0	3.2	0.0	1.9	0.4	0.0	0.0	0.9	5.2	5.6
LnGrp Delay(d),s/veh	55.6	55.6	56.0	54.5	0.0	52.9	3.8	0.1	0.0	70.9	38.8	40.7
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		150			256			883			575	
Approach Delay, s/veh		55.7			54.1			1.0			40.7	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	59.3	35.8		10.7	7.2	87.9		14.2				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+I), s	13.0	13.4		4.8	3.6	2.0		8.6				
Green Ext Time (p_c), s	0.2	2.1		0.3	0.0	9.7		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				25.0								
HCM 2010 LOS				C								
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing PM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	445	573	322	937	1051	367		
Future Volume (veh/h)	445	573	322	937	1051	367		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	468	290	339	986	1106	180		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	717	330	400	3701	2932	881		
Arrive On Green	0.21	0.21	0.23	1.00	0.57	0.57		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1543		
Grp Volume(v), veh/h	468	290	339	986	1106	180		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1543		
Q Serve(g_s), s	16.1	22.9	12.1	0.0	15.3	7.4		
Cycle Q Clear(g_c), s	16.1	22.9	12.1	0.0	15.3	7.4		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	717	330	400	3701	2932	881		
V/C Ratio(X)	0.65	0.88	0.85	0.27	0.38	0.20		
Avail Cap(c_a), veh/h	1069	492	722	3701	2932	881		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.73	0.73	0.92	0.92		
Uniform Delay (d), s/veh	47.3	50.0	49.0	0.0	15.2	13.5		
Incr Delay (d2), s/veh	0.8	10.3	3.2	0.1	0.3	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.8	19.6	5.9	0.0	7.3	3.3		
LnGrp Delay(d),s/veh	48.1	60.3	52.2	0.1	15.6	14.0		
LnGrp LOS	D	E	D	A	B	B		
Approach Vol, veh/h	758			1325	1286			
Approach Delay, s/veh	52.8			13.4	15.4			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	98.7		31.3		19.4	79.2		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		24.9		14.1	17.3		
Green Ext Time (p_c), s	13.3		2.0		0.8	6.3		
Intersection Summary								
HCM 2010 Ctrl Delay			23.0					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT		TT					TTT	T	TT	TTT	
Traffic Volume (veh/h)	403	0	565	0	0	0	0	856	685	651	973	0
Future Volume (veh/h)	403	0	565	0	0	0	0	856	685	651	973	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	0	1881				0	1881	1881	1881	1881	0
Adj Flow Rate, veh/h	420	0	373				0	1156	356	678	1014	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1				0	1	1	1	1	0
Cap, veh/h	511	0	413				0	2548	704	989	3986	0
Arrive On Green	0.15	0.00	0.15				0.00	0.45	0.45	0.38	1.00	0.00
Sat Flow, veh/h	3476	0	2814				0	5644	1559	3476	5305	0
Grp Volume(v), veh/h	420	0	373				0	1156	356	678	1014	0
Grp Sat Flow(s),veh/h/ln	1738	0	1407				0	1881	1559	1738	1712	0
Q Serve(g_s), s	15.2	0.0	16.9				0.0	18.4	21.1	21.3	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	16.9				0.0	18.4	21.1	21.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	511	0	413				0	2548	704	989	3986	0
V/C Ratio(X)	0.82	0.00	0.90				0.00	0.45	0.51	0.69	0.25	0.00
Avail Cap(c_a), veh/h	829	0	671				0	2548	704	989	3986	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.81	0.81	0.79	0.79	0.00
Uniform Delay (d), s/veh	53.8	0.0	54.5				0.0	24.6	25.3	35.5	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	6.4				0.0	0.5	2.1	3.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	6.9				0.0	9.6	9.5	10.5	0.0	0.0
LnGrp Delay(d),s/veh	55.3	0.0	60.9				0.0	25.1	27.4	38.6	0.1	0.0
LnGrp LOS	E		E					C	C	D	A	
Approach Vol, veh/h		793						1512			1692	
Approach Delay, s/veh		57.9						25.6			15.5	
Approach LOS		E						C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	42.2	64.0		23.8		106.2						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	37	46.8		* 31		89.0						
Max Q Clear Time (g_c+Y), s	23.3	23.1		18.9		2.0						
Green Ext Time (p_c), s	0.1	1.6		0.2		1.5						
Intersection Summary												
HCM 2010 Ctrl Delay			27.8									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	209	37	42	151	366	61	646	27	527	663	348
Future Volume (veh/h)	480	209	37	42	151	366	61	646	27	527	663	348
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	495	215	33	43	156	45	63	666	26	543	684	174
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	592	262	40	217	228	190	85	1013	39	595	1141	496
Arrive On Green	0.17	0.17	0.17	0.12	0.12	0.12	0.05	0.20	0.20	0.29	0.53	0.53
Sat Flow, veh/h	3583	1586	243	1792	1881	1567	1792	5065	197	3476	3574	1555
Grp Volume(v), veh/h	495	0	248	43	156	45	63	449	243	543	684	174
Grp Sat Flow(s),veh/h/ln	1792	0	1830	1792	1881	1567	1792	1712	1838	1738	1787	1555
Q Serve(g_s), s	17.4	0.0	17.0	2.8	10.3	3.4	4.5	15.7	15.8	19.6	17.1	8.4
Cycle Q Clear(g_c), s	17.4	0.0	17.0	2.8	10.3	3.4	4.5	15.7	15.8	19.6	17.1	8.4
Prop In Lane	1.00		0.13	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	592	0	302	217	228	190	85	685	368	595	1141	496
V/C Ratio(X)	0.84	0.00	0.82	0.20	0.68	0.24	0.74	0.66	0.66	0.91	0.60	0.35
Avail Cap(c_a), veh/h	703	0	359	460	483	403	157	685	368	735	1141	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.89	0.89	0.89	0.86	0.86	0.86
Uniform Delay (d), s/veh	52.6	0.0	52.4	51.4	54.7	51.7	61.1	47.9	47.9	45.5	24.6	22.6
Incr Delay (d2), s/veh	7.1	0.0	11.4	0.2	1.4	0.2	4.1	4.3	8.0	11.0	2.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	0.0	9.6	1.4	5.5	1.5	2.3	7.8	8.8	10.3	8.7	3.8
LnGrp Delay(d),s/veh	59.7	0.0	63.8	51.6	56.1	51.9	65.3	52.2	55.9	56.4	26.7	24.3
LnGrp LOS	E		E	D	E	D	E	D	E	E	C	C
Approach Vol, veh/h		743			244			755			1401	
Approach Delay, s/veh		61.1			54.5			54.5			37.9	
Approach LOS		E			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.3	30.6		26.0	10.8	46.1		20.3				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	27.5	26.0		25.5	11.4	41.5		33.4				
Max Q Clear Time (g_c+0.1), s	21.6	17.8		19.4	6.5	19.1		12.3				
Green Ext Time (p_c), s	0.7	5.0		1.5	0.0	12.7		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			48.6									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	348	401	41	164	64	244	216	14	123	388	300
Future Volume (veh/h)	311	348	401	41	164	64	244	216	14	123	388	300
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	324	362	0	43	171	0	254	225	12	128	404	162
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	378	1058	473	126	293	249	319	984	52	180	718	320
Arrive On Green	0.21	0.29	0.00	0.07	0.15	0.00	0.18	0.28	0.28	0.10	0.20	0.20
Sat Flow, veh/h	1810	3610	1615	1810	1900	1615	1810	3485	185	1810	3610	1611
Grp Volume(v), veh/h	324	362	0	43	171	0	254	116	121	128	404	162
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1900	1615	1810	1805	1864	1810	1805	1611
Q Serve(g_s), s	12.4	5.6	0.0	1.6	6.0	0.0	9.6	3.5	3.6	4.9	7.2	6.4
Cycle Q Clear(g_c), s	12.4	5.6	0.0	1.6	6.0	0.0	9.6	3.5	3.6	4.9	7.2	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	378	1058	473	126	293	249	319	510	526	180	718	320
V/C Ratio(X)	0.86	0.34	0.00	0.34	0.58	0.00	0.80	0.23	0.23	0.71	0.56	0.51
Avail Cap(c_a), veh/h	807	2014	901	505	1060	901	1136	1007	1040	757	2014	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	19.9	0.0	31.8	28.2	0.0	28.3	19.7	19.7	31.3	25.9	25.6
Incr Delay (d2), s/veh	4.3	0.9	0.0	1.2	8.3	0.0	5.4	0.2	0.2	3.8	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	2.9	0.0	0.9	3.8	0.0	5.3	1.8	1.9	2.6	3.7	3.0
LnGrp Delay(d),s/veh	31.6	20.8	0.0	33.0	36.5	0.0	33.7	19.9	19.9	35.1	26.9	27.4
LnGrp LOS	C	C		C	D		C	B	B	D	C	C
Approach Vol, veh/h		686			214			491			694	
Approach Delay, s/veh		25.9			35.8			27.1			28.5	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	25.3	9.0	26.3	17.1	19.3	19.0	16.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+10), s	10.9	5.6	3.6	7.6	11.6	9.2	14.4	8.0				
Green Ext Time (p_c), s	0.2	1.1	0.0	6.3	1.0	4.9	0.6	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			28.1									
HCM 2010 LOS			C									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	148	522	387	21	16	139
Future Vol, veh/h	148	522	387	21	16	139
Conflicting Peds, #/hr	1	0	0	1	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	153	538	399	22	16	143


























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	422	0	-	0	990
Stage 1	-	-	-	-	411
Stage 2	-	-	-	-	579
Critical Hdwy	4.12	-	-	-	6.82
Critical Hdwy Stg 1	-	-	-	-	5.82
Critical Hdwy Stg 2	-	-	-	-	5.82
Follow-up Hdwy	2.21	-	-	-	3.51
Pot Cap-1 Maneuver	1141	-	-	-	245
Stage 1	-	-	-	-	641
Stage 2	-	-	-	-	526
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1140	-	-	-	212
Mov Cap-2 Maneuver	-	-	-	-	293
Stage 1	-	-	-	-	554
Stage 2	-	-	-	-	525

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1140	-	-	-	293	795
HCM Lane V/C Ratio	0.134	-	-	-	0.056	0.18
HCM Control Delay (s)	8.6	-	-	-	18	10.5
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.2	0.7

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Existing PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	54	310	109	58	212	117	73	244	31	183	382	26
Future Volume (veh/h)	54	310	109	58	212	117	73	244	31	183	382	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	57	326	83	61	223	57	77	257	29	193	402	9
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	125	606	152	129	614	153	146	377	42	265	553	461
Arrive On Green	0.07	0.22	0.22	0.07	0.22	0.22	0.08	0.23	0.23	0.15	0.29	0.29
Sat Flow, veh/h	1792	2820	706	1792	2827	706	1792	1659	187	1792	1881	1568
Grp Volume(v), veh/h	57	205	204	61	139	141	77	0	286	193	402	9
Grp Sat Flow(s),veh/h/ln	1792	1787	1739	1792	1787	1746	1792	0	1846	1792	1881	1568
Q Serve(g_s), s	1.6	5.4	5.6	1.7	3.5	3.7	2.2	0.0	7.5	5.5	10.2	0.2
Cycle Q Clear(g_c), s	1.6	5.4	5.6	1.7	3.5	3.7	2.2	0.0	7.5	5.5	10.2	0.2
Prop In Lane	1.00		0.41	1.00		0.40	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	125	384	374	129	388	379	146	0	419	265	553	461
V/C Ratio(X)	0.46	0.53	0.55	0.47	0.36	0.37	0.53	0.00	0.68	0.73	0.73	0.02
Avail Cap(c_a), veh/h	673	1007	980	673	1007	984	673	0	1040	673	1060	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	18.5	18.6	23.7	17.7	17.7	23.5	0.0	18.8	21.7	16.9	13.4
Incr Delay (d2), s/veh	2.6	1.6	1.8	2.7	0.8	0.9	3.0	0.0	2.8	3.8	2.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.8	2.9	1.0	1.8	1.9	1.2	0.0	4.1	3.0	5.7	0.1
LnGrp Delay(d),s/veh	26.4	20.2	20.4	26.4	18.5	18.6	26.4	0.0	21.6	25.5	19.5	13.4
LnGrp LOS	C	C	C	C	B	B	C		C	C	B	B
Approach Vol, veh/h		466			341			363			604	
Approach Delay, s/veh		21.0			20.0			22.6			21.3	
Approach LOS		C			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	17.1	7.8	16.5	8.3	20.6	7.7	16.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	7.5	9.5	3.7	7.6	4.2	12.2	3.6	5.7				
Green Ext Time (p_c), s	0.4	2.3	0.1	3.3	0.1	3.3	0.1	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			21.2									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	1	502	27	25	360	0	12	0	22	0	0	2
Future Vol, veh/h	1	502	27	25	360	0	12	0	22	0	0	2
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	97	97	97	97	92	97	92	97	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	1	518	28	26	371	0	12	0	23	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	547	0	0	775	958	274	684	972	188
Stage 1	-	-	-	-	-	-	535	535	-	423	423	-
Stage 2	-	-	-	-	-	-	240	423	-	261	549	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1184	-	-	1025	-	-	290	256	727	335	251	822
Stage 1	-	-	-	-	-	-	500	522	-	579	586	-
Stage 2	-	-	-	-	-	-	745	586	-	721	515	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1184	-	-	1024	-	-	281	247	726	316	242	820
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	247	-	316	242	-
Stage 1	-	-	-	-	-	-	499	521	-	578	567	-
Stage 2	-	-	-	-	-	-	718	567	-	698	514	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.7			13.4			9.4		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	466	1184	-	-	1024	-	-	820
HCM Lane V/C Ratio	0.075	0.001	-	-	0.025	-	-	0.003
HCM Control Delay (s)	13.4	8	0	-	8.6	0.1	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	385	24	9	299	85	15	18	9	99	23	16
Future Volume (veh/h)	7	385	24	9	299	85	15	18	9	99	23	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	8	414	22	10	322	64	16	19	1	106	25	12
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	130	1051	56	130	908	178	258	150	6	368	35	17
Arrive On Green	0.07	0.30	0.30	0.07	0.30	0.30	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1792	3448	183	1792	2979	585	577	1148	49	1131	267	128
Grp Volume(v), veh/h	8	214	222	10	192	194	36	0	0	143	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1844	1792	1787	1777	1775	0	0	1525	0	0
Q Serve(g_s), s	0.1	2.7	2.7	0.1	2.4	2.4	0.0	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	2.7	2.7	0.1	2.4	2.4	0.5	0.0	0.0	2.5	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.33	0.44		0.03	0.74		0.08
Lane Grp Cap(c), veh/h	130	545	562	130	545	542	415	0	0	420	0	0
V/C Ratio(X)	0.06	0.39	0.40	0.08	0.35	0.36	0.09	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1259	2511	2591	1259	2511	2497	1337	0	0	1267	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.3	7.8	7.8	12.3	7.7	7.7	11.0	0.0	0.0	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.6	0.1	0.6	0.6	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	1.5	0.1	1.3	1.3	0.3	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	12.4	8.5	8.5	12.4	8.3	8.3	11.0	0.0	0.0	12.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		444			396			36			143	
Approach Delay, s/veh		8.5			8.4			11.0			12.0	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	14.7		7.7	6.1	14.7		7.7				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.1	4.7		4.5	2.1	4.4		2.5				
Green Ext Time (p_c), s	0.0	3.9		0.4	0.0	3.5		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			9.0									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗	↘	↔	↖	↗	↔	↖	↗	↔	↖	↘
Traffic Volume (veh/h)	213	74	362	217	62	30	453	678	251	22	782	106
Future Volume (veh/h)	213	74	362	217	62	30	453	678	251	22	782	106
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	222	158	131	226	65	17	472	706	0	23	815	96
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	416	218	184	340	136	36	1341	2699	0	206	1185	139
Arrive On Green	0.11	0.11	0.11	0.09	0.09	0.09	0.64	0.87	0.00	0.11	0.25	0.25
Sat Flow, veh/h	3619	1900	1598	3619	1449	379	3510	5358	0	1810	4696	550
Grp Volume(v), veh/h	222	158	131	226	0	82	472	706	0	23	599	312
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1810	0	1827	1755	1729	0	1810	1729	1788
Q Serve(g_s), s	7.5	10.4	10.3	7.8	0.0	5.5	8.2	3.0	0.0	1.5	20.4	20.6
Cycle Q Clear(g_c), s	7.5	10.4	10.3	7.8	0.0	5.5	8.2	3.0	0.0	1.5	20.4	20.6
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	416	218	184	340	0	172	1341	2699	0	206	872	451
V/C Ratio(X)	0.53	0.72	0.71	0.67	0.00	0.48	0.35	0.26	0.00	0.11	0.69	0.69
Avail Cap(c_a), veh/h	974	512	430	969	0	489	1341	2699	0	206	872	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.93	0.93	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	55.5	55.5	56.9	0.0	55.9	16.0	4.3	0.0	51.7	43.9	44.0
Incr Delay (d2), s/veh	0.4	1.7	1.9	0.8	0.0	0.8	0.1	0.2	0.0	1.1	4.4	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	5.6	4.6	4.0	0.0	2.8	3.9	1.5	0.0	0.8	10.3	11.2
LnGrp Delay(d),s/veh	54.6	57.2	57.4	57.8	0.0	56.6	16.1	4.5	0.0	52.8	48.3	52.5
LnGrp LOS	D	E	E	E		E	B	A		D	D	D
Approach Vol, veh/h		511			308			1178			934	
Approach Delay, s/veh		56.1			57.5			9.1			49.8	
Approach LOS		E			E			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	55.6	38.8		19.1	20.8	73.6		16.4				
Change Period (Y+Rc), s	6.0	* 6		* 4.2	6.0	6.0		4.2				
Max Green Setting (Gmax), s	33.0	* 33		* 35	14.8	25.0		34.8				
Max Q Clear Time (g_c+110), s	11.0	22.6		12.4	3.5	5.0		9.8				
Green Ext Time (p_c), s	0.0	7.0		1.1	0.1	9.5		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay				35.4								
HCM 2010 LOS				D								
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing Plus Project AM

									
Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations	 		 	  	  				
Traffic Volume (veh/h)	394	512	284	629	525	204			
Future Volume (veh/h)	394	512	284	629	525	204			
Number	7	14	5	2	6	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845			
Adj Flow Rate, veh/h	419	96	302	669	559	97			
Adj No. of Lanes	2	1	2	3	3	1			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	3	3	3	3	3	3			
Cap, veh/h	495	228	909	3906	2375	722			
Arrive On Green	0.15	0.15	0.53	1.00	0.47	0.47			
Sat Flow, veh/h	3408	1568	3408	5202	5202	1532			
Grp Volume(v), veh/h	419	96	302	669	559	97			
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1532			
Q Serve(g_s), s	14.4	6.7	6.0	0.0	7.9	4.3			
Cycle Q Clear(g_c), s	14.4	6.7	6.0	0.0	7.9	4.3			
Prop In Lane	1.00	1.00	1.00			1.00			
Lane Grp Cap(c), veh/h	495	228	909	3906	2375	722			
V/C Ratio(X)	0.85	0.42	0.33	0.17	0.24	0.13			
Avail Cap(c_a), veh/h	710	327	909	3906	2375	722			
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.91	0.91	0.98	0.98			
Uniform Delay (d), s/veh	50.0	46.7	21.9	0.0	18.9	17.9			
Incr Delay (d2), s/veh	5.8	0.9	0.9	0.1	0.2	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.1	6.0	2.9	0.0	3.7	1.9			
LnGrp Delay(d),s/veh	55.8	47.6	22.8	0.1	19.1	18.3			
LnGrp LOS	E	D	C	A	B	B			
Approach Vol, veh/h	515			971	656				
Approach Delay, s/veh	54.3			7.2	19.0				
Approach LOS	D			A	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs	2		4		5	6			
Phs Duration (G+Y+Rc), s	98.1		21.9		36.5	61.6			
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0			
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0			
Max Q Clear Time (g_c+I1), s	2.0		16.4		8.0	9.9			
Green Ext Time (p_c), s	7.8		1.0		0.9	2.8			
Intersection Summary									
HCM 2010 Ctrl Delay			22.1						
HCM 2010 LOS			C						
Notes									

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	225	0	309	0	0	0	0	688	497	204	833	0
Future Volume (veh/h)	225	0	309	0	0	0	0	688	497	204	833	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	253	0	66				0	1003	309	229	936	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	307	0	249				0	3882	1063	279	4163	0
Arrive On Green	0.09	0.00	0.09				0.00	0.70	0.70	0.16	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	5534	1516	3408	5202	0
Grp Volume(v), veh/h	253	0	66				0	1003	309	229	936	0
Grp Sat Flow(s),veh/h/ln	1704	0	1380				0	1845	1516	1704	1679	0
Q Serve(g_s), s	8.8	0.0	2.7				0.0	7.9	9.2	7.8	0.0	0.0
Cycle Q Clear(g_c), s	8.8	0.0	2.7				0.0	7.9	9.2	7.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	307	0	249				0	3882	1063	279	4163	0
V/C Ratio(X)	0.82	0.00	0.27				0.00	0.26	0.29	0.82	0.22	0.00
Avail Cap(c_a), veh/h	738	0	598				0	3882	1063	767	4163	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.84	0.84	0.86	0.86	0.00
Uniform Delay (d), s/veh	53.7	0.0	50.9				0.0	6.5	6.7	49.3	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.2				0.0	0.1	0.6	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	1.0				0.0	4.0	3.9	3.7	0.0	0.0
LnGrp Delay(d),s/veh	55.8	0.0	51.1				0.0	6.7	7.3	51.3	0.1	0.0
LnGrp LOS	E		D					A	A	D	A	
Approach Vol, veh/h		319						1312			1165	
Approach Delay, s/veh		54.8						6.8			10.2	
Approach LOS		D						A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	5.0	89.5		15.5		104.5						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	27	51.8		* 26		84.0						
Max Q Clear Time (g_c+I), s	19.8	11.2		10.8		2.0						
Green Ext Time (p_c), s	0.0	1.4		0.1		1.4						
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Existing Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	121	16	49	222	406	57	478	6	301	446	390
Future Volume (veh/h)	281	121	16	49	222	406	57	478	6	301	446	390
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	312	134	15	54	247	135	63	531	6	334	496	193
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	199	22	301	316	265	100	1080	12	398	929	413
Arrive On Green	0.12	0.12	0.12	0.17	0.17	0.17	0.06	0.21	0.21	0.04	0.09	0.09
Sat Flow, veh/h	3548	1643	184	1774	1863	1561	1774	5182	58	3442	3539	1572
Grp Volume(v), veh/h	312	0	149	54	247	135	63	347	190	334	496	193
Grp Sat Flow(s),veh/h/ln	1774	0	1827	1774	1863	1561	1774	1695	1851	1721	1770	1572
Q Serve(g_s), s	10.2	0.0	9.4	3.1	15.2	9.4	4.2	10.8	10.9	11.6	16.1	14.0
Cycle Q Clear(g_c), s	10.2	0.0	9.4	3.1	15.2	9.4	4.2	10.8	10.9	11.6	16.1	14.0
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	429	0	221	301	316	265	100	706	386	398	929	413
V/C Ratio(X)	0.73	0.00	0.67	0.18	0.78	0.51	0.63	0.49	0.49	0.84	0.53	0.47
Avail Cap(c_a), veh/h	721	0	371	510	536	449	169	706	386	531	929	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	0.95	0.95	0.95
Uniform Delay (d), s/veh	50.8	0.0	50.5	42.7	47.7	45.3	55.4	41.9	41.9	56.6	47.8	46.8
Incr Delay (d2), s/veh	1.8	0.0	2.7	0.1	1.6	0.6	2.1	2.1	3.9	6.5	2.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.9	1.5	8.0	4.1	2.1	5.3	6.0	5.9	8.2	6.5
LnGrp Delay(d),s/veh	52.6	0.0	53.2	42.8	49.3	45.9	57.5	44.0	45.8	63.1	49.9	50.4
LnGrp LOS	D		D	D	D	D	E	D	D	E	D	D
Approach Vol, veh/h		461			436			600			1023	
Approach Delay, s/veh		52.8			47.4			46.0			54.3	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.9	29.6		19.0	11.4	36.1		24.9				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	18.5	25.0		24.4	11.4	31.5		34.5				
Max Q Clear Time (g_c+1/3), s	13.6	12.9		12.2	6.2	18.1		17.2				
Green Ext Time (p_c), s	0.3	5.5		1.3	0.0	7.1		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	50.9											
HCM 2010 LOS	D											
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Existing Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	133	131	31	240	80	301	352	20	46	164	183
Future Volume (veh/h)	257	133	131	31	240	80	301	352	20	46	164	183
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	292	151	0	35	273	0	342	400	21	52	186	55
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	318	1151	515	66	341	290	376	1600	84	78	1048	469
Arrive On Green	0.18	0.32	0.00	0.04	0.18	0.00	0.21	0.46	0.46	0.04	0.29	0.29
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3453	181	1792	3574	1599
Grp Volume(v), veh/h	292	151	0	35	273	0	342	206	215	52	186	55
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1846	1792	1787	1599
Q Serve(g_s), s	21.8	4.1	0.0	2.6	19.0	0.0	25.4	9.6	9.6	3.9	5.3	3.4
Cycle Q Clear(g_c), s	21.8	4.1	0.0	2.6	19.0	0.0	25.4	9.6	9.6	3.9	5.3	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	318	1151	515	66	341	290	376	828	855	78	1048	469
V/C Ratio(X)	0.92	0.13	0.00	0.53	0.80	0.00	0.91	0.25	0.25	0.66	0.18	0.12
Avail Cap(c_a), veh/h	420	1151	515	263	552	469	591	828	855	394	1048	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	32.7	0.0	64.5	53.5	0.0	52.6	22.2	22.2	64.2	35.9	35.3
Incr Delay (d2), s/veh	19.9	0.2	0.0	4.9	17.8	0.0	13.5	0.7	0.7	6.9	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	2.1	0.0	1.4	11.5	0.0	14.0	4.9	5.1	2.1	2.7	1.6
LnGrp Delay(d),s/veh	75.0	33.0	0.0	69.4	71.2	0.0	66.1	22.9	22.9	71.1	36.3	35.8
LnGrp LOS	E	C		E	E		E	C	C	E	D	D
Approach Vol, veh/h		443			308			763			293	
Approach Delay, s/veh		60.7			71.0			42.3			42.4	
Approach LOS		E			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	40.0	68.2	9.0	49.2	33.1	45.0	28.2	30.0				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+1/3), s	15.5	11.6	4.6	6.1	27.4	7.3	23.8	21.0				
Green Ext Time (p_c), s	0.1	2.0	0.0	2.4	1.2	2.0	0.4	3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			51.7									
HCM 2010 LOS			D									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↑↑		↖	↖
Traffic Vol, veh/h	88	280	523	11	5	157
Future Vol, veh/h	88	280	523	11	5	157
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	96	304	568	12	5	171

























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	583	0	-	0	924 293
Stage 1	-	-	-	-	577 -
Stage 2	-	-	-	-	347 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	994	-	-	-	270 706
Stage 1	-	-	-	-	528 -
Stage 2	-	-	-	-	690 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	991	-	-	-	242 704
Mov Cap-2 Maneuver	-	-	-	-	349 -
Stage 1	-	-	-	-	475 -
Stage 2	-	-	-	-	688 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	991	-	-	-	349	704
HCM Lane V/C Ratio	0.097	-	-	-	0.016	0.242
HCM Control Delay (s)	9	-	-	-	15.5	11.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0.9

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Existing Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	43	135	28	79	302	159	88	365	73	63	131	22
Future Volume (veh/h)	43	135	28	79	302	159	88	365	73	63	131	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	48	152	14	89	339	116	99	410	76	71	147	4
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	108	678	62	151	598	201	161	516	96	132	599	501
Arrive On Green	0.06	0.21	0.21	0.08	0.23	0.23	0.09	0.34	0.34	0.07	0.32	0.32
Sat Flow, veh/h	1792	3302	300	1792	2611	877	1792	1539	285	1792	1881	1571
Grp Volume(v), veh/h	48	81	85	89	230	225	99	0	486	71	147	4
Grp Sat Flow(s),veh/h/ln	1792	1787	1815	1792	1787	1701	1792	0	1825	1792	1881	1571
Q Serve(g_s), s	1.5	2.3	2.3	2.9	6.8	7.0	3.2	0.0	14.4	2.3	3.4	0.1
Cycle Q Clear(g_c), s	1.5	2.3	2.3	2.9	6.8	7.0	3.2	0.0	14.4	2.3	3.4	0.1
Prop In Lane	1.00		0.17	1.00		0.52	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	108	367	373	151	410	390	161	0	611	132	599	501
V/C Ratio(X)	0.45	0.22	0.23	0.59	0.56	0.58	0.61	0.00	0.79	0.54	0.25	0.01
Avail Cap(c_a), veh/h	602	900	914	602	900	856	602	0	919	602	947	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	19.7	19.7	26.3	20.3	20.4	26.1	0.0	18.0	26.6	15.0	13.9
Incr Delay (d2), s/veh	2.9	0.4	0.4	3.7	1.7	1.9	3.8	0.0	3.8	3.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.2	1.2	1.6	3.5	3.5	1.7	0.0	7.8	1.2	1.8	0.0
LnGrp Delay(d),s/veh	29.9	20.1	20.2	29.9	22.0	22.3	29.9	0.0	21.8	30.0	15.3	13.9
LnGrp LOS	C	C	C	C	C	C	C		C	C	B	B
Approach Vol, veh/h		214			544			585			222	
Approach Delay, s/veh		22.3			23.4			23.1			20.0	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	25.0	9.0	17.2	9.4	24.0	7.6	18.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	4.3	16.4	4.9	4.3	5.2	5.4	3.5	9.0				
Green Ext Time (p_c), s	0.1	3.6	0.2	1.2	0.2	1.1	0.1	3.7				
Intersection Summary												
HCM 2010 Ctrl Delay			22.7									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	0	258	7	30	464	1	26	0	69	2	0	1
Future Vol, veh/h	0	258	7	30	464	1	26	0	69	2	0	1
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	311	8	36	559	1	31	0	83	2	0	1



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	560	0	0	323	0	0	676	951	164	788	955	285
Stage 1	-	-	-	-	-	-	319	319	-	632	632	-
Stage 2	-	-	-	-	-	-	357	632	-	156	323	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1007	-	-	1241	-	-	341	258	855	282	257	712
Stage 1	-	-	-	-	-	-	670	652	-	435	472	-
Stage 2	-	-	-	-	-	-	636	472	-	831	649	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1007	-	-	1236	-	-	327	246	852	246	245	709
Mov Cap-2 Maneuver	-	-	-	-	-	-	327	246	-	246	245	-
Stage 1	-	-	-	-	-	-	667	649	-	435	452	-
Stage 2	-	-	-	-	-	-	605	452	-	750	646	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.6			12.5			16.6		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	592	1007	-	-	1236	-	-	314
HCM Lane V/C Ratio	0.193	-	-	-	0.029	-	-	0.01
HCM Control Delay (s)	12.5	0	-	-	8	0.1	-	16.6
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	258	8	2	372	85	17	37	12	57	18	26
Future Volume (veh/h)	15	258	8	2	372	85	17	37	12	57	18	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	18	304	7	2	438	80	20	44	5	67	21	17
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	129	1264	29	122	1053	191	205	124	13	305	33	27
Arrive On Green	0.07	0.35	0.35	0.07	0.35	0.35	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1792	3568	82	1792	3009	545	458	1194	129	1017	319	258
Grp Volume(v), veh/h	18	152	159	2	259	259	69	0	0	105	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1863	1792	1787	1767	1781	0	0	1594	0	0
Q Serve(g_s), s	0.3	1.8	1.8	0.0	3.3	3.3	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.3	1.8	1.8	0.0	3.3	3.3	1.0	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.31	0.29		0.07	0.64		0.16
Lane Grp Cap(c), veh/h	129	633	660	122	625	619	342	0	0	365	0	0
V/C Ratio(X)	0.14	0.24	0.24	0.02	0.41	0.42	0.20	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	1212	2419	2522	1212	2419	2392	1305	0	0	1213	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.8	6.7	6.7	12.9	7.3	7.3	12.3	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.0	0.6	0.6	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.9	0.0	1.7	1.7	0.5	0.0	0.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	13.0	7.0	7.0	12.9	7.9	8.0	12.4	0.0	0.0	12.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		329			520			69			105	
Approach Delay, s/veh		7.3			8.0			12.4			12.8	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	16.5		7.1	6.1	16.3		7.1				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	3.8		3.8	2.3	5.3		3.0				
Green Ext Time (p_c), s	0.0	2.7		0.3	0.0	4.8		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			8.6									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔		↔	↔		↔	↔	↔
Traffic Volume (veh/h)	78	22	90	185	42	35	214	626	183	23	433	107
Future Volume (veh/h)	78	22	90	185	42	35	214	626	183	23	433	107
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	83	39	34	197	45	14	228	666	0	24	461	97
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	188	99	81	290	111	34	1500	3405	0	32	1062	217
Arrive On Green	0.05	0.05	0.05	0.08	0.08	0.08	0.89	1.00	0.00	0.02	0.26	0.26
Sat Flow, veh/h	3480	1827	1494	3480	1330	414	3375	5152	0	1740	4139	847
Grp Volume(v), veh/h	83	39	34	197	0	59	228	666	0	24	368	190
Grp Sat Flow(s),veh/h/ln	1740	1827	1494	1740	0	1743	1688	1663	0	1740	1663	1661
Q Serve(g_s), s	2.8	2.5	2.6	6.6	0.0	3.9	1.0	0.0	0.0	1.6	11.1	11.5
Cycle Q Clear(g_c), s	2.8	2.5	2.6	6.6	0.0	3.9	1.0	0.0	0.0	1.6	11.1	11.5
Prop In Lane	1.00		1.00	1.00		0.24	1.00		0.00	1.00		0.51
Lane Grp Cap(c), veh/h	188	99	81	290	0	145	1500	3405	0	32	853	426
V/C Ratio(X)	0.44	0.40	0.42	0.68	0.00	0.41	0.15	0.20	0.00	0.75	0.43	0.45
Avail Cap(c_a), veh/h	783	411	336	1009	0	506	1500	3405	0	200	853	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.93	0.93	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	54.9	54.9	53.5	0.0	52.2	3.8	0.0	0.0	58.6	37.3	37.4
Incr Delay (d2), s/veh	0.6	1.0	1.3	1.1	0.0	0.7	0.0	0.1	0.0	12.3	1.6	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.3	1.1	3.2	0.0	1.9	0.4	0.0	0.0	0.9	5.3	5.7
LnGrp Delay(d),s/veh	55.6	55.8	56.2	54.5	0.0	52.9	3.8	0.1	0.0	70.9	38.9	40.8
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		156			256			894			582	
Approach Delay, s/veh		55.8			54.1			1.1			40.8	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	59.3	35.8		10.7	7.2	87.9		14.2				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+I), s	13.0	13.5		4.8	3.6	2.0		8.6				
Green Ext Time (p_c), s	0.2	2.2		0.3	0.0	9.8		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				25.0								
HCM 2010 LOS				C								
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing Plus Project PM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	445	590	340	947	1063	367		
Future Volume (veh/h)	445	590	340	947	1063	367		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	468	315	358	997	1119	200		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	770	354	419	3623	2827	849		
Arrive On Green	0.22	0.22	0.24	1.00	0.55	0.55		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1542		
Grp Volume(v), veh/h	468	315	358	997	1119	200		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1542		
Q Serve(g_s), s	15.7	24.8	12.8	0.0	16.3	8.7		
Cycle Q Clear(g_c), s	15.7	24.8	12.8	0.0	16.3	8.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	770	354	419	3623	2827	849		
V/C Ratio(X)	0.61	0.89	0.86	0.28	0.40	0.24		
Avail Cap(c_a), veh/h	1069	492	722	3623	2827	849		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.72	0.72	0.92	0.92		
Uniform Delay (d), s/veh	45.5	49.1	48.3	0.0	16.8	15.1		
Incr Delay (d2), s/veh	0.6	12.9	3.2	0.1	0.4	0.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.6	21.4	6.2	0.0	7.8	3.9		
LnGrp Delay(d),s/veh	46.1	61.9	51.5	0.1	17.2	15.7		
LnGrp LOS	D	E	D	A	B	B		
Approach Vol, veh/h	783			1355	1319			
Approach Delay, s/veh	52.5			13.7	17.0			
Approach LOS	D			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	96.7		33.3		20.2	76.5		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		26.8		14.8	18.3		
Green Ext Time (p_c), s	13.5		2.0		0.9	6.4		
Intersection Summary								
HCM 2010 Ctrl Delay			23.7					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔↔					↑↑↑	↔	↔↔	↑↑↑	
Traffic Volume (veh/h)	403	0	572	0	0	0	0	884	699	651	1002	0
Future Volume (veh/h)	403	0	572	0	0	0	0	884	699	651	1002	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00	0.98	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	0	1881				0	1881	1881	1881	1881	0
Adj Flow Rate, veh/h	420	0	397				0	1152	358	678	1044	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1				0	1	1	1	1	0
Cap, veh/h	540	0	437				0	2501	691	989	3943	0
Arrive On Green	0.16	0.00	0.16				0.00	0.44	0.44	0.38	1.00	0.00
Sat Flow, veh/h	3476	0	2814				0	5644	1559	3476	5305	0
Grp Volume(v), veh/h	420	0	397				0	1152	358	678	1044	0
Grp Sat Flow(s),veh/h/ln	1738	0	1407				0	1881	1559	1738	1712	0
Q Serve(g_s), s	15.1	0.0	18.0				0.0	18.6	21.6	21.3	0.0	0.0
Cycle Q Clear(g_c), s	15.1	0.0	18.0				0.0	18.6	21.6	21.3	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	540	0	437				0	2501	691	989	3943	0
V/C Ratio(X)	0.78	0.00	0.91				0.00	0.46	0.52	0.69	0.26	0.00
Avail Cap(c_a), veh/h	829	0	671				0	2501	691	989	3943	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.79	0.79	0.77	0.77	0.00
Uniform Delay (d), s/veh	52.7	0.0	54.0				0.0	25.3	26.2	35.5	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	8.4				0.0	0.5	2.2	3.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	7.5				0.0	9.7	9.7	10.5	0.0	0.0
LnGrp Delay(d),s/veh	53.8	0.0	62.4				0.0	25.8	28.4	38.5	0.1	0.0
LnGrp LOS	D		E					C	C	D	A	
Approach Vol, veh/h		817						1510			1722	
Approach Delay, s/veh		58.0						26.4			15.2	
Approach LOS		E						C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	42.2	62.9		24.9		105.1						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	37	46.8		* 31		89.0						
Max Q Clear Time (g_c+Y), s	23.3	23.6		20.0		2.0						
Green Ext Time (p_c), s	0.1	1.6		0.2		1.6						
Intersection Summary												
HCM 2010 Ctrl Delay			28.0									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Existing Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	240	37	44	159	408	61	646	27	563	663	348
Future Volume (veh/h)	480	240	37	44	159	408	61	646	27	563	663	348
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	517	216	38	45	164	55	63	666	28	580	684	170
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	609	264	46	224	235	196	103	1009	42	630	1141	496
Arrive On Green	0.17	0.17	0.17	0.13	0.13	0.13	0.06	0.20	0.20	0.30	0.53	0.53
Sat Flow, veh/h	3583	1551	273	1792	1881	1568	1792	5047	211	3476	3574	1555
Grp Volume(v), veh/h	517	0	254	45	164	55	63	451	243	580	684	170
Grp Sat Flow(s),veh/h/ln	1792	0	1824	1792	1881	1568	1792	1712	1834	1738	1787	1555
Q Serve(g_s), s	18.2	0.0	17.5	2.9	10.9	4.1	4.5	15.8	15.9	21.0	17.1	8.1
Cycle Q Clear(g_c), s	18.2	0.0	17.5	2.9	10.9	4.1	4.5	15.8	15.9	21.0	17.1	8.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	609	0	310	224	235	196	103	685	367	630	1141	496
V/C Ratio(X)	0.85	0.00	0.82	0.20	0.70	0.28	0.61	0.66	0.66	0.92	0.60	0.34
Avail Cap(c_a), veh/h	703	0	358	460	483	403	157	685	367	735	1141	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.86	0.86	0.86
Uniform Delay (d), s/veh	52.3	0.0	52.0	51.0	54.5	51.6	59.8	47.9	48.0	44.4	24.6	22.6
Incr Delay (d2), s/veh	8.2	0.0	11.8	0.2	1.4	0.3	1.9	4.4	8.1	12.8	2.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	9.8	1.5	5.7	1.8	2.3	7.9	8.9	11.2	8.7	3.7
LnGrp Delay(d),s/veh	60.5	0.0	63.8	51.2	55.9	51.8	61.8	52.3	56.1	57.2	26.6	24.2
LnGrp LOS	E		E	D	E	D	E	D	E	E	C	C
Approach Vol, veh/h		771			264			757			1434	
Approach Delay, s/veh		61.6			54.3			54.3			38.7	
Approach LOS		E			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.6	30.6		26.6	12.1	46.1		20.8				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	27.5	26.0		25.5	11.4	41.5		33.4				
Max Q Clear Time (g_c+23), s	23.0	17.9		20.2	6.5	19.1		12.9				
Green Ext Time (p_c), s	0.6	5.0		1.5	0.0	12.6		0.7				
Intersection Summary												
HCM 2010 Ctrl Delay			49.1									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Existing Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	311	363	401	44	176	64	244	216	17	123	388	302
Future Volume (veh/h)	311	363	401	44	176	64	244	216	17	123	388	302
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	324	378	0	46	183	0	254	225	18	128	404	163
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	377	1087	486	124	306	260	318	950	75	179	712	318
Arrive On Green	0.21	0.30	0.00	0.07	0.16	0.00	0.18	0.28	0.28	0.10	0.20	0.20
Sat Flow, veh/h	1810	3610	1615	1810	1900	1615	1810	3385	269	1810	3610	1611
Grp Volume(v), veh/h	324	378	0	46	183	0	254	119	124	128	404	163
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1900	1615	1810	1805	1848	1810	1805	1611
Q Serve(g_s), s	12.6	6.0	0.0	1.8	6.5	0.0	9.8	3.7	3.8	5.0	7.4	6.6
Cycle Q Clear(g_c), s	12.6	6.0	0.0	1.8	6.5	0.0	9.8	3.7	3.8	5.0	7.4	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	377	1087	486	124	306	260	318	507	519	179	712	318
V/C Ratio(X)	0.86	0.35	0.00	0.37	0.60	0.00	0.80	0.24	0.24	0.71	0.57	0.51
Avail Cap(c_a), veh/h	793	1979	885	496	1041	885	1116	989	1013	744	1979	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	19.9	0.0	32.5	28.4	0.0	28.9	20.2	20.2	31.9	26.5	26.2
Incr Delay (d2), s/veh	4.4	0.9	0.0	1.4	8.3	0.0	5.5	0.2	0.2	3.9	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	3.1	0.0	0.9	4.1	0.0	5.4	1.9	2.0	2.7	3.7	3.1
LnGrp Delay(d),s/veh	32.2	20.8	0.0	33.9	36.8	0.0	34.4	20.4	20.4	35.8	27.5	28.0
LnGrp LOS	C	C		C	D		C	C	C	D	C	C
Approach Vol, veh/h		702			229			497			695	
Approach Delay, s/veh		26.1			36.2			27.6			29.1	
Approach LOS		C			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	25.5	9.0	27.3	17.3	19.4	19.2	17.1				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+1), s	17.0	5.8	3.8	8.0	11.8	9.4	14.6	8.5				
Green Ext Time (p_c), s	0.2	1.1	0.0	6.5	1.0	4.9	0.6	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			28.5									
HCM 2010 LOS			C									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	153	584	431	24	17	147
Future Vol, veh/h	153	584	431	24	17	147
Conflicting Peds, #/hr	1	0	0	1	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	158	602	444	25	18	152






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	470	0	-	0	1079 236
Stage 1	-	-	-	-	458 -
Stage 2	-	-	-	-	621 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	1095	-	-	-	215 769
Stage 1	-	-	-	-	606 -
Stage 2	-	-	-	-	501 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1094	-	-	-	184 768
Mov Cap-2 Maneuver	-	-	-	-	266 -
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	500 -

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1094	-	-	-	266	768
HCM Lane V/C Ratio	0.144	-	-	-	0.066	0.197
HCM Control Delay (s)	8.8	-	-	-	19.5	10.8
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.2	0.7

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Existing Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	310	109	59	216	130	73	254	31	187	390	37
Future Volume (veh/h)	72	310	109	59	216	130	73	254	31	187	390	37
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	76	326	115	62	227	137	77	267	33	197	411	11
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	142	582	201	127	470	272	143	381	47	266	566	472
Arrive On Green	0.08	0.22	0.22	0.07	0.22	0.22	0.08	0.23	0.23	0.15	0.30	0.30
Sat Flow, veh/h	1792	2592	896	1792	2171	1256	1792	1641	203	1792	1881	1568
Grp Volume(v), veh/h	76	223	218	62	185	179	77	0	300	197	411	11
Grp Sat Flow(s),veh/h/ln	1792	1787	1701	1792	1787	1641	1792	0	1844	1792	1881	1568
Q Serve(g_s), s	2.3	6.1	6.3	1.9	5.0	5.3	2.3	0.0	8.3	5.8	10.9	0.3
Cycle Q Clear(g_c), s	2.3	6.1	6.3	1.9	5.0	5.3	2.3	0.0	8.3	5.8	10.9	0.3
Prop In Lane	1.00		0.53	1.00		0.77	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	142	401	382	127	387	355	143	0	428	266	566	472
V/C Ratio(X)	0.54	0.56	0.57	0.49	0.48	0.50	0.54	0.00	0.70	0.74	0.73	0.02
Avail Cap(c_a), veh/h	645	965	919	645	965	886	645	0	995	645	1016	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	19.1	19.2	24.8	19.0	19.1	24.6	0.0	19.6	22.6	17.4	13.7
Incr Delay (d2), s/veh	3.1	1.7	1.9	2.9	1.3	1.6	3.1	0.0	3.0	4.0	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.2	3.2	1.0	2.6	2.5	1.3	0.0	4.5	3.2	6.0	0.1
LnGrp Delay(d),s/veh	27.7	20.8	21.1	27.7	20.3	20.7	27.7	0.0	22.6	26.6	19.9	13.7
LnGrp LOS	C	C	C	C	C	C	C		C	C	B	B
Approach Vol, veh/h		517			426			377			619	
Approach Delay, s/veh		21.9			21.6			23.6			21.9	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.3	17.9	7.9	17.5	8.4	21.7	8.4	17.0				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	7.8	10.3	3.9	8.3	4.3	12.9	4.3	7.3				
Green Ext Time (p_c), s	0.4	2.4	0.1	3.6	0.1	3.3	0.1	3.0				
Intersection Summary												
HCM 2010 Ctrl Delay			22.2									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	1	506	27	25	367	0	12	0	22	0	0	2
Future Vol, veh/h	1	506	27	25	367	0	12	0	22	0	0	2
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	97	97	97	97	92	97	92	97	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	1	522	28	26	378	0	12	0	23	0	0	2



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	378	0	0	551	0	0	782	969	276	693	983	191
Stage 1	-	-	-	-	-	-	539	539	-	430	430	-
Stage 2	-	-	-	-	-	-	243	430	-	263	553	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1177	-	-	1022	-	-	286	252	724	330	247	818
Stage 1	-	-	-	-	-	-	497	520	-	574	582	-
Stage 2	-	-	-	-	-	-	742	582	-	719	513	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1177	-	-	1021	-	-	277	243	723	312	239	816
Mov Cap-2 Maneuver	-	-	-	-	-	-	277	243	-	312	239	-
Stage 1	-	-	-	-	-	-	496	519	-	573	563	-
Stage 2	-	-	-	-	-	-	715	563	-	696	512	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.6			13.5			9.4		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	1177	-	-	1021	-	-	816
HCM Lane V/C Ratio	0.076	0.001	-	-	0.025	-	-	0.003
HCM Control Delay (s)	13.5	8.1	0	-	8.6	0.1	-	9.4
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	389	24	9	306	86	15	18	9	100	23	16
Future Volume (veh/h)	7	389	24	9	306	86	15	18	9	100	23	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	8	418	26	10	329	92	16	19	10	108	25	17
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	128	1045	65	129	849	234	229	129	54	367	35	24
Arrive On Green	0.07	0.31	0.31	0.07	0.31	0.31	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1792	3414	212	1792	2769	763	436	929	390	1101	255	173
Grp Volume(v), veh/h	8	218	226	10	211	210	45	0	0	150	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1838	1792	1787	1745	1755	0	0	1529	0	0
Q Serve(g_s), s	0.1	2.8	2.8	0.2	2.7	2.8	0.0	0.0	0.0	2.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	2.8	2.8	0.2	2.7	2.8	0.6	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.44	0.36		0.22	0.72		0.11
Lane Grp Cap(c), veh/h	128	547	563	129	548	535	412	0	0	426	0	0
V/C Ratio(X)	0.06	0.40	0.40	0.08	0.38	0.39	0.11	0.00	0.00	0.35	0.00	0.00
Avail Cap(c_a), veh/h	1236	2465	2536	1236	2465	2407	1297	0	0	1239	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.6	8.0	8.0	12.6	7.9	7.9	11.0	0.0	0.0	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.7	0.1	0.6	0.7	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	1.5	0.1	1.4	1.4	0.3	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	12.6	8.6	8.6	12.6	8.5	8.6	11.1	0.0	0.0	12.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		452			431			45			150	
Approach Delay, s/veh		8.7			8.7			11.1			12.0	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	14.9		8.0	6.1	14.9		8.0				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	4.8		4.7	2.1	4.8		2.6				
Green Ext Time (p_c), s	0.0	4.0		0.4	0.0	3.8		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			9.2									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	RT	LT	RT	LT	LT	RT	RT	LT	RT	LT	LT	RT
Traffic Volume (veh/h)	213	74	367	217	62	30	457	684	251	22	789	106
Future Volume (veh/h)	213	74	367	217	62	30	457	684	251	22	789	106
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	222	155	129	226	65	31	476	712	0	23	822	110
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	411	216	181	341	114	54	1345	2705	0	206	1165	155
Arrive On Green	0.11	0.11	0.11	0.09	0.09	0.09	0.64	0.87	0.00	0.11	0.25	0.25
Sat Flow, veh/h	3619	1900	1598	3619	1211	578	3510	5358	0	1810	4619	614
Grp Volume(v), veh/h	222	155	129	226	0	96	476	712	0	23	614	318
Grp Sat Flow(s),veh/h/ln	1810	1900	1598	1810	0	1789	1755	1729	0	1810	1729	1775
Q Serve(g_s), s	7.5	10.2	10.1	7.8	0.0	6.7	8.2	3.0	0.0	1.5	21.0	21.2
Cycle Q Clear(g_c), s	7.5	10.2	10.1	7.8	0.0	6.7	8.2	3.0	0.0	1.5	21.0	21.2
Prop In Lane	1.00		1.00	1.00		0.32	1.00		0.00	1.00		0.35
Lane Grp Cap(c), veh/h	411	216	181	341	0	169	1345	2705	0	206	872	448
V/C Ratio(X)	0.54	0.72	0.71	0.66	0.00	0.57	0.35	0.26	0.00	0.11	0.70	0.71
Avail Cap(c_a), veh/h	974	512	430	969	0	479	1345	2705	0	206	872	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.93	0.93	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	55.6	55.6	56.9	0.0	56.3	15.9	4.2	0.0	51.7	44.2	44.3
Incr Delay (d2), s/veh	0.4	1.7	1.9	0.8	0.0	1.1	0.1	0.2	0.0	1.1	4.7	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.5	4.6	4.0	0.0	3.4	4.0	1.4	0.0	0.8	10.6	11.6
LnGrp Delay(d),s/veh	54.8	57.3	57.5	57.7	0.0	57.5	16.0	4.4	0.0	52.8	48.9	53.5
LnGrp LOS	D	E	E	E		E	B	A		D	D	D
Approach Vol, veh/h		506			322			1188			955	
Approach Delay, s/veh		56.3			57.6			9.1			50.5	
Approach LOS		E			E			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	38.8		18.9	20.8	73.8		16.5				
Change Period (Y+Rc), s	6.0	* 6		* 4.2	6.0	6.0		4.2				
Max Green Setting (Gmax), s	33	* 33		* 35	14.8	25.0		34.8				
Max Q Clear Time (g_c+I1), s	23.2	23.2		12.2	3.5	5.0		9.8				
Green Ext Time (p_c), s	0.0	6.8		1.1	0.1	9.6		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				35.7								
HCM 2010 LOS				D								
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing Plus Approved Projects AM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	450	620	420	770	610	230		
Future Volume (veh/h)	450	620	420	770	610	230		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	479	242	447	819	649	107		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	600	276	909	3750	2218	675		
Arrive On Green	0.18	0.18	0.53	1.00	0.44	0.44		
Sat Flow, veh/h	3408	1568	3408	5202	5202	1532		
Grp Volume(v), veh/h	479	242	447	819	649	107		
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1532		
Q Serve(g_s), s	16.2	18.0	10.0	0.0	9.9	5.0		
Cycle Q Clear(g_c), s	16.2	18.0	10.0	0.0	9.9	5.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	600	276	909	3750	2218	675		
V/C Ratio(X)	0.80	0.88	0.49	0.22	0.29	0.16		
Avail Cap(c_a), veh/h	710	327	909	3750	2218	675		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.85	0.85	0.97	0.97		
Uniform Delay (d), s/veh	47.4	48.2	22.9	0.0	21.6	20.2		
Incr Delay (d2), s/veh	5.1	19.3	1.6	0.1	0.3	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.0	16.1	4.8	0.0	4.6	2.2		
LnGrp Delay(d),s/veh	52.5	67.5	24.5	0.1	21.9	20.7		
LnGrp LOS	D	E	C	A	C	C		
Approach Vol, veh/h	721			1266	756			
Approach Delay, s/veh	57.5			8.7	21.7			
Approach LOS	E			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	94.4		25.6		36.5	57.9		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		20.0		12.0	11.9		
Green Ext Time (p_c), s	10.2		1.1		1.3	3.3		
Intersection Summary								
HCM 2010 Ctrl Delay			25.1					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing Plus Approved Projects AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT		TT					TTT	T	TT	TTT	
Traffic Volume (veh/h)	260	0	370	0	0	0	0	930	650	240	990	0
Future Volume (veh/h)	260	0	370	0	0	0	0	930	650	240	990	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	292	0	196				0	1320	409	270	1112	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	346	0	280				0	3753	1028	319	4105	0
Arrive On Green	0.10	0.00	0.10				0.00	0.68	0.68	0.19	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	5534	1515	3408	5202	0
Grp Volume(v), veh/h	292	0	196				0	1320	409	270	1112	0
Grp Sat Flow(s),veh/h/ln	1704	0	1380				0	1845	1515	1704	1679	0
Q Serve(g_s), s	10.1	0.0	8.2				0.0	12.1	14.3	9.2	0.0	0.0
Cycle Q Clear(g_c), s	10.1	0.0	8.2				0.0	12.1	14.3	9.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	346	0	280				0	3753	1028	319	4105	0
V/C Ratio(X)	0.84	0.00	0.70				0.00	0.35	0.40	0.85	0.27	0.00
Avail Cap(c_a), veh/h	738	0	598				0	3753	1028	767	4105	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.77	0.77	0.75	0.75	0.00
Uniform Delay (d), s/veh	53.0	0.0	52.1				0.0	8.2	8.5	48.0	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	1.2				0.0	0.2	0.9	1.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	3.2				0.0	6.2	6.2	4.4	0.0	0.0
LnGrp Delay(d),s/veh	55.1	0.0	53.3				0.0	8.4	9.4	49.8	0.1	0.0
LnGrp LOS	E		D					A	A	D	A	
Approach Vol, veh/h		488						1729			1382	
Approach Delay, s/veh		54.4						8.6			9.8	
Approach LOS		D						A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	66.4	86.7		16.9		103.1						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	27	51.8		* 26		84.0						
Max Q Clear Time (g_c+I1), s	2	16.3		12.1		2.0						
Green Ext Time (p_c), s	0.0	1.9		0.1		1.7						
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Existing Plus Approved Projects AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	130	50	60	230	410	120	850	10	310	630	420
Future Volume (veh/h)	300	130	50	60	230	410	120	850	10	310	630	420
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	336	139	42	67	256	156	133	944	10	344	700	194
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	474	183	55	309	325	272	159	1236	13	408	929	413
Arrive On Green	0.13	0.13	0.13	0.17	0.17	0.17	0.09	0.24	0.24	0.04	0.09	0.09
Sat Flow, veh/h	3548	1369	414	1774	1863	1562	1774	5187	55	3442	3539	1572
Grp Volume(v), veh/h	336	0	181	67	256	156	133	617	337	344	700	194
Grp Sat Flow(s),veh/h/ln	1774	0	1783	1774	1863	1562	1774	1695	1851	1721	1770	1572
Q Serve(g_s), s	10.9	0.0	11.7	3.9	15.8	11.0	8.9	20.3	20.3	11.9	23.2	14.1
Cycle Q Clear(g_c), s	10.9	0.0	11.7	3.9	15.8	11.0	8.9	20.3	20.3	11.9	23.2	14.1
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	474	0	238	309	325	272	159	808	441	408	929	413
V/C Ratio(X)	0.71	0.00	0.76	0.22	0.79	0.57	0.84	0.76	0.76	0.84	0.75	0.47
Avail Cap(c_a), veh/h	721	0	363	510	536	449	169	808	441	531	929	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09	0.91	0.91	0.91
Uniform Delay (d), s/veh	49.7	0.0	50.1	42.5	47.4	45.5	53.8	42.5	42.6	56.5	51.0	46.9
Incr Delay (d2), s/veh	1.5	0.0	3.7	0.1	1.6	0.7	3.1	0.6	1.2	6.9	5.2	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	6.0	1.9	8.3	4.8	4.5	9.6	10.5	6.1	12.0	6.5
LnGrp Delay(d),s/veh	51.2	0.0	53.8	42.6	49.1	46.2	56.9	43.2	43.7	63.5	56.2	50.3
LnGrp LOS	D		D	D	D	D	E	D	D	E	E	D
Approach Vol, veh/h		517			479			1087			1238	
Approach Delay, s/veh		52.1			47.2			45.0			57.3	
Approach LOS		D			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.2			20.5	15.3	36.1		25.4				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	18.5	25.0		24.4	11.4	31.5		34.5				
Max Q Clear Time (g_c+11), s	11.9	22.3		13.7	10.9	25.2		17.8				
Green Ext Time (p_c), s	0.3	2.2		1.4	0.0	4.7		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			51.0									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Existing Plus Approved Projects AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	220	150	40	290	90	330	500	50	50	220	350
Future Volume (veh/h)	550	220	150	40	290	90	330	500	50	50	220	350
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	625	250	0	45	330	0	375	568	54	57	250	116
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	362	1311	586	67	381	324	403	1436	136	80	902	403
Arrive On Green	0.20	0.37	0.00	0.04	0.20	0.00	0.22	0.44	0.44	0.04	0.25	0.25
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3295	313	1792	3574	1599
Grp Volume(v), veh/h	625	250	0	45	330	0	375	307	315	57	250	116
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1821	1792	1787	1599
Q Serve(g_s), s	32.0	7.6	0.0	3.9	26.9	0.0	32.5	18.6	18.7	5.0	8.9	9.3
Cycle Q Clear(g_c), s	32.0	7.6	0.0	3.9	26.9	0.0	32.5	18.6	18.7	5.0	8.9	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	362	1311	586	67	381	324	403	779	793	80	902	403
V/C Ratio(X)	1.73	0.19	0.00	0.67	0.87	0.00	0.93	0.39	0.40	0.71	0.28	0.29
Avail Cap(c_a), veh/h	362	1311	586	226	474	403	508	779	793	339	902	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.3	34.2	0.0	75.3	61.1	0.0	60.3	30.5	30.5	74.8	47.7	47.8
Incr Delay (d2), s/veh	339.4	0.3	0.0	8.1	22.3	0.0	21.7	1.5	1.5	8.5	0.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	49.8	3.8	0.0	2.1	16.4	0.0	18.6	9.5	9.7	2.7	4.5	4.3
LnGrp Delay(d),s/veh	402.7	34.5	0.0	83.4	83.4	0.0	82.0	32.0	32.0	83.3	48.4	49.6
LnGrp LOS	F	C		F	F		F	C	C	F	D	D
Approach Vol, veh/h		875			375			997			423	
Approach Delay, s/veh		297.5			83.4			50.8			53.5	
Approach LOS		F			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	74.1	10.0	63.5	40.2	45.0	36.0	37.4				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+1), s	17.0	20.7	5.9	9.6	34.5	11.3	34.0	28.9				
Green Ext Time (p_c), s	0.1	2.9	0.0	4.1	1.1	2.9	0.0	3.2				
Intersection Summary												
HCM 2010 Ctrl Delay			136.6									
HCM 2010 LOS			F									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	110	270	520	20	10	190
Future Vol, veh/h	110	270	520	20	10	190
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	120	293	565	22	11	207

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	590	0	-	0	969 297
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	390 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	988	-	-	-	253 702
Stage 1	-	-	-	-	526 -
Stage 2	-	-	-	-	656 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	985	-	-	-	221 700
Mov Cap-2 Maneuver	-	-	-	-	326 -
Stage 1	-	-	-	-	460 -
Stage 2	-	-	-	-	654 -






















Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	985	-	-	-	326	700
HCM Lane V/C Ratio	0.121	-	-	-	0.033	0.295
HCM Control Delay (s)	9.2	-	-	-	16.4	12.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	1.2

HCM 2010 Signalized Intersection Summary

6: Delta Fair Blvd & Buchanan Rd

Existing Plus Approved Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	230	50	90	350	160	120	390	80	70	150	20
Future Volume (veh/h)	40	230	50	90	350	160	120	390	80	70	150	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	45	258	38	101	393	136	135	438	83	79	169	6
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	100	666	97	158	639	218	193	530	100	135	589	492
Arrive On Green	0.06	0.21	0.21	0.09	0.25	0.25	0.11	0.35	0.35	0.08	0.31	0.31
Sat Flow, veh/h	1792	3117	452	1792	2599	887	1792	1533	291	1792	1881	1571
Grp Volume(v), veh/h	45	146	150	101	268	261	135	0	521	79	169	6
Grp Sat Flow(s),veh/h/ln	1792	1787	1782	1792	1787	1699	1792	0	1824	1792	1881	1571
Q Serve(g_s), s	1.6	4.5	4.7	3.5	8.7	8.9	4.7	0.0	17.0	2.8	4.4	0.2
Cycle Q Clear(g_c), s	1.6	4.5	4.7	3.5	8.7	8.9	4.7	0.0	17.0	2.8	4.4	0.2
Prop In Lane	1.00		0.25	1.00		0.52	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	100	382	381	158	439	418	193	0	630	135	589	492
V/C Ratio(X)	0.45	0.38	0.39	0.64	0.61	0.62	0.70	0.00	0.83	0.58	0.29	0.01
Avail Cap(c_a), veh/h	552	826	824	552	826	786	552	0	843	552	870	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.7	21.9	21.9	28.6	21.7	21.8	27.9	0.0	19.5	29.0	16.8	15.4
Incr Delay (d2), s/veh	3.1	0.9	0.9	4.3	2.0	2.2	4.6	0.0	6.0	4.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.3	2.4	1.9	4.5	4.4	2.6	0.0	9.6	1.5	2.3	0.1
LnGrp Delay(d),s/veh	32.8	22.7	22.8	32.9	23.7	24.0	32.5	0.0	25.5	33.0	17.2	15.4
LnGrp LOS	C	C	C	C	C	C	C		C	C	B	B
Approach Vol, veh/h		341			630			656			254	
Approach Delay, s/veh		24.1			25.3			26.9			22.1	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	27.4	9.7	18.9	11.0	25.3	7.6	20.9				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	4.8	19.0	5.5	6.7	6.7	6.4	3.6	10.9				
Green Ext Time (p_c), s	0.1	3.4	0.2	2.3	0.3	1.3	0.1	4.2				
Intersection Summary												
HCM 2010 Ctrl Delay			25.2									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	360	10	40	520	10	30	0	80	10	0	10
Future Vol, veh/h	0	360	10	40	520	10	30	0	80	10	0	10
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	434	12	48	627	11	36	0	96	11	0	11



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	450	0	0	859	1178	227	946	1179	324
Stage 1	-	-	-	-	-	-	444	444	-	729	729	-
Stage 2	-	-	-	-	-	-	415	734	-	217	450	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	942	-	-	1114	-	-	252	189	779	216	189	672
Stage 1	-	-	-	-	-	-	565	574	-	380	426	-
Stage 2	-	-	-	-	-	-	588	424	-	765	570	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	942	-	-	1110	-	-	233	176	776	179	176	669
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	176	-	179	176	-
Stage 1	-	-	-	-	-	-	563	572	-	380	397	-
Stage 2	-	-	-	-	-	-	537	396	-	670	568	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	15.5	18.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	474	942	-	-	1110	-	-	282
HCM Lane V/C Ratio	0.28	-	-	-	0.043	-	-	0.077
HCM Control Delay (s)	15.5	0	-	-	8.4	0.2	-	18.8
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	0.2

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing Plus Approved Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	360	10	10	430	90	20	40	20	70	20	30
Future Volume (veh/h)	20	360	10	10	430	90	20	40	20	70	20	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	24	424	10	12	506	88	24	47	10	82	24	20
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	132	1341	32	122	1124	194	194	140	27	310	37	31
Arrive On Green	0.07	0.38	0.38	0.07	0.37	0.37	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1792	3566	84	1792	3034	525	409	1144	219	1032	302	252
Grp Volume(v), veh/h	24	212	222	12	297	297	81	0	0	126	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1863	1792	1787	1772	1772	0	0	1585	0	0
Q Serve(g_s), s	0.4	2.7	2.7	0.2	4.0	4.1	0.0	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	2.7	2.7	0.2	4.0	4.1	1.3	0.0	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.30	0.30		0.12	0.65		0.16
Lane Grp Cap(c), veh/h	132	672	701	122	662	656	361	0	0	378	0	0
V/C Ratio(X)	0.18	0.32	0.32	0.10	0.45	0.45	0.22	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	1110	2215	2308	1110	2215	2196	1187	0	0	1108	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.0	7.1	7.1	14.1	7.7	7.7	13.0	0.0	0.0	13.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.1	0.7	0.7	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.4	1.4	0.1	2.1	2.1	0.7	0.0	0.0	1.1	0.0	0.0
LnGrp Delay(d),s/veh	14.3	7.5	7.5	14.2	8.4	8.4	13.1	0.0	0.0	13.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		458			606			81			126	
Approach Delay, s/veh		7.9			8.5			13.1			13.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	18.1		7.9	6.4	18.0		7.9				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	4.7		4.3	2.4	6.1		3.3				
Green Ext Time (p_c), s	0.0	3.9		0.4	0.0	5.7		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			9.1									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing Plus Approved Projects AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	90	30	100	200	50	50	240	780	200	40	520	120
Future Volume (veh/h)	90	30	100	200	50	50	240	780	200	40	520	120
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	96	40	38	213	53	20	255	830	0	43	553	110
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	201	106	86	307	111	42	1471	3296	0	55	1073	209
Arrive On Green	0.06	0.06	0.06	0.09	0.09	0.09	0.87	1.00	0.00	0.03	0.26	0.26
Sat Flow, veh/h	3480	1827	1497	3480	1257	474	3375	5152	0	1740	4179	814
Grp Volume(v), veh/h	96	40	38	213	0	73	255	830	0	43	438	225
Grp Sat Flow(s),veh/h/ln	1740	1827	1497	1740	0	1731	1688	1663	0	1740	1663	1668
Q Serve(g_s), s	3.2	2.5	2.9	7.1	0.0	4.8	1.4	0.0	0.0	2.9	13.5	13.9
Cycle Q Clear(g_c), s	3.2	2.5	2.9	7.1	0.0	4.8	1.4	0.0	0.0	2.9	13.5	13.9
Prop In Lane	1.00		1.00	1.00		0.27	1.00		0.00	1.00		0.49
Lane Grp Cap(c), veh/h	201	106	86	307	0	153	1471	3296	0	55	853	428
V/C Ratio(X)	0.48	0.38	0.44	0.69	0.00	0.48	0.17	0.25	0.00	0.78	0.51	0.53
Avail Cap(c_a), veh/h	783	411	337	1009	0	502	1471	3296	0	200	853	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.91	0.91	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	54.5	54.7	53.1	0.0	52.1	4.4	0.0	0.0	57.7	38.2	38.3
Incr Delay (d2), s/veh	0.7	0.8	1.3	1.1	0.0	0.9	0.0	0.2	0.0	8.8	2.2	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.3	1.2	3.5	0.0	2.3	0.6	0.1	0.0	1.6	6.5	6.9
LnGrp Delay(d),s/veh	55.4	55.3	56.0	54.2	0.0	52.9	4.5	0.2	0.0	66.5	40.4	42.9
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		174			286			1085			706	
Approach Delay, s/veh		55.5			53.9			1.2			42.8	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	58.3	35.8		11.1	8.8	85.3		14.8				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+I), s	13.4	15.9		5.2	4.9	2.0		9.1				
Green Ext Time (p_c), s	0.2	2.5		0.3	0.0	12.1		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			25.1									
HCM 2010 LOS			C									
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Existing Plus Approved Projects PM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	500	790	430	1060	1250	410		
Future Volume (veh/h)	500	790	430	1060	1250	410		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	526	559	453	1116	1316	180		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	1069	492	512	3180	2246	672		
Arrive On Green	0.31	0.31	0.29	1.00	0.44	0.44		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1536		
Grp Volume(v), veh/h	526	559	453	1116	1316	180		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1536		
Q Serve(g_s), s	16.0	40.0	16.2	0.0	25.2	9.7		
Cycle Q Clear(g_c), s	16.0	40.0	16.2	0.0	25.2	9.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1069	492	512	3180	2246	672		
V/C Ratio(X)	0.49	1.14	0.88	0.35	0.59	0.27		
Avail Cap(c_a), veh/h	1069	492	722	3180	2246	672		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.53	0.53	0.88	0.88		
Uniform Delay (d), s/veh	36.7	45.0	44.8	0.0	27.7	23.3		
Incr Delay (d2), s/veh	0.3	83.6	5.1	0.2	1.0	0.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.7	41.4	8.0	0.0	12.1	4.3		
LnGrp Delay(d),s/veh	37.0	128.6	49.9	0.2	28.7	24.2		
LnGrp LOS	D	F	D	A	C	C		
Approach Vol, veh/h	1085			1569	1496			
Approach Delay, s/veh	84.2			14.5	28.1			
Approach LOS	F			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	85.5		44.5		23.6	61.9		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		42.0		18.2	27.2		
Green Ext Time (p_c), s	16.1		0.0		1.0	7.1		
Intersection Summary								
HCM 2010 Ctrl Delay			37.6					
HCM 2010 LOS			D					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing Plus Approved Projects PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↗	↖↗	↑↑↑	
Traffic Volume (veh/h)	440	0	690	0	0	0	0	1050	810	730	1310	0
Future Volume (veh/h)	440	0	690	0	0	0	0	1050	810	730	1310	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00	0.97	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	0	1881				0	1881	1881	1881	1881	0
Adj Flow Rate, veh/h	458	0	618				0	1323	415	760	1365	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1				0	1	1	1	1	0
Cap, veh/h	807	0	653				0	2068	571	989	3549	0
Arrive On Green	0.23	0.00	0.23				0.00	0.37	0.37	0.57	1.00	0.00
Sat Flow, veh/h	3476	0	2814				0	5644	1557	3476	5305	0
Grp Volume(v), veh/h	458	0	618				0	1323	415	760	1365	0
Grp Sat Flow(s),veh/h/ln	1738	0	1407				0	1881	1557	1738	1712	0
Q Serve(g_s), s	15.2	0.0	28.1				0.0	25.2	29.9	21.8	0.0	0.0
Cycle Q Clear(g_c), s	15.2	0.0	28.1				0.0	25.2	29.9	21.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	807	0	653				0	2068	571	989	3549	0
V/C Ratio(X)	0.57	0.00	0.95				0.00	0.64	0.73	0.77	0.38	0.00
Avail Cap(c_a), veh/h	829	0	671				0	2068	571	989	3549	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.70	0.70	0.50	0.50	0.00
Uniform Delay (d), s/veh	44.2	0.0	49.1				0.0	34.1	35.6	24.7	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	21.8				0.0	1.1	5.7	2.9	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	12.9				0.0	13.3	13.7	10.5	0.1	0.0
LnGrp Delay(d),s/veh	44.7	0.0	70.9				0.0	35.2	41.2	27.7	0.2	0.0
LnGrp LOS	D		E				D	D	C	A		
Approach Vol, veh/h		1076						1738			2125	
Approach Delay, s/veh		59.8						36.6			10.0	
Approach LOS		E						D			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	42.2	52.9		34.9		95.1						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	37	46.8		* 31		89.0						
Max Q Clear Time (g_c+Rc), s	23.8	31.9		30.1		2.0						
Green Ext Time (p_c), s	0.1	1.9		0.1		2.2						
Intersection Summary												
HCM 2010 Ctrl Delay			30.2									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Existing Plus Approved Projects PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	230	80	60	170	420	90	890	30	580	1040	380
Future Volume (veh/h)	510	230	80	60	170	420	90	890	30	580	1040	380
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	543	213	71	62	175	81	93	918	29	598	1072	221
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	648	242	81	234	246	205	115	1038	33	643	1141	496
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.06	0.20	0.20	0.37	0.64	0.64
Sat Flow, veh/h	3583	1341	447	1792	1881	1570	1792	5108	161	3476	3574	1555
Grp Volume(v), veh/h	543	0	284	62	175	81	93	615	332	598	1072	221
Grp Sat Flow(s),veh/h/ln	1792	0	1788	1792	1881	1570	1792	1712	1846	1738	1787	1555
Q Serve(g_s), s	19.0	0.0	20.1	4.1	11.6	6.1	6.7	22.7	22.7	21.5	35.2	9.3
Cycle Q Clear(g_c), s	19.0	0.0	20.1	4.1	11.6	6.1	6.7	22.7	22.7	21.5	35.2	9.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	648	0	323	234	246	205	115	696	375	643	1141	496
V/C Ratio(X)	0.84	0.00	0.88	0.26	0.71	0.39	0.81	0.88	0.89	0.93	0.94	0.45
Avail Cap(c_a), veh/h	703	0	351	460	483	403	157	696	375	735	1141	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.45	0.45	0.45	0.78	0.78	0.78
Uniform Delay (d), s/veh	51.4	0.0	51.9	50.9	54.2	51.8	60.0	50.3	50.3	40.1	22.4	17.7
Incr Delay (d2), s/veh	8.0	0.0	20.1	0.2	1.4	0.5	6.8	7.8	13.4	13.4	13.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	11.7	2.0	6.1	2.7	3.5	11.5	13.0	11.3	19.0	4.2
LnGrp Delay(d),s/veh	59.5	0.0	72.0	51.1	55.6	52.3	66.8	58.1	63.7	53.5	35.4	19.9
LnGrp LOS	E		E	D	E	D	E	E	E	D	D	B
Approach Vol, veh/h		827			318			1040			1891	
Approach Delay, s/veh		63.8			53.9			60.7			39.3	
Approach LOS		E			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.1	31.0		28.0	13.0	46.1		21.5				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	27.5	26.0		25.5	11.4	41.5		33.4				
Max Q Clear Time (g_c+23), s	23.5	24.7		22.1	8.7	37.2		13.6				
Green Ext Time (p_c), s	0.6	1.1		1.1	0.0	3.9		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			50.8									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

4: Somersville Rd & Buchanan Rd

Existing Plus Approved Projects PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	420	430	60	240	70	260	300	30	130	530	580
Future Volume (veh/h)	490	420	430	60	240	70	260	300	30	130	530	580
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	510	438	0	62	250	0	271	312	27	135	552	414
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	432	1294	579	89	321	273	305	1230	106	163	1023	457
Arrive On Green	0.24	0.36	0.00	0.05	0.17	0.00	0.17	0.37	0.37	0.09	0.28	0.28
Sat Flow, veh/h	1810	3610	1615	1810	1900	1615	1810	3361	289	1810	3610	1612
Grp Volume(v), veh/h	510	438	0	62	250	0	271	167	172	135	552	414
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1900	1615	1810	1805	1844	1810	1805	1612
Q Serve(g_s), s	32.0	11.9	0.0	4.5	16.9	0.0	19.6	8.6	8.8	9.8	17.3	33.2
Cycle Q Clear(g_c), s	32.0	11.9	0.0	4.5	16.9	0.0	19.6	8.6	8.8	9.8	17.3	33.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	432	1294	579	89	321	273	305	660	675	163	1023	457
V/C Ratio(X)	1.18	0.34	0.00	0.70	0.78	0.00	0.89	0.25	0.26	0.83	0.54	0.91
Avail Cap(c_a), veh/h	432	1294	579	270	567	482	608	660	675	405	1078	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	31.4	0.0	62.7	53.3	0.0	54.4	29.7	29.7	60.0	40.6	46.3
Incr Delay (d2), s/veh	102.6	0.7	0.0	7.1	17.0	0.0	10.1	0.1	0.1	7.8	0.7	20.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.3	6.0	0.0	2.4	10.4	0.0	10.6	4.3	4.5	5.3	8.8	17.3
LnGrp Delay(d),s/veh	153.6	32.1	0.0	69.8	70.3	0.0	64.5	29.8	29.9	67.8	41.3	67.0
LnGrp LOS	F	C		E	E		E	C	C	E	D	E
Approach Vol, veh/h		948			312			610			1101	
Approach Delay, s/veh		97.4			70.2			45.2			54.2	
Approach LOS		F			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	54.0	10.6	53.3	27.1	42.9	36.0	27.9				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+11), s	11.8	10.8	6.5	13.9	21.6	35.2	34.0	18.9				
Green Ext Time (p_c), s	0.2	1.6	0.1	7.1	1.0	2.8	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			67.8									
HCM 2010 LOS			E									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	180	570	430	40	30	180
Future Vol, veh/h	180	570	430	40	30	180
Conflicting Peds, #/hr	1	0	0	1	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	186	588	443	41	31	186






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	485	0	-	0	1135 243
Stage 1	-	-	-	-	465 -
Stage 2	-	-	-	-	670 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	1081	-	-	-	197 761
Stage 1	-	-	-	-	602 -
Stage 2	-	-	-	-	473 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1080	-	-	-	163 760
Mov Cap-2 Maneuver	-	-	-	-	231 -
Stage 1	-	-	-	-	498 -
Stage 2	-	-	-	-	473 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	13
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1080	-	-	-	231	760
HCM Lane V/C Ratio	0.172	-	-	-	0.134	0.244
HCM Control Delay (s)	9	-	-	-	23	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.5	1

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Existing Plus Approved Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	360	130	70	280	130	90	270	40	200	420	40
Future Volume (veh/h)	70	360	130	70	280	130	90	270	40	200	420	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	74	379	104	74	295	90	95	284	38	211	442	22
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	135	638	173	135	623	186	157	390	52	275	576	481
Arrive On Green	0.08	0.23	0.23	0.08	0.23	0.23	0.09	0.24	0.24	0.15	0.31	0.31
Sat Flow, veh/h	1792	2769	750	1792	2705	809	1792	1624	217	1792	1881	1568
Grp Volume(v), veh/h	74	243	240	74	193	192	95	0	322	211	442	22
Grp Sat Flow(s),veh/h/ln	1792	1787	1731	1792	1787	1727	1792	0	1841	1792	1881	1568
Q Serve(g_s), s	2.4	7.3	7.4	2.4	5.6	5.8	3.1	0.0	9.6	6.8	12.8	0.6
Cycle Q Clear(g_c), s	2.4	7.3	7.4	2.4	5.6	5.8	3.1	0.0	9.6	6.8	12.8	0.6
Prop In Lane	1.00		0.43	1.00		0.47	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	135	412	399	135	412	398	157	0	442	275	576	481
V/C Ratio(X)	0.55	0.59	0.60	0.55	0.47	0.48	0.61	0.00	0.73	0.77	0.77	0.05
Avail Cap(c_a), veh/h	598	895	867	598	895	865	598	0	922	598	942	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	20.5	20.6	26.7	19.9	20.0	26.3	0.0	21.0	24.3	18.8	14.6
Incr Delay (d2), s/veh	3.4	1.9	2.1	3.4	1.2	1.3	3.8	0.0	3.3	4.5	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.8	3.8	1.3	2.9	2.9	1.7	0.0	5.3	3.7	7.1	0.3
LnGrp Delay(d),s/veh	30.2	22.4	22.7	30.2	21.1	21.3	30.1	0.0	24.2	28.8	21.9	14.7
LnGrp LOS	C	C	C	C	C	C	C		C	C	C	B
Approach Vol, veh/h		557			459			417			675	
Approach Delay, s/veh		23.6			22.6			25.6			23.8	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.2	19.4	8.5	18.8	9.2	23.4	8.5	18.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	8.8	11.6	4.4	9.4	5.1	14.8	4.4	7.8				
Green Ext Time (p_c), s	0.4	2.5	0.1	3.9	0.2	3.5	0.1	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			23.8									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	10	570	30	30	440	0	20	0	30	0	0	10
Future Vol, veh/h	10	570	30	30	440	0	20	0	30	0	0	10
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	97	97	97	97	92	97	92	97	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	11	588	31	31	454	0	21	0	31	0	0	11



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	454	0	0	620	0	0	918	1143	311	832	1158	229
Stage 1	-	-	-	-	-	-	627	627	-	516	516	-
Stage 2	-	-	-	-	-	-	291	516	-	316	642	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1103	-	-	963	-	-	228	199	688	262	195	774
Stage 1	-	-	-	-	-	-	440	474	-	510	533	-
Stage 2	-	-	-	-	-	-	695	533	-	670	467	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1103	-	-	962	-	-	214	187	687	239	184	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	187	-	239	184	-
Stage 1	-	-	-	-	-	-	433	466	-	502	510	-
Stage 2	-	-	-	-	-	-	655	510	-	630	460	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.8			16.5			9.7		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	365	1103	-	-	962	-	-	773
HCM Lane V/C Ratio	0.141	0.01	-	-	0.032	-	-	0.014
HCM Control Delay (s)	16.5	8.3	0.1	-	8.9	0.2	-	9.7
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing Plus Approved Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	450	30	10	380	100	20	20	10	110	30	20
Future Volume (veh/h)	10	450	30	10	380	100	20	20	10	110	30	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	11	484	27	11	409	85	22	22	1	118	32	17
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	125	1126	63	124	967	199	260	176	6	363	45	24
Arrive On Green	0.07	0.33	0.33	0.07	0.33	0.33	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1792	3438	191	1792	2952	608	572	1153	39	1084	294	156
Grp Volume(v), veh/h	11	251	260	11	246	248	45	0	0	167	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1842	1792	1787	1773	1764	0	0	1534	0	0
Q Serve(g_s), s	0.2	3.4	3.4	0.2	3.3	3.4	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	0.2	3.4	3.4	0.2	3.3	3.4	0.6	0.0	0.0	3.2	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.34	0.49		0.02	0.71		0.10
Lane Grp Cap(c), veh/h	125	586	604	124	585	581	441	0	0	432	0	0
V/C Ratio(X)	0.09	0.43	0.43	0.09	0.42	0.43	0.10	0.00	0.00	0.39	0.00	0.00
Avail Cap(c_a), veh/h	1153	2300	2371	1153	2300	2282	1218	0	0	1163	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.5	8.2	8.2	13.5	8.2	8.2	11.4	0.0	0.0	12.5	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.7	0.1	0.7	0.7	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.8	1.8	0.1	1.8	1.8	0.3	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d),s/veh	13.6	8.9	8.9	13.7	8.8	8.9	11.5	0.0	0.0	12.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		522			505			45			167	
Approach Delay, s/veh		9.0			9.0			11.5			12.7	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	16.2		8.7	6.2	16.2		8.7				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	5.4		5.2	2.2	5.4		2.6				
Green Ext Time (p_c), s	0.0	4.7		0.5	0.0	4.6		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			9.6									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing Plus Approved Projects PM





















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	TT	T	T	T	TT		TT	TTT		T	TTT	
Traffic Volume (veh/h)	230	80	400	240	70	50	490	810	270	40	960	120
Future Volume (veh/h)	230	80	400	240	70	50	490	810	270	40	960	120
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	240	181	148	250	73	31	510	844	0	42	1000	117
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	459	241	203	365	127	54	1275	2602	0	206	1185	138
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.73	1.00	0.00	0.11	0.25	0.25
Sat Flow, veh/h	3619	1900	1600	3619	1262	536	3510	5358	0	1810	4698	548
Grp Volume(v), veh/h	240	181	148	250	0	104	510	844	0	42	735	382
Grp Sat Flow(s),veh/h/ln	1810	1900	1600	1810	0	1798	1755	1729	0	1810	1729	1789
Q Serve(g_s), s	8.1	12.0	11.6	8.7	0.0	7.2	7.3	0.0	0.0	2.7	26.3	26.4
Cycle Q Clear(g_c), s	8.1	12.0	11.6	8.7	0.0	7.2	7.3	0.0	0.0	2.7	26.3	26.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	459	241	203	365	0	181	1275	2602	0	206	872	451
V/C Ratio(X)	0.52	0.75	0.73	0.69	0.00	0.57	0.40	0.32	0.00	0.20	0.84	0.85
Avail Cap(c_a), veh/h	974	512	431	969	0	481	1275	2602	0	206	872	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.92	0.92	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	54.8	54.6	56.5	0.0	55.8	12.3	0.0	0.0	52.3	46.2	46.2
Incr Delay (d2), s/veh	0.3	1.8	1.9	0.9	0.0	1.1	0.1	0.3	0.0	2.2	9.7	17.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.4	5.2	4.4	0.0	3.6	3.4	0.1	0.0	1.5	13.7	15.2
LnGrp Delay(d),s/veh	53.4	56.6	56.5	57.3	0.0	56.9	12.4	0.3	0.0	54.5	55.9	63.7
LnGrp LOS	D	E	E	E		E	B	A		D	E	E
Approach Vol, veh/h		569			354			1354			1159	
Approach Delay, s/veh		55.2			57.2			4.9			58.4	
Approach LOS		E			E			A			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	53.2	38.8		20.7	20.8	71.2		17.3				
Change Period (Y+Rc), s	6.0	* 6		* 4.2	6.0	6.0		4.2				
Max Green Setting (Gmax), s	33.0	* 33		* 35	14.8	25.0		34.8				
Max Q Clear Time (g_c+1), s	19.3	28.4		14.0	4.7	2.0		10.7				
Green Ext Time (p_c), s	0.0	3.7		1.3	0.1	12.3		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			36.6									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	450	637	444	780	619	230		
Future Volume (veh/h)	450	637	444	780	619	230		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	479	267	472	830	659	105		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	646	297	909	3682	2151	654		
Arrive On Green	0.19	0.19	0.53	1.00	0.43	0.43		
Sat Flow, veh/h	3408	1568	3408	5202	5202	1532		
Grp Volume(v), veh/h	479	267	472	830	659	105		
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1532		
Q Serve(g_s), s	15.9	20.0	10.7	0.0	10.4	5.1		
Cycle Q Clear(g_c), s	15.9	20.0	10.7	0.0	10.4	5.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	646	297	909	3682	2151	654		
V/C Ratio(X)	0.74	0.90	0.52	0.23	0.31	0.16		
Avail Cap(c_a), veh/h	710	327	909	3682	2151	654		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.84	0.84	0.97	0.97		
Uniform Delay (d), s/veh	45.8	47.5	23.0	0.0	22.7	21.1		
Incr Delay (d2), s/veh	3.5	24.2	1.8	0.1	0.4	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.8	18.0	5.2	0.0	4.9	2.2		
LnGrp Delay(d),s/veh	49.4	71.7	24.8	0.1	23.0	21.7		
LnGrp LOS	D	E	C	A	C	C		
Approach Vol, veh/h	746			1302	764			
Approach Delay, s/veh	57.3			9.1	22.8			
Approach LOS	E			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	92.7		27.3		36.5	56.2		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		22.0		12.7	12.4		
Green Ext Time (p_c), s	10.4		0.8		1.4	3.3		
Intersection Summary								
HCM 2010 Ctrl Delay			25.6					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔		↔↔					↑↑↑	↔	↔↔	↑↑↑	
Traffic Volume (veh/h)	260	0	380	0	0	0	0	964	665	240	1016	0
Future Volume (veh/h)	260	0	380	0	0	0	0	964	665	240	1016	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	292	0	230				0	1358	422	270	1142	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	347	0	281				0	3753	1028	319	4104	0
Arrive On Green	0.10	0.00	0.10				0.00	0.68	0.68	0.19	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	5534	1515	3408	5202	0
Grp Volume(v), veh/h	292	0	230				0	1358	422	270	1142	0
Grp Sat Flow(s),veh/h/ln	1704	0	1380				0	1845	1515	1704	1679	0
Q Serve(g_s), s	10.1	0.0	9.8				0.0	12.6	14.9	9.2	0.0	0.0
Cycle Q Clear(g_c), s	10.1	0.0	9.8				0.0	12.6	14.9	9.2	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	347	0	281				0	3753	1028	319	4104	0
V/C Ratio(X)	0.84	0.00	0.82				0.00	0.36	0.41	0.85	0.28	0.00
Avail Cap(c_a), veh/h	738	0	598				0	3753	1028	767	4104	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.72	0.72	0.73	0.73	0.00
Uniform Delay (d), s/veh	53.0	0.0	52.8				0.0	8.2	8.6	48.0	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.0	2.3				0.0	0.2	0.9	1.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	3.8				0.0	6.4	6.5	4.4	0.0	0.0
LnGrp Delay(d),s/veh	55.1	0.0	55.1				0.0	8.4	9.5	49.7	0.1	0.0
LnGrp LOS	E		E					A	A	D	A	
Approach Vol, veh/h		522						1780			1412	
Approach Delay, s/veh		55.1						8.7			9.6	
Approach LOS		E						A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	66.4	86.7		16.9		103.1						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	27	51.8		* 26		84.0						
Max Q Clear Time (g_c+I1), s	2	16.9		12.1		2.0						
Green Ext Time (p_c), s	0.0	2.0		0.1		1.8						
Intersection Summary												
HCM 2010 Ctrl Delay			15.6									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	145	50	61	238	459	120	850	10	346	630	420
Future Volume (veh/h)	300	145	50	61	238	459	120	850	10	346	630	420
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	361	122	56	68	264	180	133	944	11	384	700	187
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	476	162	74	316	332	279	159	1176	14	447	929	413
Arrive On Green	0.13	0.13	0.13	0.18	0.18	0.18	0.09	0.23	0.23	0.04	0.09	0.09
Sat Flow, veh/h	3548	1204	553	1774	1863	1562	1774	5180	60	3442	3539	1572
Grp Volume(v), veh/h	361	0	178	68	264	180	133	618	337	384	700	187
Grp Sat Flow(s),veh/h/ln	1774	0	1756	1774	1863	1562	1774	1695	1850	1721	1770	1572
Q Serve(g_s), s	11.8	0.0	11.7	3.9	16.3	12.8	8.9	20.7	20.7	13.3	23.2	13.6
Cycle Q Clear(g_c), s	11.8	0.0	11.7	3.9	16.3	12.8	8.9	20.7	20.7	13.3	23.2	13.6
Prop In Lane	1.00		0.31	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	476	0	236	316	332	279	159	770	420	447	929	413
V/C Ratio(X)	0.76	0.00	0.75	0.21	0.79	0.65	0.84	0.80	0.80	0.86	0.75	0.45
Avail Cap(c_a), veh/h	721	0	357	510	536	449	169	770	420	531	929	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.09	0.09	0.09	0.90	0.90	0.90
Uniform Delay (d), s/veh	50.1	0.0	50.0	42.1	47.2	45.8	53.8	43.8	43.8	56.3	51.0	46.6
Incr Delay (d2), s/veh	1.9	0.0	3.6	0.1	1.7	0.9	3.1	0.8	1.5	9.5	5.1	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	5.9	1.9	8.5	5.6	4.5	9.8	10.8	6.9	12.0	6.3
LnGrp Delay(d),s/veh	51.9	0.0	53.7	42.2	48.8	46.7	56.9	44.7	45.4	65.8	56.1	49.8
LnGrp LOS	D		D	D	D	D	E	D	D	E	E	D
Approach Vol, veh/h		539			512			1088			1271	
Approach Delay, s/veh		52.5			47.2			46.4			58.1	
Approach LOS		D			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.6	31.9		20.6	15.3	36.1		25.9				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	18.5	25.0		24.4	11.4	31.5		34.5				
Max Q Clear Time (g_c+1/3), s	11.3	22.7		13.8	10.9	25.2		18.3				
Green Ext Time (p_c), s	0.3	1.9		1.5	0.0	4.7		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				51.9								
HCM 2010 LOS				D								
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	236	150	43	302	90	330	500	53	50	220	351
Future Volume (veh/h)	550	236	150	43	302	90	330	500	53	50	220	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	625	268	0	49	343	0	375	568	60	57	250	115
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	358	1316	589	71	392	333	402	1412	149	80	893	400
Arrive On Green	0.20	0.37	0.00	0.04	0.21	0.00	0.22	0.43	0.43	0.04	0.25	0.25
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3259	343	1792	3574	1599
Grp Volume(v), veh/h	625	268	0	49	343	0	375	311	317	57	250	115
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1815	1792	1787	1599
Q Serve(g_s), s	32.0	8.2	0.0	4.3	28.3	0.0	32.9	19.1	19.2	5.0	9.0	9.3
Cycle Q Clear(g_c), s	32.0	8.2	0.0	4.3	28.3	0.0	32.9	19.1	19.2	5.0	9.0	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	358	1316	589	71	392	333	402	774	786	80	893	400
V/C Ratio(X)	1.75	0.20	0.00	0.69	0.88	0.00	0.93	0.40	0.40	0.72	0.28	0.29
Avail Cap(c_a), veh/h	358	1316	589	224	470	400	504	774	786	336	893	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	34.5	0.0	75.9	61.4	0.0	60.9	31.1	31.2	75.5	48.4	48.5
Incr Delay (d2), s/veh	346.7	0.3	0.0	8.4	23.0	0.0	22.1	1.6	1.5	8.6	0.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	50.3	4.1	0.0	2.3	17.2	0.0	18.7	9.7	9.9	2.7	4.6	4.3
LnGrp Delay(d),s/veh	410.7	34.9	0.0	84.3	84.3	0.0	83.0	32.7	32.7	84.1	49.2	50.3
LnGrp LOS	F	C		F	F		F	C	C	F	D	D
Approach Vol, veh/h		893			392			1003			422	
Approach Delay, s/veh		297.9			84.3			51.5			54.2	
Approach LOS		F			F			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	74.3	10.4	64.3	40.5	45.0	36.0	38.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+1), s	17.0	21.2	6.3	10.2	34.9	11.3	34.0	30.3				
Green Ext Time (p_c), s	0.1	2.9	0.0	4.3	1.1	2.9	0.0	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			137.9									
HCM 2010 LOS			F									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.






















Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	118	313	574	26	11	194
Future Vol, veh/h	118	313	574	26	11	194
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	128	340	624	28	12	211

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	655	0	-	0	1070 329
Stage 1	-	-	-	-	641 -
Stage 2	-	-	-	-	429 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	935	-	-	-	218 670
Stage 1	-	-	-	-	489 -
Stage 2	-	-	-	-	627 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	933	-	-	-	187 668
Mov Cap-2 Maneuver	-	-	-	-	292 -
Stage 1	-	-	-	-	421 -
Stage 2	-	-	-	-	625 -

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	933	-	-	-	292	668
HCM Lane V/C Ratio	0.137	-	-	-	0.041	0.316
HCM Control Delay (s)	9.5	-	-	-	17.9	12.9
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.1	1.4

HCM 2010 Signalized Intersection Summary
 6: Delta Fair Blvd & Buchanan Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	230	50	92	355	180	120	401	80	75	156	30
Future Volume (veh/h)	59	230	50	92	355	180	120	401	80	75	156	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	66	258	56	103	399	202	135	451	90	84	175	8
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	117	699	149	155	598	299	187	525	105	135	596	498
Arrive On Green	0.07	0.24	0.24	0.09	0.26	0.26	0.10	0.35	0.35	0.08	0.32	0.32
Sat Flow, veh/h	1792	2914	620	1792	2291	1144	1792	1518	303	1792	1881	1571
Grp Volume(v), veh/h	66	156	158	103	310	291	135	0	541	84	175	8
Grp Sat Flow(s),veh/h/ln	1792	1787	1746	1792	1787	1648	1792	0	1821	1792	1881	1571
Q Serve(g_s), s	2.6	5.2	5.4	4.0	11.1	11.3	5.2	0.0	19.7	3.2	5.0	0.2
Cycle Q Clear(g_c), s	2.6	5.2	5.4	4.0	11.1	11.3	5.2	0.0	19.7	3.2	5.0	0.2
Prop In Lane	1.00		0.35	1.00		0.69	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	117	429	419	155	467	430	187	0	630	135	596	498
V/C Ratio(X)	0.56	0.36	0.38	0.67	0.66	0.68	0.72	0.00	0.86	0.62	0.29	0.02
Avail Cap(c_a), veh/h	502	752	734	502	752	693	502	0	766	502	791	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	22.6	22.6	31.6	23.6	23.6	30.9	0.0	21.7	32.0	18.4	16.7
Incr Delay (d2), s/veh	4.2	0.7	0.8	4.9	2.3	2.6	5.1	0.0	9.1	4.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.6	2.7	2.2	5.7	5.4	2.9	0.0	11.5	1.8	2.6	0.1
LnGrp Delay(d),s/veh	36.6	23.3	23.4	36.4	25.9	26.3	36.1	0.0	30.8	36.6	18.7	16.8
LnGrp LOS	D	C	C	D	C	C	D		C	D	B	B
Approach Vol, veh/h		380			704			676			267	
Approach Delay, s/veh		25.7			27.6			31.8			24.3	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	29.7	10.2	22.1	11.5	27.6	8.7	23.6				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	5.2	21.7	6.0	7.4	7.2	7.0	4.6	13.3				
Green Ext Time (p_c), s	0.1	2.9	0.2	2.5	0.3	1.3	0.1	4.6				
Intersection Summary												
HCM 2010 Ctrl Delay			28.2									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	0	365	10	40	524	10	30	0	80	10	0	10
Future Vol, veh/h	0	365	10	40	524	10	30	0	80	10	0	10
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	440	12	48	631	11	36	0	96	11	0	11



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	642	0	0	456	0	0	867	1188	230	953	1189	326
Stage 1	-	-	-	-	-	-	450	450	-	733	733	-
Stage 2	-	-	-	-	-	-	417	738	-	220	456	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	939	-	-	1108	-	-	248	187	775	214	187	670
Stage 1	-	-	-	-	-	-	561	570	-	378	424	-
Stage 2	-	-	-	-	-	-	587	422	-	762	567	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	939	-	-	1104	-	-	229	174	772	178	174	667
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	174	-	178	174	-
Stage 1	-	-	-	-	-	-	559	568	-	378	395	-
Stage 2	-	-	-	-	-	-	536	393	-	667	565	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.8			15.7			18.9		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	469	939	-	-	1104	-	-	281
HCM Lane V/C Ratio	0.283	-	-	-	0.044	-	-	0.077
HCM Control Delay (s)	15.7	0	-	-	8.4	0.2	-	18.9
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.2

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

EPAP Plus Projects AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	365	10	10	434	91	20	40	20	71	20	30
Future Volume (veh/h)	20	365	10	10	434	91	20	40	20	71	20	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	24	429	12	12	511	91	24	47	24	84	24	35
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	130	1330	37	119	1115	198	179	135	60	294	42	53
Arrive On Green	0.07	0.37	0.37	0.07	0.37	0.37	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1792	3548	99	1792	3021	535	319	993	443	895	308	390
Grp Volume(v), veh/h	24	216	225	12	301	301	95	0	0	143	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1859	1792	1787	1770	1755	0	0	1593	0	0
Q Serve(g_s), s	0.4	2.8	2.9	0.2	4.2	4.3	0.0	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.4	2.8	2.9	0.2	4.2	4.3	1.6	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.30	0.25		0.25	0.59		0.24
Lane Grp Cap(c), veh/h	130	670	697	119	660	653	375	0	0	389	0	0
V/C Ratio(X)	0.19	0.32	0.32	0.10	0.46	0.46	0.25	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1081	2156	2244	1081	2156	2135	1143	0	0	1075	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.5	7.4	7.4	14.5	7.9	7.9	13.1	0.0	0.0	13.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.4	0.4	0.1	0.7	0.7	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.5	1.5	0.1	2.2	2.2	0.8	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	14.7	7.8	7.7	14.7	8.6	8.7	13.2	0.0	0.0	13.7	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		465			614			95			143	
Approach Delay, s/veh		8.1			8.8			13.2			13.7	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	18.4		8.5	6.4	18.2		8.5				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	4.9		4.7	2.4	6.3		3.6				
Green Ext Time (p_c), s	0.0	4.0		0.4	0.0	5.8		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay			9.4									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way





















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↔	↔		↔	↑↑↑		↔	↑↑↑	
Traffic Volume (veh/h)	90	30	103	200	50	50	244	786	200	40	526	120
Future Volume (veh/h)	90	30	103	200	50	50	244	786	200	40	526	120
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	96	42	39	213	53	53	260	836	0	43	560	128
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	201	106	87	319	76	76	1458	3278	0	55	1043	233
Arrive On Green	0.06	0.06	0.06	0.09	0.09	0.09	0.86	1.00	0.00	0.03	0.26	0.26
Sat Flow, veh/h	3480	1827	1497	3480	830	830	3375	5152	0	1740	4066	909
Grp Volume(v), veh/h	96	42	39	213	0	106	260	836	0	43	456	232
Grp Sat Flow(s),veh/h/ln	1740	1827	1497	1740	0	1660	1688	1663	0	1740	1663	1649
Q Serve(g_s), s	3.2	2.7	3.0	7.1	0.0	7.4	1.5	0.0	0.0	2.9	14.2	14.6
Cycle Q Clear(g_c), s	3.2	2.7	3.0	7.1	0.0	7.4	1.5	0.0	0.0	2.9	14.2	14.6
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.00	1.00		0.55
Lane Grp Cap(c), veh/h	201	106	87	319	0	152	1458	3278	0	55	853	423
V/C Ratio(X)	0.48	0.40	0.45	0.67	0.00	0.70	0.18	0.26	0.00	0.78	0.53	0.55
Avail Cap(c_a), veh/h	783	411	337	1009	0	481	1458	3278	0	200	853	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.91	0.91	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.8	54.5	54.7	52.7	0.0	52.9	4.7	0.0	0.0	57.7	38.4	38.6
Incr Delay (d2), s/veh	0.7	0.9	1.4	0.9	0.0	2.1	0.0	0.2	0.0	8.8	2.4	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.4	1.3	3.5	0.0	3.5	0.7	0.1	0.0	1.6	6.8	7.2
LnGrp Delay(d),s/veh	55.4	55.4	56.0	53.6	0.0	55.0	4.8	0.2	0.0	66.5	40.8	43.6
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		177			319			1096			731	
Approach Delay, s/veh		55.6			54.1			1.3			43.2	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	57.8	35.8		11.1	8.8	84.9		15.2				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+I), s	13.5	16.6		5.2	4.9	2.0		9.4				
Green Ext Time (p_c), s	0.2	2.6		0.3	0.0	12.2		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			25.9									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	500	807	448	1070	1262	410		
Future Volume (veh/h)	500	807	448	1070	1262	410		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	526	576	472	1126	1328	178		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	1069	492	530	3180	2219	663		
Arrive On Green	0.31	0.31	0.31	1.00	0.43	0.43		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1535		
Grp Volume(v), veh/h	526	576	472	1126	1328	178		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1535		
Q Serve(g_s), s	16.0	40.0	16.8	0.0	25.7	9.7		
Cycle Q Clear(g_c), s	16.0	40.0	16.8	0.0	25.7	9.7		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1069	492	530	3180	2219	663		
V/C Ratio(X)	0.49	1.17	0.89	0.35	0.60	0.27		
Avail Cap(c_a), veh/h	1069	492	722	3180	2219	663		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.49	0.49	0.88	0.88		
Uniform Delay (d), s/veh	36.7	45.0	44.1	0.0	28.3	23.7		
Incr Delay (d2), s/veh	0.3	96.7	5.3	0.2	1.1	0.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.7	43.2	8.4	0.0	12.4	4.3		
LnGrp Delay(d),s/veh	37.0	141.7	49.5	0.2	29.3	24.6		
LnGrp LOS	D	F	D	A	C	C		
Approach Vol, veh/h	1102			1598	1506			
Approach Delay, s/veh	91.7			14.7	28.8			
Approach LOS	F			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	85.5		44.5		24.3	61.2		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		42.0		18.8	27.7		
Green Ext Time (p_c), s	16.4		0.0		1.0	7.2		
Intersection Summary								
HCM 2010 Ctrl Delay			39.9					
HCM 2010 LOS			D					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	440	0	697	0	0	0	0	1078	824	730	1339	0
Future Volume (veh/h)	440	0	697	0	0	0	0	1078	824	730	1339	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00	0.97	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	0	1881				0	1881	1881	1881	1881	0
Adj Flow Rate, veh/h	458	0	632				0	1347	424	760	1395	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1				0	1	1	1	1	0
Cap, veh/h	823	0	666				0	2042	563	989	3525	0
Arrive On Green	0.24	0.00	0.24				0.00	0.36	0.36	0.57	1.00	0.00
Sat Flow, veh/h	3476	0	2814				0	5644	1557	3476	5305	0
Grp Volume(v), veh/h	458	0	632				0	1347	424	760	1395	0
Grp Sat Flow(s),veh/h/ln	1738	0	1407				0	1881	1557	1738	1712	0
Q Serve(g_s), s	15.1	0.0	28.7				0.0	26.0	31.0	21.8	0.0	0.0
Cycle Q Clear(g_c), s	15.1	0.0	28.7				0.0	26.0	31.0	21.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	823	0	666				0	2042	563	989	3525	0
V/C Ratio(X)	0.56	0.00	0.95				0.00	0.66	0.75	0.77	0.40	0.00
Avail Cap(c_a), veh/h	829	0	671				0	2042	563	989	3525	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.65	0.65	0.47	0.47	0.00
Uniform Delay (d), s/veh	43.6	0.0	48.8				0.0	34.8	36.4	24.7	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	22.6				0.0	1.1	6.0	2.8	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	13.2				0.0	13.7	14.2	10.5	0.1	0.0
LnGrp Delay(d),s/veh	44.1	0.0	71.5				0.0	35.9	42.4	27.5	0.2	0.0
LnGrp LOS	D		E					D	D	C	A	
Approach Vol, veh/h		1090						1771			2155	
Approach Delay, s/veh		60.0						37.4			9.8	
Approach LOS		E						D			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	42.2	52.3		35.5		94.5						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	37	46.8		* 31		89.0						
Max Q Clear Time (g_c+R), s	23.8	33.0		30.7		2.0						
Green Ext Time (p_c), s	0.1	1.9		0.0		2.2						
Intersection Summary												
HCM 2010 Ctrl Delay			30.5									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	510	261	80	62	178	462	90	890	30	616	1040	380
Future Volume (veh/h)	510	261	80	62	178	462	90	890	30	616	1040	380
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	581	193	82	64	184	119	93	918	31	635	1072	217
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	656	227	97	242	255	213	127	1019	34	677	1141	496
Arrive On Green	0.18	0.18	0.18	0.14	0.14	0.14	0.07	0.20	0.20	0.39	0.64	0.64
Sat Flow, veh/h	3583	1243	528	1792	1881	1571	1792	5095	172	3476	3574	1555
Grp Volume(v), veh/h	581	0	275	64	184	119	93	616	333	635	1072	217
Grp Sat Flow(s),veh/h/ln	1792	0	1771	1792	1881	1571	1792	1712	1843	1738	1787	1555
Q Serve(g_s), s	20.6	0.0	19.5	4.2	12.2	9.2	6.6	22.8	22.9	22.9	35.2	9.1
Cycle Q Clear(g_c), s	20.6	0.0	19.5	4.2	12.2	9.2	6.6	22.8	22.9	22.9	35.2	9.1
Prop In Lane	1.00		0.30	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	656	0	324	242	255	213	127	685	369	677	1141	496
V/C Ratio(X)	0.89	0.00	0.85	0.26	0.72	0.56	0.73	0.90	0.90	0.94	0.94	0.44
Avail Cap(c_a), veh/h	703	0	347	460	483	404	157	685	369	735	1141	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.44	0.44	0.44	0.78	0.78	0.78
Uniform Delay (d), s/veh	51.8	0.0	51.4	50.4	53.9	52.6	59.2	50.7	50.8	38.9	22.4	17.6
Incr Delay (d2), s/veh	12.2	0.0	16.3	0.2	1.5	0.9	4.2	8.8	15.0	15.2	12.9	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	0.0	11.0	2.1	6.4	4.1	3.4	11.6	13.2	12.2	19.0	4.2
LnGrp Delay(d),s/veh	64.0	0.0	67.7	50.6	55.3	53.4	63.3	59.5	65.7	54.1	35.3	19.8
LnGrp LOS	E		E	D	E	D	E	E	E	D	D	B
Approach Vol, veh/h		856			367			1042			1924	
Approach Delay, s/veh		65.2			53.9			61.9			39.8	
Approach LOS		E			D			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.3	30.6		28.3	13.8	46.1		22.1				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	27.5	26.0		25.5	11.4	41.5		33.4				
Max Q Clear Time (g_c+24.9), s	24.9	24.9		22.6	8.6	37.2		14.2				
Green Ext Time (p_c), s	0.5	0.9		1.0	0.0	3.9		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			51.7									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	435	430	63	252	70	260	300	33	130	530	582
Future Volume (veh/h)	490	435	430	63	252	70	260	300	33	130	530	582
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	510	453	0	66	262	0	271	312	34	135	552	414
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	427	1299	581	93	332	282	305	1196	129	162	1017	454
Arrive On Green	0.24	0.36	0.00	0.05	0.17	0.00	0.17	0.36	0.36	0.09	0.28	0.28
Sat Flow, veh/h	1810	3610	1615	1810	1900	1615	1810	3282	355	1810	3610	1612
Grp Volume(v), veh/h	510	453	0	66	262	0	271	170	176	135	552	414
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1900	1615	1810	1805	1832	1810	1805	1612
Q Serve(g_s), s	32.0	12.4	0.0	4.9	17.9	0.0	19.8	9.0	9.1	9.9	17.6	33.6
Cycle Q Clear(g_c), s	32.0	12.4	0.0	4.9	17.9	0.0	19.8	9.0	9.1	9.9	17.6	33.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	427	1299	581	93	332	282	305	658	667	162	1017	454
V/C Ratio(X)	1.19	0.35	0.00	0.71	0.79	0.00	0.89	0.26	0.26	0.83	0.54	0.91
Avail Cap(c_a), veh/h	427	1299	581	267	561	477	601	658	667	401	1066	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	31.8	0.0	63.3	53.5	0.0	55.1	30.2	30.3	60.7	41.3	47.0
Incr Delay (d2), s/veh	108.0	0.7	0.0	7.3	17.2	0.0	10.2	0.2	0.2	7.9	0.7	21.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.7	6.4	0.0	2.6	11.0	0.0	10.8	4.5	4.7	5.3	8.8	17.7
LnGrp Delay(d),s/veh	159.8	32.5	0.0	70.6	70.7	0.0	65.3	30.4	30.4	68.6	42.0	68.7
LnGrp LOS	F	C		E	E		E	C	C	E	D	E
Approach Vol, veh/h		963			328			617			1101	
Approach Delay, s/veh		99.9			70.7			45.7			55.3	
Approach LOS		F			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.2	54.4	10.9	54.1	27.3	43.2	36.0	29.0				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+11), s	11.9	11.1	6.9	14.4	21.8	35.6	34.0	19.9				
Green Ext Time (p_c), s	0.2	1.6	0.1	7.3	1.0	2.5	0.0	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			69.3									
HCM 2010 LOS			E									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑↑	↑↑		↖	↖
Traffic Vol, veh/h	185	632	474	43	31	188
Future Vol, veh/h	185	632	474	43	31	188
Conflicting Peds, #/hr	1	0	0	1	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	191	652	489	44	32	194






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	534	0	-	0	1224 268
Stage 1	-	-	-	-	512 -
Stage 2	-	-	-	-	712 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	1037	-	-	-	173 733
Stage 1	-	-	-	-	569 -
Stage 2	-	-	-	-	450 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1036	-	-	-	141 732
Mov Cap-2 Maneuver	-	-	-	-	208 -
Stage 1	-	-	-	-	464 -
Stage 2	-	-	-	-	450 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1036	-	-	-	208	732
HCM Lane V/C Ratio	0.184	-	-	-	0.154	0.265
HCM Control Delay (s)	9.3	-	-	-	25.4	11.7
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.5	1.1

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

EPAP Plus Projects PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	360	130	71	284	143	90	280	40	204	428	51
Future Volume (veh/h)	88	360	130	71	284	143	90	280	40	204	428	51
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	93	379	137	75	299	151	95	295	42	215	451	25
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	152	613	218	133	528	260	154	396	56	276	591	493
Arrive On Green	0.08	0.24	0.24	0.07	0.23	0.23	0.09	0.25	0.25	0.15	0.31	0.31
Sat Flow, veh/h	1792	2571	915	1792	2313	1138	1792	1610	229	1792	1881	1569
Grp Volume(v), veh/h	93	262	254	75	229	221	95	0	337	215	451	25
Grp Sat Flow(s),veh/h/ln	1792	1787	1699	1792	1787	1664	1792	0	1839	1792	1881	1569
Q Serve(g_s), s	3.1	8.2	8.4	2.5	7.1	7.4	3.2	0.0	10.6	7.2	13.6	0.7
Cycle Q Clear(g_c), s	3.1	8.2	8.4	2.5	7.1	7.4	3.2	0.0	10.6	7.2	13.6	0.7
Prop In Lane	1.00		0.54	1.00		0.68	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	152	426	405	133	408	380	154	0	452	276	591	493
V/C Ratio(X)	0.61	0.61	0.63	0.56	0.56	0.58	0.62	0.00	0.75	0.78	0.76	0.05
Avail Cap(c_a), veh/h	571	855	813	571	855	796	571	0	880	571	900	751
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	21.3	21.4	28.0	21.4	21.5	27.7	0.0	21.8	25.5	19.4	15.0
Incr Delay (d2), s/veh	4.0	2.0	2.3	3.7	1.7	2.0	4.0	0.0	3.5	4.7	3.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.2	4.2	1.4	3.7	3.6	1.8	0.0	5.8	3.9	7.5	0.3
LnGrp Delay(d),s/veh	31.7	23.3	23.6	31.7	23.1	23.5	31.7	0.0	25.3	30.2	22.3	15.0
LnGrp LOS	C	C	C	C	C	C	C		C	C	C	B
Approach Vol, veh/h		609			525			432			691	
Approach Delay, s/veh		24.7			24.5			26.7			24.5	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	20.4	8.7	20.0	9.4	24.7	9.3	19.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	9.2	12.6	4.5	10.4	5.2	15.6	5.1	9.4				
Green Ext Time (p_c), s	0.4	2.6	0.1	4.1	0.2	3.4	0.2	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			25.0									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.



















Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	10	574	30	30	447	0	20	0	30	0	0	10
Future Vol, veh/h	10	574	30	30	447	0	20	0	30	0	0	10
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	97	97	97	97	92	97	92	97	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	11	592	31	31	461	0	21	0	31	0	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	461	0	0	624	0	0	926	1154	313	841	1169	233
Stage 1	-	-	-	-	-	-	631	631	-	523	523	-
Stage 2	-	-	-	-	-	-	295	523	-	318	646	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1096	-	-	960	-	-	225	196	686	258	192	769
Stage 1	-	-	-	-	-	-	438	473	-	505	529	-
Stage 2	-	-	-	-	-	-	692	529	-	668	465	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1096	-	-	959	-	-	212	185	685	236	181	768
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	185	-	236	181	-
Stage 1	-	-	-	-	-	-	431	465	-	497	506	-
Stage 2	-	-	-	-	-	-	652	506	-	628	458	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.7			16.6			9.8		
HCM LOS							C			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	362	1096	-	-	959	-	-	768
HCM Lane V/C Ratio	0.142	0.01	-	-	0.032	-	-	0.014
HCM Control Delay (s)	16.6	8.3	0.1	-	8.9	0.2	-	9.8
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	454	30	10	387	101	20	20	10	111	30	20
Future Volume (veh/h)	10	454	30	10	387	101	20	20	10	111	30	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	11	488	32	11	416	109	22	22	11	119	32	22
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	122	1140	75	122	942	244	229	150	55	355	48	31
Arrive On Green	0.07	0.34	0.34	0.07	0.34	0.34	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1792	3401	222	1792	2809	729	451	946	349	1038	305	196
Grp Volume(v), veh/h	11	256	264	11	263	262	55	0	0	173	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1836	1792	1787	1751	1745	0	0	1538	0	0
Q Serve(g_s), s	0.2	3.5	3.6	0.2	3.7	3.7	0.0	0.0	0.0	2.5	0.0	0.0
Cycle Q Clear(g_c), s	0.2	3.5	3.6	0.2	3.7	3.7	0.8	0.0	0.0	3.3	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.42	0.40		0.20	0.69		0.13
Lane Grp Cap(c), veh/h	122	599	615	122	599	587	435	0	0	434	0	0
V/C Ratio(X)	0.09	0.43	0.43	0.09	0.44	0.45	0.13	0.00	0.00	0.40	0.00	0.00
Avail Cap(c_a), veh/h	1122	2238	2299	1122	2238	2193	1174	0	0	1127	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.0	8.2	8.2	14.0	8.3	8.3	11.7	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	0.7	0.1	0.7	0.8	0.0	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.8	1.9	0.1	1.9	1.9	0.4	0.0	0.0	1.5	0.0	0.0
LnGrp Delay(d),s/veh	14.1	8.9	8.9	14.1	9.0	9.1	11.7	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		531			536			55				173
Approach Delay, s/veh		9.0			9.1			11.7				12.9
Approach LOS		A			A			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	16.7		9.1	6.2	16.7		9.1				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	5.6		5.3	2.2	5.7		2.8				
Green Ext Time (p_c), s	0.0	4.8		0.5	0.0	4.9		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			9.7									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↔	↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	230	80	405	240	70	50	494	816	270	40	967	120
Future Volume (veh/h)	230	80	405	240	70	50	494	816	270	40	967	120
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	240	183	150	250	73	52	515	850	0	42	1007	125
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	463	243	204	373	106	76	1263	2585	0	206	1177	146
Arrive On Green	0.13	0.13	0.13	0.10	0.10	0.10	0.72	1.00	0.00	0.11	0.25	0.25
Sat Flow, veh/h	3619	1900	1600	3619	1028	732	3510	5358	0	1810	4663	578
Grp Volume(v), veh/h	240	183	150	250	0	125	515	850	0	42	746	386
Grp Sat Flow(s),veh/h/ln	1810	1900	1600	1810	0	1761	1755	1729	0	1810	1729	1783
Q Serve(g_s), s	8.1	12.1	11.7	8.7	0.0	8.9	7.6	0.1	0.0	2.7	26.7	26.9
Cycle Q Clear(g_c), s	8.1	12.1	11.7	8.7	0.0	8.9	7.6	0.1	0.0	2.7	26.7	26.9
Prop In Lane	1.00		1.00	1.00		0.42	1.00		0.00	1.00		0.32
Lane Grp Cap(c), veh/h	463	243	204	373	0	181	1263	2585	0	206	872	450
V/C Ratio(X)	0.52	0.75	0.73	0.67	0.00	0.69	0.41	0.33	0.00	0.20	0.86	0.86
Avail Cap(c_a), veh/h	974	512	431	969	0	471	1263	2585	0	206	872	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.92	0.92	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	54.7	54.6	56.2	0.0	56.3	12.7	0.1	0.0	52.3	46.3	46.4
Incr Delay (d2), s/veh	0.3	1.8	1.9	0.8	0.0	1.7	0.1	0.3	0.0	2.2	10.5	18.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.5	5.3	4.4	0.0	4.4	3.6	0.1	0.0	1.5	14.0	15.5
LnGrp Delay(d),s/veh	53.3	56.5	56.5	57.0	0.0	58.0	12.8	0.4	0.0	54.5	56.8	65.1
LnGrp LOS	D	E	E	E		E	B	A		D	E	E
Approach Vol, veh/h		573			375			1365			1174	
Approach Delay, s/veh		55.2			57.3			5.1			59.5	
Approach LOS		E			E			A			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	52.8	38.8		20.8	20.8	70.8		17.6				
Change Period (Y+Rc), s	6.0	* 6		* 4.2	6.0	6.0		4.2				
Max Green Setting (Gmax), s	33.0	* 33		* 35	14.8	25.0		34.8				
Max Q Clear Time (g_c+1), s	19.6	28.9		14.1	4.7	2.1		10.9				
Green Ext Time (p_c), s	0.0	3.4		1.3	0.1	12.3		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay	37.2											
HCM 2010 LOS	D											
Notes												

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.
























* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	236	150	43	302	90	330	500	53	50	220	351
Future Volume (veh/h)	550	236	150	43	302	90	330	500	53	50	220	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	625	268	0	49	343	0	375	568	60	57	250	115
Adj No. of Lanes	2	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	889	467	397	394	414	352	320	1161	122	81	784	351
Arrive On Green	0.25	0.25	0.00	0.22	0.22	0.00	0.18	0.36	0.36	0.05	0.22	0.22
Sat Flow, veh/h	3583	1881	1599	1792	1881	1599	1792	3259	343	1792	3574	1599
Grp Volume(v), veh/h	625	268	0	49	343	0	375	311	317	57	250	115
Grp Sat Flow(s),veh/h/ln	1792	1881	1599	1792	1881	1599	1792	1787	1815	1792	1787	1599
Q Serve(g_s), s	23.5	18.5	0.0	3.2	25.7	0.0	26.4	20.0	20.1	4.6	8.7	8.9
Cycle Q Clear(g_c), s	23.5	18.5	0.0	3.2	25.7	0.0	26.4	20.0	20.1	4.6	8.7	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	889	467	397	394	414	352	320	637	646	81	784	351
V/C Ratio(X)	0.70	0.57	0.00	0.12	0.83	0.00	1.17	0.49	0.49	0.71	0.32	0.33
Avail Cap(c_a), veh/h	1149	603	513	533	560	476	320	637	646	133	784	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.6	48.7	0.0	46.2	55.0	0.0	60.7	37.1	37.1	69.6	48.4	48.5
Incr Delay (d2), s/veh	4.6	5.1	0.0	0.6	17.2	0.0	105.4	2.7	2.7	8.1	1.1	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	10.3	0.0	1.7	15.3	0.0	22.4	10.4	10.6	2.5	4.4	4.2
LnGrp Delay(d),s/veh	55.2	53.8	0.0	46.9	72.1	0.0	166.1	39.7	39.8	77.7	49.5	51.0
LnGrp LOS	E	D		D	E		F	D	D	E	D	D
Approach Vol, veh/h		893			392			1003			422	
Approach Delay, s/veh		54.8			69.0			87.0			53.7	
Approach LOS		D			E			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	57.6		42.0	30.9	37.4		37.5				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	11.0	48.3		47.4	26.4	32.4		44.0				
Max Q Clear Time (g_c+I1), s	6.6	22.1		25.5	28.4	10.9		27.7				
Green Ext Time (p_c), s	0.0	3.1		11.2	0.0	2.6		4.8				
Intersection Summary												
HCM 2010 Ctrl Delay			68.6									
HCM 2010 LOS			E									
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	236	150	43	302	90	330	500	53	50	220	351
Future Volume (veh/h)	550	236	150	43	302	90	330	500	53	50	220	351
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	625	268	0	49	343	0	375	568	60	57	250	115
Adj No. of Lanes	2	1	1	1	1	1	2	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	908	477	405	399	419	357	444	1113	117	82	914	409
Arrive On Green	0.25	0.25	0.00	0.22	0.22	0.00	0.13	0.34	0.34	0.05	0.26	0.26
Sat Flow, veh/h	3583	1881	1599	1792	1881	1599	3476	3259	343	1792	3574	1599
Grp Volume(v), veh/h	625	268	0	49	343	0	375	311	317	57	250	115
Grp Sat Flow(s),veh/h/ln	1792	1881	1599	1792	1881	1599	1738	1787	1815	1792	1787	1599
Q Serve(g_s), s	22.3	17.5	0.0	3.1	24.5	0.0	14.9	19.6	19.7	4.4	7.9	8.2
Cycle Q Clear(g_c), s	22.3	17.5	0.0	3.1	24.5	0.0	14.9	19.6	19.7	4.4	7.9	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	908	477	405	399	419	357	444	610	620	82	914	409
V/C Ratio(X)	0.69	0.56	0.00	0.12	0.82	0.00	0.84	0.51	0.51	0.70	0.27	0.28
Avail Cap(c_a), veh/h	1201	630	536	557	585	497	649	610	620	139	914	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	46.0	0.0	43.9	52.2	0.0	60.3	37.1	37.2	66.5	42.1	42.2
Incr Delay (d2), s/veh	4.2	4.7	0.0	0.6	16.1	0.0	7.5	3.0	3.0	7.7	0.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	9.8	0.0	1.6	14.6	0.0	7.6	10.2	10.4	2.4	4.0	3.8
LnGrp Delay(d),s/veh	52.0	50.7	0.0	44.5	68.3	0.0	67.8	40.2	40.2	74.2	42.9	43.9
LnGrp LOS	D	D		D	E		E	D	D	E	D	D
Approach Vol, veh/h		893			392			1003			422	
Approach Delay, s/veh		51.6			65.3			50.5			47.4	
Approach LOS		D			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	53.3		41.2	22.6	41.2		36.5				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	11.0	48.3		47.4	26.4	32.4		44.0				
Max Q Clear Time (g_c+I1), s	6.4	21.7		24.3	16.9	10.2		26.5				
Green Ext Time (p_c), s	0.0	3.1		11.5	1.2	2.7		5.0				
Intersection Summary												
HCM 2010 Ctrl Delay			52.5									
HCM 2010 LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
























4: Somersville Rd & Buchanan Rd

EPAP Plus Project PM Mit EB Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	435	430	63	252	70	260	300	33	130	530	582
Future Volume (veh/h)	490	435	430	63	252	70	260	300	33	130	530	582
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	537	416	0	66	262	0	271	312	34	135	552	414
Adj No. of Lanes	2	1	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	965	507	431	303	318	270	219	1128	122	160	1110	496
Arrive On Green	0.27	0.27	0.00	0.17	0.17	0.00	0.12	0.34	0.34	0.09	0.31	0.31
Sat Flow, veh/h	3619	1900	1615	1810	1900	1615	1810	3282	355	1810	3610	1612
Grp Volume(v), veh/h	537	416	0	66	262	0	271	170	176	135	552	414
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1810	1900	1615	1810	1805	1832	1810	1805	1612
Q Serve(g_s), s	18.4	29.7	0.0	4.5	19.2	0.0	17.5	9.9	10.0	10.6	18.0	34.5
Cycle Q Clear(g_c), s	18.4	29.7	0.0	4.5	19.2	0.0	17.5	9.9	10.0	10.6	18.0	34.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	965	507	431	303	318	270	219	621	630	160	1110	496
V/C Ratio(X)	0.56	0.82	0.00	0.22	0.82	0.00	1.23	0.27	0.28	0.84	0.50	0.84
Avail Cap(c_a), veh/h	1046	549	467	389	408	347	219	713	724	263	1501	671
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	49.7	0.0	51.9	58.0	0.0	63.4	34.3	34.4	64.8	40.9	46.6
Incr Delay (d2), s/veh	2.3	13.9	0.0	1.6	21.0	0.0	138.5	0.2	0.2	9.7	0.5	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	17.6	0.0	2.4	12.0	0.0	17.2	5.0	5.1	5.8	9.0	16.5
LnGrp Delay(d),s/veh	47.9	63.5	0.0	53.6	79.0	0.0	201.9	34.5	34.5	74.5	41.3	54.4
LnGrp LOS	D	E		D	E		F	C	C	E	D	D
Approach Vol, veh/h		953			328			617			1101	
Approach Delay, s/veh		54.7			73.9			108.0			50.3	
Approach LOS		D			E			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.7	54.6		43.8	22.0	49.3		29.1				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	21.0	57.0		41.7	17.5	60.0		31.0				
Max Q Clear Time (g_c+I1), s	12.6	12.0		31.7	19.5	36.5		21.2				
Green Ext Time (p_c), s	0.1	1.7		6.8	0.0	7.8		2.7				
Intersection Summary												
HCM 2010 Ctrl Delay	66.2											
HCM 2010 LOS	E											
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd













												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	435	430	63	252	70	260	300	33	130	530	582
Future Volume (veh/h)	490	435	430	63	252	70	260	300	33	130	530	582
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	537	416	0	66	262	0	271	312	34	135	552	414
Adj No. of Lanes	2	1	1	1	1	1	2	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	1001	526	447	309	325	276	331	1053	114	162	1126	503
Arrive On Green	0.28	0.28	0.00	0.17	0.17	0.00	0.09	0.32	0.32	0.09	0.31	0.31
Sat Flow, veh/h	3619	1900	1615	1810	1900	1615	3510	3282	355	1810	3610	1613
Grp Volume(v), veh/h	537	416	0	66	262	0	271	170	176	135	552	414
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1810	1900	1615	1755	1805	1832	1810	1805	1613
Q Serve(g_s), s	17.1	27.5	0.0	4.3	18.0	0.0	10.3	9.6	9.8	10.0	16.8	32.2
Cycle Q Clear(g_c), s	17.1	27.5	0.0	4.3	18.0	0.0	10.3	9.6	9.8	10.0	16.8	32.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	1001	526	447	309	325	276	331	579	588	162	1126	503
V/C Ratio(X)	0.54	0.79	0.00	0.21	0.81	0.00	0.82	0.29	0.30	0.84	0.49	0.82
Avail Cap(c_a), veh/h	1113	585	497	414	435	369	453	759	770	280	1598	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	45.4	0.0	48.3	54.0	0.0	60.2	34.5	34.6	60.7	37.9	43.1
Incr Delay (d2), s/veh	2.1	11.6	0.0	1.6	19.0	0.0	9.0	0.2	0.2	8.2	0.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	16.1	0.0	2.3	11.2	0.0	5.4	4.8	5.0	5.4	8.4	15.3
LnGrp Delay(d),s/veh	43.7	57.0	0.0	49.9	73.0	0.0	69.2	34.7	34.8	68.9	38.3	49.6
LnGrp LOS	D	E		D	E		E	C	C	E	D	D
Approach Vol, veh/h		953			328			617			1101	
Approach Delay, s/veh		49.5			68.4			49.9			46.3	
Approach LOS		D			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.1	48.5		42.8	17.3	47.3		28.2				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	21.0	57.0		41.7	17.5	60.0		31.0				
Max Q Clear Time (g_c+I1), s	12.0	11.8		29.5	12.3	34.2		20.0				
Green Ext Time (p_c), s	0.2	1.7		8.0	0.5	8.1		3.0				
Intersection Summary												
HCM 2010 Ctrl Delay			50.5									
HCM 2010 LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Cumulative (Year 2040) AM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	480	640	450	820	810	240		
Future Volume (veh/h)	480	640	450	820	810	240		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	511	302	479	872	862	106		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	705	324	909	3596	2064	628		
Arrive On Green	0.21	0.21	0.53	1.00	0.41	0.41		
Sat Flow, veh/h	3408	1568	3408	5202	5202	1531		
Grp Volume(v), veh/h	511	302	479	872	862	106		
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1531		
Q Serve(g_s), s	16.8	22.7	10.9	0.0	14.6	5.3		
Cycle Q Clear(g_c), s	16.8	22.7	10.9	0.0	14.6	5.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	705	324	909	3596	2064	628		
V/C Ratio(X)	0.73	0.93	0.53	0.24	0.42	0.17		
Avail Cap(c_a), veh/h	710	327	909	3596	2064	628		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.80	0.80	0.94	0.94		
Uniform Delay (d), s/veh	44.4	46.8	23.1	0.0	25.2	22.4		
Incr Delay (d2), s/veh	3.5	32.2	1.8	0.1	0.6	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.2	20.9	5.3	0.0	6.9	2.3		
LnGrp Delay(d),s/veh	47.9	79.0	24.8	0.1	25.8	23.0		
LnGrp LOS	D	E	C	A	C	C		
Approach Vol, veh/h	813			1351	968			
Approach Delay, s/veh	59.4			8.9	25.5			
Approach LOS	E			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		90.7		29.3	36.5	54.2		
Change Period (Y+Rc), s		5.0		4.5	4.5	5.0		
Max Green Setting (Gmax), s		85.5		25.0	32.0	49.0		
Max Q Clear Time (g_c+I1), s		2.0		24.7	12.9	16.6		
Green Ext Time (p_c), s		11.1		0.1	1.4	4.5		
Intersection Summary								
HCM 2010 Ctrl Delay			27.1					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Cumulative (Year 2040) AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	280	0	400	0	0	0	0	990	760	310	1130	0
Future Volume (veh/h)	280	0	400	0	0	0	0	990	760	310	1130	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	315	0	291				0	979	776	348	1270	0
Adj No. of Lanes	2	0	2				0	2	2	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	413	0	335				0	2348	1927	394	4006	0
Arrive On Green	0.12	0.00	0.12				0.00	0.64	0.64	0.23	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	3689	3028	3408	5202	0
Grp Volume(v), veh/h	315	0	291				0	979	776	348	1270	0
Grp Sat Flow(s),veh/h/ln	1704	0	1380				0	1845	1514	1704	1679	0
Q Serve(g_s), s	10.7	0.0	12.4				0.0	15.8	15.0	11.8	0.0	0.0
Cycle Q Clear(g_c), s	10.7	0.0	12.4				0.0	15.8	15.0	11.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	413	0	335				0	2348	1927	394	4006	0
V/C Ratio(X)	0.76	0.00	0.87				0.00	0.42	0.40	0.88	0.32	0.00
Avail Cap(c_a), veh/h	738	0	598				0	2348	1927	767	4006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.64	0.64	0.69	0.69	0.00
Uniform Delay (d), s/veh	51.1	0.0	51.8				0.0	10.8	10.7	45.3	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	2.7				0.0	0.3	0.4	1.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.9				0.0	8.1	6.4	5.6	0.1	0.0
LnGrp Delay(d),s/veh	52.2	0.0	54.5				0.0	11.1	11.1	47.2	0.1	0.0
LnGrp LOS	D		D					B	B	D	A	
Approach Vol, veh/h		606						1755			1618	
Approach Delay, s/veh		53.3						11.1			10.3	
Approach LOS		D						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.1	81.7		19.2		100.8						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	27	51.8		* 26		84.0						
Max Q Clear Time (g_c+I), s	11.3	17.8		14.4		2.0						
Green Ext Time (p_c), s	0.1	1.5		0.1		2.0						
Intersection Summary												
HCM 2010 Ctrl Delay			17.2									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Somersville Rd & Delta Fair Blvd

Cumulative (Year 2040) AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	140	60	60	360	470	140	950	20	360	710	480
Future Volume (veh/h)	320	140	60	60	360	470	140	950	20	360	710	480
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	364	145	48	67	400	308	156	1056	22	400	789	192
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	479	180	60	418	439	369	211	1406	29	448	996	443
Arrive On Green	0.13	0.13	0.13	0.24	0.24	0.24	0.12	0.27	0.27	0.13	0.28	0.28
Sat Flow, veh/h	3548	1336	442	1774	1863	1567	1774	5125	107	3442	3539	1573
Grp Volume(v), veh/h	364	0	193	67	400	308	156	698	380	400	789	192
Grp Sat Flow(s),veh/h/ln	1774	0	1778	1774	1863	1567	1774	1695	1841	1721	1770	1573
Q Serve(g_s), s	13.8	0.0	14.7	4.2	29.3	26.2	11.9	26.4	26.4	16.0	28.9	14.0
Cycle Q Clear(g_c), s	13.8	0.0	14.7	4.2	29.3	26.2	11.9	26.4	26.4	16.0	28.9	14.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	479	0	240	418	439	369	211	930	505	448	996	443
V/C Ratio(X)	0.76	0.00	0.80	0.16	0.91	0.83	0.74	0.75	0.75	0.89	0.79	0.43
Avail Cap(c_a), veh/h	646	0	324	488	512	431	233	930	505	492	996	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55	0.88	0.88	0.88
Uniform Delay (d), s/veh	58.4	0.0	58.8	42.5	52.1	50.9	59.6	46.4	46.4	59.9	46.5	41.2
Incr Delay (d2), s/veh	3.1	0.0	9.0	0.1	17.5	10.3	5.1	3.1	5.7	14.9	5.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	7.8	2.1	17.2	12.3	6.1	12.7	14.2	8.5	14.9	6.4
LnGrp Delay(d),s/veh	61.4	0.0	67.7	42.6	69.6	61.2	64.7	49.6	52.1	74.8	52.2	43.9
LnGrp LOS	E		E	D	E	E	E	D	D	E	D	D
Approach Vol, veh/h		557			775			1234			1381	
Approach Delay, s/veh		63.6			63.9			52.3			57.6	
Approach LOS		E			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.2	43.0		23.4	21.2	44.0		37.5				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	38.4	38.4		25.5	18.4	39.4		38.5				
Max Q Clear Time (g_c+11g), s	28.4	28.4		16.7	13.9	30.9		31.3				
Green Ext Time (p_c), s	0.2	8.0		1.4	0.1	6.5		1.5				
Intersection Summary												
HCM 2010 Ctrl Delay			58.0									
HCM 2010 LOS			E									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	180	160	70	370	120	400	620	60	100	380	380
Future Volume (veh/h)	410	180	160	70	370	120	400	620	60	100	380	380
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	466	205	0	80	420	0	455	705	68	114	432	212
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	407	1318	590	104	375	319	413	1218	117	138	763	341
Arrive On Green	0.23	0.37	0.00	0.06	0.20	0.00	0.23	0.37	0.37	0.08	0.21	0.21
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3290	317	1792	3574	1599
Grp Volume(v), veh/h	466	205	0	80	420	0	455	383	390	114	432	212
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1820	1792	1787	1599
Q Serve(g_s), s	33.0	5.6	0.0	6.4	29.0	0.0	33.5	24.9	25.0	9.1	15.7	17.5
Cycle Q Clear(g_c), s	33.0	5.6	0.0	6.4	29.0	0.0	33.5	24.9	25.0	9.1	15.7	17.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	407	1318	590	104	375	319	413	662	674	138	763	341
V/C Ratio(X)	1.15	0.16	0.00	0.77	1.12	0.00	1.10	0.58	0.58	0.83	0.57	0.62
Avail Cap(c_a), veh/h	407	1318	590	148	375	319	413	662	674	210	763	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	30.7	0.0	67.5	58.1	0.0	55.9	36.7	36.7	66.1	51.1	51.8
Incr Delay (d2), s/veh	90.5	0.3	0.0	11.9	82.6	0.0	74.6	3.7	3.6	12.5	3.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.5	2.8	0.0	3.5	23.6	0.0	25.1	13.0	13.3	5.0	8.1	8.5
LnGrp Delay(d),s/veh	146.7	31.0	0.0	79.3	140.7	0.0	130.5	40.3	40.3	78.5	54.2	60.1
LnGrp LOS	F	C		E	F		F	D	D	E	D	E
Approach Vol, veh/h		671			500			1228			758	
Approach Delay, s/veh		111.3			130.9			73.7			59.5	
Approach LOS		F			F			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	58.8	12.4	58.9	38.0	36.0	37.0	34.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	*5.3				
Max Green Setting (Gmax), s	7.0	48.0	12.0	49.7	33.5	31.0	33.0	*29				
Max Q Clear Time (g_c+I1), s	11.1	27.0	8.4	7.6	35.5	19.5	35.0	31.0				
Green Ext Time (p_c), s	0.1	3.8	0.0	3.6	0.0	3.7	0.0	0.0				

Intersection Summary

HCM 2010 Ctrl Delay	87.4
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	150	390	590	30	20	300
Future Vol, veh/h	150	390	590	30	20	300
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	163	424	641	33	22	326






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	677	0	-	0	1202
Stage 1	-	-	-	-	661
Stage 2	-	-	-	-	541
Critical Hdwy	4.12	-	-	-	6.82
Critical Hdwy Stg 1	-	-	-	-	5.82
Critical Hdwy Stg 2	-	-	-	-	5.82
Follow-up Hdwy	2.21	-	-	-	3.51
Pot Cap-1 Maneuver	917	-	-	-	179
Stage 1	-	-	-	-	478
Stage 2	-	-	-	-	550
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	915	-	-	-	146
Mov Cap-2 Maneuver	-	-	-	-	273
Stage 1	-	-	-	-	392
Stage 2	-	-	-	-	548

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	16
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	915	-	-	-	273	657
HCM Lane V/C Ratio	0.178	-	-	-	0.08	0.496
HCM Control Delay (s)	9.8	-	-	-	19.3	15.8
HCM Lane LOS	A	-	-	-	C	C
HCM 95th %tile Q(veh)	0.6	-	-	-	0.3	2.8

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Cumulative (Year 2040) AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	170	40	90	320	180	90	400	80	110	210	30
Future Volume (veh/h)	50	170	40	90	320	180	90	400	80	110	210	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	56	191	45	101	360	202	101	449	90	124	236	19
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	106	640	147	152	549	302	152	522	105	176	671	561
Arrive On Green	0.06	0.22	0.22	0.08	0.25	0.25	0.08	0.34	0.34	0.10	0.36	0.36
Sat Flow, veh/h	1792	2867	657	1792	2206	1214	1792	1517	304	1792	1881	1572
Grp Volume(v), veh/h	56	117	119	101	290	272	101	0	539	124	236	19
Grp Sat Flow(s),veh/h/ln	1792	1787	1737	1792	1787	1633	1792	0	1821	1792	1881	1572
Q Serve(g_s), s	2.2	3.9	4.1	3.9	10.5	10.8	3.9	0.0	19.9	4.8	6.6	0.6
Cycle Q Clear(g_c), s	2.2	3.9	4.1	3.9	10.5	10.8	3.9	0.0	19.9	4.8	6.6	0.6
Prop In Lane	1.00		0.38	1.00		0.74	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	106	399	388	152	445	406	152	0	626	176	671	561
V/C Ratio(X)	0.53	0.29	0.31	0.66	0.65	0.67	0.66	0.00	0.86	0.71	0.35	0.03
Avail Cap(c_a), veh/h	498	744	724	498	744	680	498	0	759	498	784	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	23.2	23.3	32.0	24.3	24.4	32.0	0.0	22.0	31.5	17.0	15.1
Incr Delay (d2), s/veh	4.0	0.6	0.6	4.9	2.3	2.7	4.9	0.0	9.3	5.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.0	2.1	2.1	5.4	5.1	2.1	0.0	11.5	2.6	3.5	0.2
LnGrp Delay(d),s/veh	36.9	23.8	24.0	36.8	26.6	27.1	36.8	0.0	31.3	36.6	17.5	15.1
LnGrp LOS	D	C	C	D	C	C	D		C	D	B	B
Approach Vol, veh/h		292			663			640			379	
Approach Delay, s/veh		26.4			28.3			32.2			23.6	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	29.8	10.1	21.1	10.1	30.7	8.3	22.9				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	6.8	21.9	5.9	6.1	5.9	8.6	4.2	12.8				
Green Ext Time (p_c), s	0.2	2.9	0.2	1.8	0.2	1.9	0.1	4.4				
Intersection Summary												
HCM 2010 Ctrl Delay			28.4									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	360	10	40	500	10	30	0	70	10	0	10
Future Vol, veh/h	0	360	10	40	500	10	30	0	70	10	0	10
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	434	12	48	602	11	36	0	84	11	0	11



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	613	0	0	450	0	0	846	1153	227	921	1154	312
Stage 1	-	-	-	-	-	-	444	444	-	704	704	-
Stage 2	-	-	-	-	-	-	402	709	-	217	450	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	962	-	-	1114	-	-	257	196	779	225	196	684
Stage 1	-	-	-	-	-	-	565	574	-	394	438	-
Stage 2	-	-	-	-	-	-	599	435	-	765	570	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	962	-	-	1110	-	-	238	182	776	190	182	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	238	182	-	190	182	-
Stage 1	-	-	-	-	-	-	563	572	-	394	409	-
Stage 2	-	-	-	-	-	-	548	406	-	682	568	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.8			15.5			18.1		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	462	962	-	-	1110	-	-	297
HCM Lane V/C Ratio	0.261	-	-	-	0.043	-	-	0.073
HCM Control Delay (s)	15.5	0	-	-	8.4	0.2	-	18.1
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0.2

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Cumulative (Year 2040) AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	350	20	10	440	140	40	80	30	80	30	40
Future Volume (veh/h)	30	350	20	10	440	140	40	80	30	80	30	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	35	412	24	12	518	165	47	94	35	94	35	47
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	131	1382	80	109	1038	329	179	163	54	276	64	69
Arrive On Green	0.07	0.40	0.40	0.06	0.39	0.39	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1792	3426	199	1792	2653	840	357	1050	349	809	410	444
Grp Volume(v), veh/h	35	214	222	12	348	335	176	0	0	176	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1838	1792	1787	1707	1756	0	0	1663	0	0
Q Serve(g_s), s	0.7	3.0	3.0	0.2	5.4	5.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.7	3.0	3.0	0.2	5.4	5.5	3.3	0.0	0.0	3.3	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.49	0.27		0.20	0.53		0.27
Lane Grp Cap(c), veh/h	131	721	741	109	699	668	397	0	0	408	0	0
V/C Ratio(X)	0.27	0.30	0.30	0.11	0.50	0.50	0.44	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	974	1943	1998	974	1943	1855	1033	0	0	968	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	7.4	7.4	16.3	8.5	8.5	14.5	0.0	0.0	14.5	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.2	0.8	0.8	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.5	0.1	2.8	2.7	1.7	0.0	0.0	1.7	0.0	0.0
LnGrp Delay(d),s/veh	16.5	7.8	7.8	16.5	9.2	9.3	14.8	0.0	0.0	14.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		471			695			176			176	
Approach Delay, s/veh		8.4			9.4			14.8			14.8	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	20.8		9.7	6.7	20.4		9.7				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	5.0		5.3	2.7	7.5		5.3				
Green Ext Time (p_c), s	0.0	3.9		0.6	0.0	6.8		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			10.4									
HCM 2010 LOS			B									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Cumulative (Year 2040) AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗	↘	↔	↖	↗	↔	↖	↗	↔	↖	↘
Traffic Volume (veh/h)	100	30	120	210	50	60	290	800	220	50	730	130
Future Volume (veh/h)	100	30	120	210	50	60	290	800	220	50	730	130
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	106	53	46	223	53	64	309	851	0	53	777	138
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	213	112	92	345	74	89	1422	3187	0	68	1092	192
Arrive On Green	0.06	0.06	0.06	0.10	0.10	0.10	0.84	1.00	0.00	0.04	0.26	0.26
Sat Flow, veh/h	3480	1827	1499	3480	746	900	3375	5152	0	1740	4256	749
Grp Volume(v), veh/h	106	53	46	223	0	117	309	851	0	53	606	309
Grp Sat Flow(s),veh/h/ln	1740	1827	1499	1740	0	1646	1688	1663	0	1740	1663	1680
Q Serve(g_s), s	3.5	3.4	3.6	7.4	0.0	8.3	2.1	0.0	0.0	3.6	19.9	20.1
Cycle Q Clear(g_c), s	3.5	3.4	3.6	7.4	0.0	8.3	2.1	0.0	0.0	3.6	19.9	20.1
Prop In Lane	1.00		1.00	1.00		0.55	1.00		0.00	1.00		0.45
Lane Grp Cap(c), veh/h	213	112	92	345	0	163	1422	3187	0	68	853	431
V/C Ratio(X)	0.50	0.47	0.50	0.65	0.00	0.72	0.22	0.27	0.00	0.78	0.71	0.72
Avail Cap(c_a), veh/h	783	411	337	1009	0	477	1422	3187	0	200	853	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.91	0.91	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	54.5	54.6	52.0	0.0	52.4	5.6	0.0	0.0	57.2	40.5	40.6
Incr Delay (d2), s/veh	0.7	1.2	1.6	0.8	0.0	2.2	0.0	0.2	0.0	7.1	5.0	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.7	1.5	3.6	0.0	3.9	0.9	0.1	0.0	1.9	9.7	10.5
LnGrp Delay(d),s/veh	55.2	55.6	56.1	52.8	0.0	54.6	5.7	0.2	0.0	64.2	45.5	50.5
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		205			340			1160			968	
Approach Delay, s/veh		55.5			53.4			1.6			48.1	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	56.6	35.8		11.5	9.7	82.7		16.1				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+14), s	14.6	22.1		5.6	5.6	2.0		10.3				
Green Ext Time (p_c), s	0.3	2.8		0.4	0.0	12.4		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			29.2									
HCM 2010 LOS			C									
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Cumulative (Year 2040) PM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	560	920	520	1250	1320	470		
Future Volume (veh/h)	560	920	520	1250	1320	470		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	589	696	547	1316	1389	196		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	1069	492	601	3180	2115	632		
Arrive On Green	0.31	0.31	0.35	1.00	0.41	0.41		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1534		
Grp Volume(v), veh/h	589	696	547	1316	1389	196		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1534		
Q Serve(g_s), s	18.4	40.0	19.5	0.0	28.3	11.2		
Cycle Q Clear(g_c), s	18.4	40.0	19.5	0.0	28.3	11.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1069	492	601	3180	2115	632		
V/C Ratio(X)	0.55	1.41	0.91	0.41	0.66	0.31		
Avail Cap(c_a), veh/h	1069	492	722	3180	2115	632		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.26	0.26	0.83	0.83		
Uniform Delay (d), s/veh	37.5	45.0	41.6	0.0	30.8	25.8		
Incr Delay (d2), s/veh	0.5	198.3	4.3	0.1	1.3	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	57.0	9.6	0.0	13.6	4.9		
LnGrp Delay(d),s/veh	38.0	243.3	45.9	0.1	32.2	26.8		
LnGrp LOS	D	F	D	A	C	C		
Approach Vol, veh/h	1285			1863	1585			
Approach Delay, s/veh	149.2			13.5	31.5			
Approach LOS	F			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	85.5		44.5		27.0	58.5		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		42.0		21.5	30.3		
Green Ext Time (p_c), s	21.4		0.0		0.9	7.2		
Intersection Summary								
HCM 2010 Ctrl Delay			56.4					
HCM 2010 LOS			E					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Cumulative (Year 2040) PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	550	0	800	0	0	0	0	1220	930	820	1420	0
Future Volume (veh/h)	550	0	800	0	0	0	0	1220	930	820	1420	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	0	1881				0	1881	1881	1881	1881	0
Adj Flow Rate, veh/h	573	0	755				0	1522	480	854	1479	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1				0	1	1	1	1	0
Cap, veh/h	829	0	671				0	2032	561	989	3516	0
Arrive On Green	0.24	0.00	0.24				0.00	0.36	0.36	0.57	1.00	0.00
Sat Flow, veh/h	3476	0	2814				0	5644	1557	3476	5305	0
Grp Volume(v), veh/h	573	0	755				0	1522	480	854	1479	0
Grp Sat Flow(s),veh/h/ln	1738	0	1407				0	1881	1557	1738	1712	0
Q Serve(g_s), s	19.5	0.0	31.0				0.0	30.7	37.1	27.1	0.0	0.0
Cycle Q Clear(g_c), s	19.5	0.0	31.0				0.0	30.7	37.1	27.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	829	0	671				0	2032	561	989	3516	0
V/C Ratio(X)	0.69	0.00	1.13				0.00	0.75	0.86	0.86	0.42	0.00
Avail Cap(c_a), veh/h	829	0	671				0	2032	561	989	3516	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.46	0.46	0.27	0.27	0.00
Uniform Delay (d), s/veh	45.1	0.0	49.5				0.0	36.5	38.5	25.9	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	74.5				0.0	1.2	7.9	2.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	19.0				0.0	16.2	17.1	13.2	0.0	0.0
LnGrp Delay(d),s/veh	47.2	0.0	124.0				0.0	37.7	46.4	28.8	0.1	0.0
LnGrp LOS	D		F					D	D	C	A	
Approach Vol, veh/h		1328						2002			2333	
Approach Delay, s/veh		90.9						39.7			10.6	
Approach LOS		F						D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	42.2	52.1		35.7		94.3						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	33	46.8		* 31		89.0						
Max Q Clear Time (g_c+Q), s	29.1	39.1		33.0		2.0						
Green Ext Time (p_c), s	0.1	1.9		0.0		2.4						
Intersection Summary												
HCM 2010 Ctrl Delay			39.7									
HCM 2010 LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Cumulative (Year 2040) PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	270	90	80	200	480	120	1150	40	590	1220	380
Future Volume (veh/h)	590	270	90	80	200	480	120	1150	40	590	1220	380
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	633	243	84	82	206	214	124	1186	41	608	1258	247
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	710	263	91	293	308	258	136	1381	48	626	1327	579
Arrive On Green	0.20	0.20	0.20	0.16	0.16	0.16	0.08	0.27	0.27	0.18	0.37	0.37
Sat Flow, veh/h	3583	1327	459	1792	1881	1576	1792	5092	176	3476	3574	1559
Grp Volume(v), veh/h	633	0	327	82	206	214	124	797	430	608	1258	247
Grp Sat Flow(s),veh/h/ln	1792	0	1786	1792	1881	1576	1792	1712	1844	1738	1787	1559
Q Serve(g_s), s	25.8	0.0	27.0	6.0	15.4	19.7	10.3	33.2	33.2	26.1	51.2	17.8
Cycle Q Clear(g_c), s	25.8	0.0	27.0	6.0	15.4	19.7	10.3	33.2	33.2	26.1	51.2	17.8
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	710	0	354	293	308	258	136	929	500	626	1327	579
V/C Ratio(X)	0.89	0.00	0.92	0.28	0.67	0.83	0.91	0.86	0.86	0.97	0.95	0.43
Avail Cap(c_a), veh/h	733	0	365	406	426	357	136	929	500	626	1327	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.61	0.61	0.61	0.69	0.69	0.69
Uniform Delay (d), s/veh	58.6	0.0	59.0	55.0	58.9	60.7	68.8	51.9	51.9	61.1	45.7	35.2
Incr Delay (d2), s/veh	12.7	0.0	28.1	0.2	0.9	8.1	36.0	6.5	11.3	23.0	11.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	16.1	3.0	8.1	9.2	6.5	16.6	18.5	14.5	27.3	7.9
LnGrp Delay(d),s/veh	71.3	0.0	87.1	55.2	59.9	68.8	104.8	58.4	63.2	84.1	57.1	36.8
LnGrp LOS	E		F	E	E	E	F	E	E	F	E	D
Approach Vol, veh/h		960			502			1351			2113	
Approach Delay, s/veh		76.7			62.9			64.2			62.5	
Approach LOS		E			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.0	45.3		34.2	16.0	60.3		29.0				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	40.7	40.7		30.7	11.4	55.7		34.0				
Max Q Clear Time (g_c+Rc), s	35.2	35.2		29.0	12.3	53.2		21.7				
Green Ext Time (p_c), s	0.0	4.9		0.8	0.0	2.4		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay			65.8									
HCM 2010 LOS			E									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	430	510	80	220	90	320	600	70	130	680	500
Future Volume (veh/h)	440	430	510	80	220	90	320	600	70	130	680	500
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	458	448	0	83	229	0	333	625	73	135	708	346
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	466	1262	565	111	292	248	357	1142	133	164	866	387
Arrive On Green	0.26	0.35	0.00	0.06	0.15	0.00	0.20	0.35	0.35	0.09	0.24	0.24
Sat Flow, veh/h	1810	3610	1615	1810	1900	1615	1810	3253	379	1810	3610	1612
Grp Volume(v), veh/h	458	448	0	83	229	0	333	346	352	135	708	346
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1900	1615	1810	1805	1827	1810	1805	1612
Q Serve(g_s), s	31.2	11.4	0.0	5.6	14.4	0.0	22.5	19.1	19.2	9.1	23.0	25.8
Cycle Q Clear(g_c), s	31.2	11.4	0.0	5.6	14.4	0.0	22.5	19.1	19.2	9.1	23.0	25.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	466	1262	565	111	292	248	357	633	641	164	866	387
V/C Ratio(X)	0.98	0.35	0.00	0.75	0.79	0.00	0.93	0.55	0.55	0.82	0.82	0.89
Avail Cap(c_a), veh/h	466	1445	646	160	444	377	360	633	641	262	896	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	30.0	0.0	57.3	50.6	0.0	49.0	32.4	32.4	55.5	44.6	45.7
Incr Delay (d2), s/veh	36.8	0.8	0.0	8.4	18.9	0.0	30.7	0.8	0.8	8.6	6.1	22.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	5.9	0.0	3.1	9.1	0.0	14.2	9.7	9.8	5.0	12.2	13.8
LnGrp Delay(d),s/veh	82.6	30.8	0.0	65.7	69.5	0.0	79.7	33.2	33.2	64.1	50.7	67.6
LnGrp LOS	F	C		E	E		E	C	C	E	D	E
Approach Vol, veh/h		906			312			1031			1189	
Approach Delay, s/veh		57.0			68.5			48.2			57.2	
Approach LOS		E			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	48.6	11.6	48.7	29.0	34.8	36.0	24.4				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	38.0	38.0	11.0	49.7	24.7	30.8	32.0	* 29				
Max Q Clear Time (g_c+11), s	11.1	21.2	7.6	13.4	24.5	27.8	33.2	16.4				
Green Ext Time (p_c), s	0.1	3.2	0.0	8.3	0.0	2.0	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			55.5									
HCM 2010 LOS			E									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗		↖	↖
Traffic Vol, veh/h	200	660	490	70	30	200
Future Vol, veh/h	200	660	490	70	30	200
Conflicting Peds, #/hr	1	0	0	1	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	206	680	505	72	31	206






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	578	0	-	0	1298
Stage 1	-	-	-	-	542
Stage 2	-	-	-	-	756
Critical Hdwy	4.12	-	-	-	6.82
Critical Hdwy Stg 1	-	-	-	-	5.82
Critical Hdwy Stg 2	-	-	-	-	5.82
Follow-up Hdwy	2.21	-	-	-	3.51
Pot Cap-1 Maneuver	999	-	-	-	155
Stage 1	-	-	-	-	550
Stage 2	-	-	-	-	427
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	998	-	-	-	123
Mov Cap-2 Maneuver	-	-	-	-	253
Stage 1	-	-	-	-	436
Stage 2	-	-	-	-	427

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	998	-	-	-	253	709
HCM Lane V/C Ratio	0.207	-	-	-	0.122	0.291
HCM Control Delay (s)	9.5	-	-	-	21.2	12.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.4	1.2

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Cumulative (Year 2040) PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	380	140	60	220	130	90	310	60	240	480	40
Future Volume (veh/h)	90	380	140	60	220	130	90	310	60	240	480	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	95	400	147	63	232	137	95	326	63	253	505	22
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	148	608	221	115	481	273	148	410	79	308	672	561
Arrive On Green	0.08	0.24	0.24	0.06	0.22	0.22	0.08	0.27	0.27	0.17	0.36	0.36
Sat Flow, veh/h	1792	2557	927	1792	2189	1242	1792	1531	296	1792	1881	1570
Grp Volume(v), veh/h	95	278	269	63	188	181	95	0	389	253	505	22
Grp Sat Flow(s),veh/h/ln	1792	1787	1697	1792	1787	1644	1792	0	1827	1792	1881	1570
Q Serve(g_s), s	3.6	9.8	10.0	2.4	6.4	6.7	3.6	0.0	13.8	9.5	16.4	0.6
Cycle Q Clear(g_c), s	3.6	9.8	10.0	2.4	6.4	6.7	3.6	0.0	13.8	9.5	16.4	0.6
Prop In Lane	1.00		0.55	1.00		0.76	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	148	425	404	115	393	361	148	0	489	308	672	561
V/C Ratio(X)	0.64	0.65	0.67	0.55	0.48	0.50	0.64	0.00	0.79	0.82	0.75	0.04
Avail Cap(c_a), veh/h	514	769	730	514	769	707	514	0	786	514	810	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	24.0	24.1	31.6	23.7	23.9	31.0	0.0	23.7	27.8	19.7	14.6
Incr Delay (d2), s/veh	4.6	2.4	2.7	4.0	1.3	1.5	4.6	0.0	4.2	5.5	3.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.1	5.0	1.3	3.3	3.2	2.0	0.0	7.5	5.2	9.3	0.3
LnGrp Delay(d),s/veh	35.6	26.4	26.7	35.7	25.0	25.4	35.6	0.0	27.9	33.3	23.5	14.7
LnGrp LOS	D	C	C	D	C	C	D		C	C	C	B
Approach Vol, veh/h		642			432			484			780	
Approach Delay, s/veh		27.9			26.7			29.4			26.4	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	23.7	8.5	21.6	9.8	29.9	9.7	20.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	11.5	15.8	4.4	12.0	5.6	18.4	5.6	8.7				
Green Ext Time (p_c), s	0.5	2.8	0.1	4.3	0.2	3.4	0.2	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay				27.5								
HCM 2010 LOS				C								
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	10	680	30	30	370	0	20	0	40	0	0	10
Future Vol, veh/h	10	680	30	30	370	0	20	0	40	0	0	10
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	97	97	97	97	92	97	92	97	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	11	701	31	31	381	0	21	0	41	0	0	11



















Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	381	0	0	733	0	0	995	1183	367	816	1198	193
Stage 1	-	-	-	-	-	-	740	740	-	443	443	-
Stage 2	-	-	-	-	-	-	255	443	-	373	755	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1174	-	-	874	-	-	200	188	633	269	184	816
Stage 1	-	-	-	-	-	-	377	421	-	564	574	-
Stage 2	-	-	-	-	-	-	730	574	-	620	415	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1174	-	-	873	-	-	188	177	632	240	173	814
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	177	-	240	173	-
Stage 1	-	-	-	-	-	-	371	414	-	555	548	-
Stage 2	-	-	-	-	-	-	687	548	-	570	408	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.2		0.9		17.3		9.5	
HCM LOS					C		A	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	354	1174	-	-	873	-	-	814
HCM Lane V/C Ratio	0.175	0.009	-	-	0.035	-	-	0.013
HCM Control Delay (s)	17.3	8.1	0.1	-	9.3	0.2	-	9.5
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Cumulative (Year 2040) PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	570	30	10	320	100	20	30	20	130	30	20
Future Volume (veh/h)	20	570	30	10	320	100	20	30	20	130	30	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	22	613	32	11	344	108	22	32	22	140	32	22
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	122	1270	66	111	972	301	183	166	89	362	51	30
Arrive On Green	0.07	0.37	0.37	0.06	0.36	0.36	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1792	3452	180	1792	2689	831	299	943	506	1063	290	173
Grp Volume(v), veh/h	22	317	328	11	227	225	76	0	0	194	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1845	1792	1787	1733	1749	0	0	1526	0	0
Q Serve(g_s), s	0.4	4.8	4.9	0.2	3.3	3.4	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.8	4.9	0.2	3.3	3.4	1.3	0.0	0.0	4.1	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.48	0.29		0.29	0.72		0.11
Lane Grp Cap(c), veh/h	122	658	679	111	646	627	438	0	0	443	0	0
V/C Ratio(X)	0.18	0.48	0.48	0.10	0.35	0.36	0.17	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1009	2014	2078	1009	2014	1953	1065	0	0	1004	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.6	8.6	8.6	15.7	8.3	8.3	12.6	0.0	0.0	13.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.8	0.1	0.5	0.5	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.5	2.6	0.1	1.7	1.6	0.6	0.0	0.0	1.8	0.0	0.0
LnGrp Delay(d),s/veh	15.9	9.4	9.4	15.9	8.8	8.8	12.7	0.0	0.0	13.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		667			463			76				194
Approach Delay, s/veh		9.6			8.9			12.7				13.9
Approach LOS		A			A			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	19.1		10.2	6.4	18.8		10.2				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	6.9		6.1	2.4	5.4		3.3				
Green Ext Time (p_c), s	0.0	6.2		0.6	0.0	4.2		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				10.2								
HCM 2010 LOS				B								
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

9: Auto Center Dr & Century Blvd/Mahogany Way

Cumulative (Year 2040) PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↔	↔		↔	↑↑		↔	↑↑	
Traffic Volume (veh/h)	260	90	450	270	80	60	560	950	310	50	1080	130
Future Volume (veh/h)	260	90	450	270	80	60	560	950	310	50	1080	130
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	271	219	177	281	83	62	583	990	0	52	1125	135
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	530	278	234	414	115	86	1159	2430	0	206	1181	142
Arrive On Green	0.15	0.15	0.15	0.11	0.11	0.11	0.66	0.94	0.00	0.11	0.25	0.25
Sat Flow, veh/h	3619	1900	1602	3619	1006	752	3510	5358	0	1810	4683	561
Grp Volume(v), veh/h	271	219	177	281	0	145	583	990	0	52	831	429
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1758	1755	1729	0	1810	1729	1786
Q Serve(g_s), s	9.0	14.5	13.8	9.7	0.0	10.4	11.0	2.5	0.0	3.4	30.7	30.8
Cycle Q Clear(g_c), s	9.0	14.5	13.8	9.7	0.0	10.4	11.0	2.5	0.0	3.4	30.7	30.8
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	530	278	234	414	0	201	1159	2430	0	206	872	451
V/C Ratio(X)	0.51	0.79	0.76	0.68	0.00	0.72	0.50	0.41	0.00	0.25	0.95	0.95
Avail Cap(c_a), veh/h	974	512	431	969	0	471	1159	2430	0	206	872	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.89	0.89	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	53.5	53.3	55.3	0.0	55.6	16.7	2.3	0.0	52.6	47.8	47.8
Incr Delay (d2), s/veh	0.3	1.9	1.9	0.7	0.0	1.8	0.1	0.5	0.0	2.9	20.8	32.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	7.8	6.2	4.9	0.0	5.1	5.2	1.2	0.0	1.9	17.2	19.2
LnGrp Delay(d),s/veh	51.5	55.4	55.1	56.0	0.0	57.4	16.8	2.7	0.0	55.5	68.6	80.0
LnGrp LOS	D	E	E	E		E	B	A		E	E	E
Approach Vol, veh/h		667			426			1573			1312	
Approach Delay, s/veh		53.7			56.5			7.9			71.8	
Approach LOS		D			E			A			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	48.9	38.8		23.2	20.8	66.9		19.1				
Change Period (Y+Rc), s	6.0	* 6		* 4.2	6.0	6.0		4.2				
Max Green Setting (Gmax), s	33.0	* 33		* 35	14.8	25.0		34.8				
Max Q Clear Time (g_c+1), s	11.3	32.8		16.5	5.4	4.5		12.4				
Green Ext Time (p_c), s	0.0	0.0		1.5	0.2	13.1		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	41.9											
HCM 2010 LOS	D											
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Cumulative (Year 2040) Plus Project AM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	480	658	474	830	819	240		
Future Volume (veh/h)	480	658	474	830	819	240		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	511	329	504	883	871	104		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	710	327	909	3588	2056	625		
Arrive On Green	0.21	0.21	0.53	1.00	0.41	0.41		
Sat Flow, veh/h	3408	1568	3408	5202	5202	1531		
Grp Volume(v), veh/h	511	329	504	883	871	104		
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1531		
Q Serve(g_s), s	16.8	25.0	11.8	0.0	14.8	5.2		
Cycle Q Clear(g_c), s	16.8	25.0	11.8	0.0	14.8	5.2		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	710	327	909	3588	2056	625		
V/C Ratio(X)	0.72	1.01	0.55	0.25	0.42	0.17		
Avail Cap(c_a), veh/h	710	327	909	3588	2056	625		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.79	0.79	0.94	0.94		
Uniform Delay (d), s/veh	44.2	47.5	23.3	0.0	25.4	22.5		
Incr Delay (d2), s/veh	3.4	51.6	1.9	0.1	0.6	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.2	24.1	5.7	0.0	7.0	2.3		
LnGrp Delay(d),s/veh	47.6	99.1	25.2	0.1	26.0	23.1		
LnGrp LOS	D	F	C	A	C	C		
Approach Vol, veh/h	840			1387	975			
Approach Delay, s/veh	67.8			9.2	25.7			
Approach LOS	E			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	90.5		29.5		36.5	54.0		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		27.0		13.8	16.8		
Green Ext Time (p_c), s	11.3		0.0		1.5	4.6		
Intersection Summary								
HCM 2010 Ctrl Delay			29.6					
HCM 2010 LOS			C					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Cumulative (Year 2040) Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	280	0	410	0	0	0	0	1024	776	310	1157	0
Future Volume (veh/h)	280	0	410	0	0	0	0	1024	776	310	1157	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	315	0	318				0	1499	461	348	1300	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	446	0	361				0	3468	949	394	3957	0
Arrive On Green	0.13	0.00	0.13				0.00	0.63	0.63	0.23	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	5534	1514	3408	5202	0
Grp Volume(v), veh/h	315	0	318				0	1499	461	348	1300	0
Grp Sat Flow(s),veh/h/ln	1704	0	1380				0	1845	1514	1704	1679	0
Q Serve(g_s), s	10.6	0.0	13.6				0.0	16.6	19.6	11.8	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.0	13.6				0.0	16.6	19.6	11.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	446	0	361				0	3468	949	394	3957	0
V/C Ratio(X)	0.71	0.00	0.88				0.00	0.43	0.49	0.88	0.33	0.00
Avail Cap(c_a), veh/h	738	0	598				0	3468	949	767	3957	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.57	0.57	0.67	0.67	0.00
Uniform Delay (d), s/veh	49.9	0.0	51.2				0.0	11.5	12.0	45.3	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	4.7				0.0	0.2	1.0	1.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	5.4				0.0	8.5	8.3	5.6	0.1	0.0
LnGrp Delay(d),s/veh	50.7	0.0	55.9				0.0	11.7	13.0	47.1	0.1	0.0
LnGrp LOS	D		E					B	B	D	A	
Approach Vol, veh/h		633						1960			1648	
Approach Delay, s/veh		53.3						12.0			10.1	
Approach LOS		D						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	9.1	80.5		20.4		99.6						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	27	51.8		* 26		84.0						
Max Q Clear Time (g_c+I), s	11.3	21.6		15.6		2.0						
Green Ext Time (p_c), s	0.1	2.3		0.1		2.1						
Intersection Summary												
HCM 2010 Ctrl Delay			17.4									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Somersville Rd & Delta Fair Blvd

Cumulative (Year 2040) Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	155	60	61	368	520	140	950	20	397	710	480
Future Volume (veh/h)	320	155	60	61	368	520	140	950	20	397	710	480
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	390	124	67	68	409	367	156	1056	22	441	789	187
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	155	84	446	469	395	230	1406	29	485	996	443
Arrive On Green	0.14	0.14	0.14	0.25	0.25	0.25	0.13	0.27	0.27	0.14	0.28	0.28
Sat Flow, veh/h	3548	1133	612	1774	1863	1568	1774	5125	107	3442	3539	1573
Grp Volume(v), veh/h	390	0	191	68	409	367	156	698	380	441	789	187
Grp Sat Flow(s),veh/h/ln	1774	0	1745	1774	1863	1568	1774	1695	1841	1721	1770	1573
Q Serve(g_s), s	14.9	0.0	14.9	4.2	29.5	32.0	11.8	26.4	26.4	17.7	28.9	13.6
Cycle Q Clear(g_c), s	14.9	0.0	14.9	4.2	29.5	32.0	11.8	26.4	26.4	17.7	28.9	13.6
Prop In Lane	1.00		0.35	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	484	0	238	446	469	395	230	930	505	485	996	443
V/C Ratio(X)	0.81	0.00	0.80	0.15	0.87	0.93	0.68	0.75	0.75	0.91	0.79	0.42
Avail Cap(c_a), veh/h	646	0	318	488	512	431	233	930	505	492	996	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55	0.87	0.87	0.87
Uniform Delay (d), s/veh	58.6	0.0	58.6	40.8	50.2	51.2	58.2	46.4	46.4	59.3	46.5	41.0
Incr Delay (d2), s/veh	4.9	0.0	9.2	0.1	13.4	24.6	3.5	3.1	5.6	18.3	5.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	7.8	2.0	17.0	16.5	6.0	12.7	14.2	9.6	14.9	6.2
LnGrp Delay(d),s/veh	63.5	0.0	67.8	40.8	63.6	75.8	61.6	49.5	52.1	77.6	52.2	43.6
LnGrp LOS	E		E	D	E	E	E	D	D	E	D	D
Approach Vol, veh/h		581			844			1234			1417	
Approach Delay, s/veh		64.9			67.1			51.8			59.0	
Approach LOS		E			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.7	43.0		23.6	22.7	44.0		39.7				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	38.4	38.4		25.5	18.4	39.4		38.5				
Max Q Clear Time (g_c+1), s	28.4	28.4		16.9	13.8	30.9		34.0				
Green Ext Time (p_c), s	0.0	8.0		1.4	0.1	6.5		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			59.3									
HCM 2010 LOS			E									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	191	160	76	377	120	400	620	68	100	380	381
Future Volume (veh/h)	410	191	160	76	377	120	400	620	68	100	380	381
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	466	217	0	86	428	0	455	705	77	114	432	210
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	407	1306	584	110	375	319	413	1202	131	138	763	341
Arrive On Green	0.23	0.37	0.00	0.06	0.20	0.00	0.23	0.37	0.37	0.08	0.21	0.21
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3246	354	1792	3574	1599
Grp Volume(v), veh/h	466	217	0	86	428	0	455	388	394	114	432	210
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1813	1792	1787	1599
Q Serve(g_s), s	33.0	6.0	0.0	6.9	29.0	0.0	33.5	25.4	25.4	9.1	15.7	17.3
Cycle Q Clear(g_c), s	33.0	6.0	0.0	6.9	29.0	0.0	33.5	25.4	25.4	9.1	15.7	17.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	407	1306	584	110	375	319	413	662	671	138	763	341
V/C Ratio(X)	1.15	0.17	0.00	0.78	1.14	0.00	1.10	0.59	0.59	0.83	0.57	0.62
Avail Cap(c_a), veh/h	407	1306	584	148	375	319	413	662	671	210	763	341
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.2	31.1	0.0	67.2	58.1	0.0	55.9	36.8	36.8	66.1	51.1	51.8
Incr Delay (d2), s/veh	90.5	0.3	0.0	15.2	90.2	0.0	74.6	3.8	3.7	12.5	3.0	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.5	3.0	0.0	3.9	24.4	0.0	25.1	13.2	13.4	5.0	8.1	8.4
LnGrp Delay(d),s/veh	146.7	31.4	0.0	82.4	148.4	0.0	130.5	40.6	40.5	78.5	54.2	59.8
LnGrp LOS	F	C		F	F		F	D	D	E	D	E
Approach Vol, veh/h		683			514			1237			756	
Approach Delay, s/veh		110.1			137.3			73.7			59.4	
Approach LOS		F			F			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.2	58.8	12.9	58.4	38.0	36.0	37.0	34.3				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	*5.3				
Max Green Setting (Gmax), s	7.0	48.0	12.0	49.7	33.5	31.0	33.0	*29				
Max Q Clear Time (g_c+I1), s	11.1	27.4	8.9	8.0	35.5	19.3	35.0	31.0				
Green Ext Time (p_c), s	0.1	3.9	0.0	3.8	0.0	3.7	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			88.3									
HCM 2010 LOS			F									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	159	433	645	38	21	304
Future Vol, veh/h	159	433	645	38	21	304
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	173	471	701	41	23	330

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	745	0	-	0	1310 374
Stage 1	-	-	-	-	725 -
Stage 2	-	-	-	-	585 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	865	-	-	-	152 626
Stage 1	-	-	-	-	443 -
Stage 2	-	-	-	-	523 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	863	-	-	-	121 624
Mov Cap-2 Maneuver	-	-	-	-	245 -
Stage 1	-	-	-	-	354 -
Stage 2	-	-	-	-	521 -






















Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	863	-	-	-	245	624
HCM Lane V/C Ratio	0.2	-	-	-	0.093	0.53
HCM Control Delay (s)	10.2	-	-	-	21.2	17.1
HCM Lane LOS	B	-	-	-	C	C
HCM 95th %tile Q(veh)	0.7	-	-	-	0.3	3.1

HCM 2010 Signalized Intersection Summary

6: Delta Fair Blvd & Buchanan Rd

Cumulative (Year 2040) Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	170	40	92	324	200	90	411	80	115	216	40
Future Volume (veh/h)	69	170	40	92	324	200	90	411	80	115	216	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	78	191	45	103	364	225	101	462	90	129	243	21
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	126	681	156	151	534	324	149	523	102	178	675	565
Arrive On Green	0.07	0.24	0.24	0.08	0.25	0.25	0.08	0.34	0.34	0.10	0.36	0.36
Sat Flow, veh/h	1792	2868	657	1792	2119	1286	1792	1525	297	1792	1881	1572
Grp Volume(v), veh/h	78	117	119	103	306	283	101	0	552	129	243	21
Grp Sat Flow(s),veh/h/ln	1792	1787	1738	1792	1787	1618	1792	0	1822	1792	1881	1572
Q Serve(g_s), s	3.2	4.1	4.3	4.3	11.8	12.1	4.2	0.0	21.8	5.3	7.3	0.7
Cycle Q Clear(g_c), s	3.2	4.1	4.3	4.3	11.8	12.1	4.2	0.0	21.8	5.3	7.3	0.7
Prop In Lane	1.00		0.38	1.00		0.79	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	126	425	413	151	450	407	149	0	625	178	675	565
V/C Ratio(X)	0.62	0.28	0.29	0.68	0.68	0.69	0.68	0.00	0.88	0.73	0.36	0.04
Avail Cap(c_a), veh/h	469	702	682	469	702	635	469	0	716	469	739	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	23.8	23.8	34.0	25.8	25.9	34.0	0.0	23.6	33.4	18.0	15.9
Incr Delay (d2), s/veh	4.9	0.5	0.5	5.3	2.6	3.0	5.3	0.0	12.0	5.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.1	2.1	2.3	6.1	5.8	2.3	0.0	13.0	2.9	3.9	0.3
LnGrp Delay(d),s/veh	39.4	24.3	24.4	39.3	28.4	28.9	39.3	0.0	35.7	38.9	18.5	15.9
LnGrp LOS	D	C	C	D	C	C	D		D	D	B	B
Approach Vol, veh/h		314			692			653			393	
Approach Delay, s/veh		28.1			30.2			36.2			25.1	
Approach LOS		C			C			D			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	31.2	10.4	23.2	10.4	32.4	9.4	24.2				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	7.3	23.8	6.3	6.3	6.2	9.3	5.2	14.1				
Green Ext Time (p_c), s	0.2	2.4	0.2	1.8	0.2	2.0	0.1	4.4				
Intersection Summary												
HCM 2010 Ctrl Delay			30.8									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	366	10	40	504	10	30	0	70	10	0	10
Future Vol, veh/h	0	366	10	40	504	10	30	0	70	10	0	10
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	441	12	48	607	11	36	0	84	11	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	618	0	0	457	0	0	856	1165	231	930	1166	314
Stage 1	-	-	-	-	-	-	451	451	-	709	709	-
Stage 2	-	-	-	-	-	-	405	714	-	221	457	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	958	-	-	1107	-	-	253	193	774	222	193	682
Stage 1	-	-	-	-	-	-	560	569	-	391	435	-
Stage 2	-	-	-	-	-	-	596	433	-	761	566	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	958	-	-	1103	-	-	234	179	771	188	179	679
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	179	-	188	179	-
Stage 1	-	-	-	-	-	-	558	567	-	391	406	-
Stage 2	-	-	-	-	-	-	545	404	-	678	564	-



















Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.8			15.7			18.2		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	457	958	-	-	1103	-	-	294
HCM Lane V/C Ratio	0.264	-	-	-	0.044	-	-	0.074
HCM Control Delay (s)	15.7	0	-	-	8.4	0.2	-	18.2
HCM Lane LOS	C	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0.2

HCM 2010 Signalized Intersection Summary

8: San Jose Dr & Buchanan Rd

Cumulative (Year 2040) Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	356	20	10	444	141	40	80	30	81	30	40
Future Volume (veh/h)	30	356	20	10	444	141	40	80	30	81	30	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	35	419	24	12	522	166	47	94	35	95	35	47
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	130	1389	79	108	1042	330	179	164	54	276	64	69
Arrive On Green	0.07	0.40	0.40	0.06	0.39	0.39	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1792	3430	196	1792	2654	840	356	1052	349	813	407	441
Grp Volume(v), veh/h	35	218	225	12	351	337	176	0	0	177	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1838	1792	1787	1707	1757	0	0	1662	0	0
Q Serve(g_s), s	0.7	3.1	3.1	0.2	5.5	5.5	0.0	0.0	0.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	0.7	3.1	3.1	0.2	5.5	5.5	3.3	0.0	0.0	3.4	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.49	0.27		0.20	0.54		0.27
Lane Grp Cap(c), veh/h	130	724	744	108	702	670	397	0	0	409	0	0
V/C Ratio(X)	0.27	0.30	0.30	0.11	0.50	0.50	0.44	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	969	1934	1989	969	1934	1847	1029	0	0	963	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	7.5	7.5	16.4	8.5	8.5	14.6	0.0	0.0	14.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.3	0.2	0.8	0.8	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.5	1.6	0.1	2.8	2.7	1.7	0.0	0.0	1.7	0.0	0.0
LnGrp Delay(d),s/veh	16.6	7.8	7.8	16.6	9.3	9.3	14.9	0.0	0.0	14.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		478			700			176			177	
Approach Delay, s/veh		8.4			9.4			14.9			14.9	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	21.0		9.8	6.7	20.5		9.8				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	5.1		5.4	2.7	7.5		5.3				
Green Ext Time (p_c), s	0.0	4.0		0.6	0.0	6.8		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			10.4									
HCM 2010 LOS			B									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

9: Auto Center Dr & Century Blvd/Mahogany Way

Cumulative (Year 2040) Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗	↘	↔	↖	↗	↔	↖	↗	↔	↖	↘
Traffic Volume (veh/h)	100	30	123	210	50	60	294	806	220	50	736	130
Future Volume (veh/h)	100	30	123	210	50	60	294	806	220	50	736	130
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	106	54	47	223	53	64	313	857	0	53	783	138
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	215	113	93	345	74	89	1420	3184	0	68	1094	191
Arrive On Green	0.06	0.06	0.06	0.10	0.10	0.10	0.84	1.00	0.00	0.04	0.26	0.26
Sat Flow, veh/h	3480	1827	1499	3480	746	900	3375	5152	0	1740	4262	745
Grp Volume(v), veh/h	106	54	47	223	0	117	313	857	0	53	609	312
Grp Sat Flow(s),veh/h/ln	1740	1827	1499	1740	0	1646	1688	1663	0	1740	1663	1681
Q Serve(g_s), s	3.5	3.4	3.6	7.4	0.0	8.3	2.2	0.0	0.0	3.6	20.0	20.3
Cycle Q Clear(g_c), s	3.5	3.4	3.6	7.4	0.0	8.3	2.2	0.0	0.0	3.6	20.0	20.3
Prop In Lane	1.00		1.00	1.00		0.55	1.00		0.00	1.00		0.44
Lane Grp Cap(c), veh/h	215	113	93	345	0	163	1420	3184	0	68	853	432
V/C Ratio(X)	0.49	0.48	0.51	0.65	0.00	0.72	0.22	0.27	0.00	0.78	0.71	0.72
Avail Cap(c_a), veh/h	783	411	337	1009	0	477	1420	3184	0	200	853	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.91	0.91	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	54.4	54.5	52.0	0.0	52.4	5.7	0.0	0.0	57.2	40.6	40.7
Incr Delay (d2), s/veh	0.6	1.2	1.6	0.8	0.0	2.2	0.0	0.2	0.0	7.1	5.1	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.8	1.5	3.6	0.0	3.9	1.0	0.1	0.0	1.9	9.7	10.6
LnGrp Delay(d),s/veh	55.1	55.6	56.1	52.8	0.0	54.6	5.7	0.2	0.0	64.2	45.7	50.7
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		207			340			1170			974	
Approach Delay, s/veh		55.5			53.4			1.7			48.3	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	56.5	35.8		11.6	9.7	82.6		16.1				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+14), s	14.2	22.3		5.6	5.6	2.0		10.3				
Green Ext Time (p_c), s	0.3	2.8		0.4	0.0	12.5		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			29.2									
HCM 2010 LOS			C									
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp

Cumulative (Year 2040) Plus Project PM

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	560	937	539	1260	1332	470		
Future Volume (veh/h)	560	937	539	1260	1332	470		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	589	714	567	1326	1402	196		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	1069	492	619	3180	2088	623		
Arrive On Green	0.31	0.31	0.36	1.00	0.41	0.41		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1533		
Grp Volume(v), veh/h	589	714	567	1326	1402	196		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1533		
Q Serve(g_s), s	18.4	40.0	20.3	0.0	29.0	11.3		
Cycle Q Clear(g_c), s	18.4	40.0	20.3	0.0	29.0	11.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1069	492	619	3180	2088	623		
V/C Ratio(X)	0.55	1.45	0.92	0.42	0.67	0.31		
Avail Cap(c_a), veh/h	1069	492	722	3180	2088	623		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.22	0.22	0.83	0.83		
Uniform Delay (d), s/veh	37.5	45.0	40.9	0.0	31.5	26.2		
Incr Delay (d2), s/veh	0.5	214.2	4.1	0.1	1.4	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	59.2	10.0	0.0	13.9	5.0		
LnGrp Delay(d),s/veh	38.0	259.2	45.0	0.1	32.9	27.3		
LnGrp LOS	D	F	D	A	C	C		
Approach Vol, veh/h	1303			1893	1598			
Approach Delay, s/veh	159.2			13.6	32.2			
Approach LOS	F			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	85.5		44.5		27.6	57.9		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		42.0		22.3	31.0		
Green Ext Time (p_c), s	21.6		0.0		0.9	7.2		
Intersection Summary								
HCM 2010 Ctrl Delay			59.4					
HCM 2010 LOS			E					
Notes								

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Cumulative (Year 2040) Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	550	0	807	0	0	0	0	1249	944	820	1449	0
Future Volume (veh/h)	550	0	807	0	0	0	0	1249	944	820	1449	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	0	1881				0	1881	1881	1881	1881	0
Adj Flow Rate, veh/h	573	0	767				0	1553	490	854	1509	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.96	0.96	0.96				0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1				0	1	1	1	1	0
Cap, veh/h	829	0	671				0	2032	561	989	3516	0
Arrive On Green	0.24	0.00	0.24				0.00	0.36	0.36	0.57	1.00	0.00
Sat Flow, veh/h	3476	0	2814				0	5644	1557	3476	5305	0
Grp Volume(v), veh/h	573	0	767				0	1553	490	854	1509	0
Grp Sat Flow(s),veh/h/ln	1738	0	1407				0	1881	1557	1738	1712	0
Q Serve(g_s), s	19.5	0.0	31.0				0.0	31.6	38.2	27.1	0.0	0.0
Cycle Q Clear(g_c), s	19.5	0.0	31.0				0.0	31.6	38.2	27.1	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	829	0	671				0	2032	561	989	3516	0
V/C Ratio(X)	0.69	0.00	1.14				0.00	0.76	0.87	0.86	0.43	0.00
Avail Cap(c_a), veh/h	829	0	671				0	2032	561	989	3516	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.38	0.38	0.23	0.23	0.00
Uniform Delay (d), s/veh	45.1	0.0	49.5				0.0	36.7	38.8	25.9	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	81.3				0.0	1.1	7.5	2.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	19.6				0.0	16.6	17.5	13.2	0.0	0.0
LnGrp Delay(d),s/veh	47.2	0.0	130.8				0.0	37.8	46.3	28.3	0.1	0.0
LnGrp LOS	D		F					D	D	C	A	
Approach Vol, veh/h		1340						2043			2363	
Approach Delay, s/veh		95.0						39.8			10.3	
Approach LOS		F						D			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	42.2	52.1		35.7		94.3						
Change Period (Y+Rc), s	5.2	5.3		* 4.7		5.3						
Max Green Setting (Gmax), s	37	46.8		* 31		89.0						
Max Q Clear Time (g_c+Qr), s	49.1	40.2		33.0		2.0						
Green Ext Time (p_c), s	0.1	1.8		0.0		2.5						
Intersection Summary												
HCM 2010 Ctrl Delay			40.6									
HCM 2010 LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Somersville Rd & Delta Fair Blvd

Cumulative (Year 2040) Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖	↖	↖	↖↗↘		↖↗	↖↗	↖
Traffic Volume (veh/h)	590	301	90	81	208	523	120	1150	40	626	1220	380
Future Volume (veh/h)	590	301	90	81	208	523	120	1150	40	626	1220	380
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	664	232	84	84	214	266	124	1186	41	645	1258	239
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	715	261	95	341	358	301	136	1381	48	626	1327	579
Arrive On Green	0.20	0.20	0.20	0.19	0.19	0.19	0.08	0.27	0.27	0.18	0.37	0.37
Sat Flow, veh/h	3583	1309	474	1792	1881	1579	1792	5092	176	3476	3574	1559
Grp Volume(v), veh/h	664	0	316	84	214	266	124	797	430	645	1258	239
Grp Sat Flow(s),veh/h/ln	1792	0	1783	1792	1881	1579	1792	1712	1844	1738	1787	1559
Q Serve(g_s), s	27.3	0.0	25.9	6.0	15.6	24.6	10.3	33.2	33.2	27.0	51.2	17.1
Cycle Q Clear(g_c), s	27.3	0.0	25.9	6.0	15.6	24.6	10.3	33.2	33.2	27.0	51.2	17.1
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	715	0	356	341	358	301	136	929	500	626	1327	579
V/C Ratio(X)	0.93	0.00	0.89	0.25	0.60	0.88	0.91	0.86	0.86	1.03	0.95	0.41
Avail Cap(c_a), veh/h	733	0	365	406	426	358	136	929	500	626	1327	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.60	0.60	0.60	0.67	0.67	0.67
Uniform Delay (d), s/veh	59.0	0.0	58.4	51.6	55.5	59.1	68.8	51.9	51.9	61.5	45.7	35.0
Incr Delay (d2), s/veh	17.7	0.0	21.8	0.1	0.6	18.0	35.6	6.4	11.1	37.8	11.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	0.0	14.9	3.0	8.1	12.2	6.4	16.5	18.5	16.2	27.2	7.6
LnGrp Delay(d),s/veh	76.7	0.0	80.2	51.7	56.1	77.1	104.4	58.3	63.0	99.3	57.0	36.5
LnGrp LOS	E		F	D	E	E	F	E	E	F	E	D
Approach Vol, veh/h		980			564			1351			2142	
Approach Delay, s/veh		77.8			65.4			64.0			67.4	
Approach LOS		E			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.0	45.3		34.4	16.0	60.3		33.1				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	40.7	40.7		30.7	11.4	55.7		34.0				
Max Q Clear Time (g_c+Q), s	35.2	35.2		29.3	12.3	53.2		26.6				
Green Ext Time (p_c), s	0.0	4.9		0.6	0.0	2.4		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay	68.3											
HCM 2010 LOS	E											
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	440	510	86	228	90	320	600	78	130	680	501
Future Volume (veh/h)	440	440	510	86	228	90	320	600	78	130	680	501
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	458	458	0	90	238	0	333	625	81	135	708	347
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	463	1257	563	118	300	255	357	1123	145	163	863	385
Arrive On Green	0.26	0.35	0.00	0.07	0.16	0.00	0.20	0.35	0.35	0.09	0.24	0.24
Sat Flow, veh/h	1810	3610	1615	1810	1900	1615	1810	3210	415	1810	3610	1612
Grp Volume(v), veh/h	458	458	0	90	238	0	333	351	355	135	708	347
Grp Sat Flow(s),veh/h/ln	1810	1805	1615	1810	1900	1615	1810	1805	1820	1810	1805	1612
Q Serve(g_s), s	31.6	11.8	0.0	6.1	15.1	0.0	22.7	19.6	19.7	9.2	23.2	26.1
Cycle Q Clear(g_c), s	31.6	11.8	0.0	6.1	15.1	0.0	22.7	19.6	19.7	9.2	23.2	26.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	463	1257	563	118	300	255	357	632	637	163	863	385
V/C Ratio(X)	0.99	0.36	0.00	0.76	0.79	0.00	0.93	0.56	0.56	0.83	0.82	0.90
Avail Cap(c_a), veh/h	463	1434	641	159	440	374	357	632	637	260	889	397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	30.4	0.0	57.5	50.7	0.0	49.4	32.8	32.8	55.9	45.1	46.2
Incr Delay (d2), s/veh	39.0	0.8	0.0	12.0	19.2	0.0	31.2	0.9	0.9	9.0	6.3	23.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.8	6.1	0.0	3.5	9.5	0.0	14.4	9.9	10.0	5.0	12.4	14.1
LnGrp Delay(d),s/veh	85.4	31.2	0.0	69.5	69.9	0.0	80.6	33.7	33.8	64.9	51.4	69.2
LnGrp LOS	F	C		E	E		F	C	C	E	D	E
Approach Vol, veh/h		916			328			1039			1190	
Approach Delay, s/veh		58.3			69.8			48.8			58.1	
Approach LOS		E			E			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.3	48.8	12.2	48.9	29.2	34.9	36.0	25.0				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	38.0	38.0	11.0	49.7	24.7	30.8	32.0	* 29				
Max Q Clear Time (g_c+I1), s	11.2	21.7	8.1	13.8	24.7	28.1	33.6	17.1				
Green Ext Time (p_c), s	0.1	3.2	0.0	8.4	0.0	1.8	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay			56.5									
HCM 2010 LOS			E									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	205	722	535	74	32	207
Future Vol, veh/h	205	722	535	74	32	207
Conflicting Peds, #/hr	1	0	0	1	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	211	744	552	76	33	213






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	629	0	-	0	1389 315
Stage 1	-	-	-	-	591 -
Stage 2	-	-	-	-	798 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	956	-	-	-	135 684
Stage 1	-	-	-	-	519 -
Stage 2	-	-	-	-	406 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	955	-	-	-	105 683
Mov Cap-2 Maneuver	-	-	-	-	233 -
Stage 1	-	-	-	-	404 -
Stage 2	-	-	-	-	406 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	955	-	-	-	233	683
HCM Lane V/C Ratio	0.221	-	-	-	0.142	0.312
HCM Control Delay (s)	9.8	-	-	-	23	12.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.5	1.3

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Cumulative (Year 2040) Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	380	140	61	223	143	90	320	60	244	488	52
Future Volume (veh/h)	108	380	140	61	223	143	90	320	60	244	488	52
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	114	400	147	64	235	151	95	337	63	257	514	35
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	166	604	219	115	439	271	147	419	78	310	684	571
Arrive On Green	0.09	0.24	0.24	0.06	0.21	0.21	0.08	0.27	0.27	0.17	0.36	0.36
Sat Flow, veh/h	1792	2556	927	1792	2115	1303	1792	1540	288	1792	1881	1570
Grp Volume(v), veh/h	114	278	269	64	197	189	95	0	400	257	514	35
Grp Sat Flow(s),veh/h/ln	1792	1787	1696	1792	1787	1631	1792	0	1828	1792	1881	1570
Q Serve(g_s), s	4.4	10.0	10.2	2.5	7.0	7.4	3.6	0.0	14.5	9.8	17.0	1.0
Cycle Q Clear(g_c), s	4.4	10.0	10.2	2.5	7.0	7.4	3.6	0.0	14.5	9.8	17.0	1.0
Prop In Lane	1.00		0.55	1.00		0.80	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	166	422	401	115	371	339	147	0	498	310	684	571
V/C Ratio(X)	0.69	0.66	0.67	0.56	0.53	0.56	0.65	0.00	0.80	0.83	0.75	0.06
Avail Cap(c_a), veh/h	505	756	718	505	756	690	505	0	773	505	796	664
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	24.5	24.6	32.2	25.0	25.2	31.6	0.0	24.0	28.3	19.8	14.7
Incr Delay (d2), s/veh	4.9	2.5	2.8	4.1	1.7	2.0	4.7	0.0	4.7	5.9	3.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.2	5.1	1.3	3.6	3.5	2.0	0.0	7.9	5.4	9.5	0.5
LnGrp Delay(d),s/veh	36.1	27.0	27.3	36.3	26.7	27.2	36.3	0.0	28.7	34.2	23.7	14.8
LnGrp LOS	D	C	C	D	C	C	D		C	C	C	B
Approach Vol, veh/h		661			450			495			806	
Approach Delay, s/veh		28.7			28.3			30.1			26.7	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	24.3	8.6	21.8	9.8	30.8	10.6	19.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	11.8	16.5	4.5	12.2	5.6	19.0	6.4	9.4				
Green Ext Time (p_c), s	0.5	2.8	0.1	4.2	0.2	3.5	0.2	3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			28.2									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	10	685	30	30	377	0	20	0	40	0	0	10
Future Vol, veh/h	10	685	30	30	377	0	20	0	40	0	0	10
Conflicting Peds, #/hr	0	0	1	1	0	0	2	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	97	97	97	97	92	97	92	97	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	11	706	31	31	389	0	21	0	41	0	0	11



















Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	389	0	0	738	0	0	1004	1196	370	826	1211	197
Stage 1	-	-	-	-	-	-	745	745	-	451	451	-
Stage 2	-	-	-	-	-	-	259	451	-	375	760	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1166	-	-	871	-	-	197	185	630	264	181	811
Stage 1	-	-	-	-	-	-	374	419	-	557	569	-
Stage 2	-	-	-	-	-	-	726	569	-	618	413	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1166	-	-	870	-	-	185	174	629	235	170	809
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	174	-	235	170	-
Stage 1	-	-	-	-	-	-	368	412	-	548	543	-
Stage 2	-	-	-	-	-	-	683	543	-	568	406	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.2		0.9		17.5		9.5	
HCM LOS					C		A	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	1166	-	-	870	-	-	809
HCM Lane V/C Ratio	0.177	0.009	-	-	0.036	-	-	0.013
HCM Control Delay (s)	17.5	8.1	0.1	-	9.3	0.2	-	9.5
HCM Lane LOS	C	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Cumulative (Year 2040) Plus Project PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	575	30	10	327	101	20	30	20	131	30	20
Future Volume (veh/h)	20	575	30	10	327	101	20	30	20	131	30	20
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	22	618	32	11	352	109	22	32	22	141	32	22
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	122	1276	66	110	979	299	183	167	89	362	51	30
Arrive On Green	0.07	0.37	0.37	0.06	0.36	0.36	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1792	3453	179	1792	2698	824	298	944	506	1065	288	172
Grp Volume(v), veh/h	22	319	331	11	231	230	76	0	0	195	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1845	1792	1787	1735	1749	0	0	1525	0	0
Q Serve(g_s), s	0.4	4.9	4.9	0.2	3.4	3.5	0.0	0.0	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	0.4	4.9	4.9	0.2	3.4	3.5	1.3	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.47	0.29		0.29	0.72		0.11
Lane Grp Cap(c), veh/h	122	660	681	110	649	630	439	0	0	443	0	0
V/C Ratio(X)	0.18	0.48	0.48	0.10	0.36	0.36	0.17	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1004	2004	2069	1004	2004	1945	1060	0	0	1000	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.7	8.6	8.6	15.8	8.3	8.3	12.6	0.0	0.0	13.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.8	0.1	0.5	0.5	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.5	2.6	0.1	1.8	1.7	0.6	0.0	0.0	1.8	0.0	0.0
LnGrp Delay(d),s/veh	16.0	9.4	9.4	16.0	8.8	8.8	12.7	0.0	0.0	14.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		672			472			76			195	
Approach Delay, s/veh		9.6			9.0			12.7			14.0	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	19.2		10.3	6.4	19.0		10.3				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	6.9		6.2	2.4	5.5		3.3				
Green Ext Time (p_c), s	0.0	6.2		0.6	0.0	4.2		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			10.2									
HCM 2010 LOS			B									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Cumulative (Year 2040) Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↔	↔		↔	↑↑		↔	↑↑	
Traffic Volume (veh/h)	260	90	455	270	80	60	564	956	310	50	1087	130
Future Volume (veh/h)	260	90	455	270	80	60	564	956	310	50	1087	130
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	271	223	180	281	83	62	588	996	0	52	1132	135
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	537	282	238	414	115	86	1152	2420	0	206	1182	141
Arrive On Green	0.15	0.15	0.15	0.11	0.11	0.11	0.66	0.93	0.00	0.11	0.25	0.25
Sat Flow, veh/h	3619	1900	1602	3619	1006	752	3510	5358	0	1810	4686	558
Grp Volume(v), veh/h	271	223	180	281	0	145	588	996	0	52	835	432
Grp Sat Flow(s),veh/h/ln	1810	1900	1602	1810	0	1758	1755	1729	0	1810	1729	1787
Q Serve(g_s), s	9.0	14.7	14.0	9.7	0.0	10.4	11.3	2.7	0.0	3.4	30.9	31.0
Cycle Q Clear(g_c), s	9.0	14.7	14.0	9.7	0.0	10.4	11.3	2.7	0.0	3.4	30.9	31.0
Prop In Lane	1.00		1.00	1.00		0.43	1.00		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	537	282	238	414	0	201	1152	2420	0	206	872	451
V/C Ratio(X)	0.50	0.79	0.76	0.68	0.00	0.72	0.51	0.41	0.00	0.25	0.96	0.96
Avail Cap(c_a), veh/h	974	512	431	969	0	471	1152	2420	0	206	872	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.89	0.89	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	53.4	53.1	55.3	0.0	55.6	17.0	2.4	0.0	52.6	47.9	47.9
Incr Delay (d2), s/veh	0.3	1.9	1.9	0.7	0.0	1.8	0.1	0.5	0.0	2.9	21.7	33.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	7.9	6.3	4.9	0.0	5.1	5.4	1.2	0.0	1.9	17.4	19.4
LnGrp Delay(d),s/veh	51.2	55.3	55.0	56.0	0.0	57.4	17.1	2.9	0.0	55.5	69.6	81.1
LnGrp LOS	D	E	D	E		E	B	A		E	E	F
Approach Vol, veh/h		674			426			1584			1319	
Approach Delay, s/veh		53.6			56.5			8.2			72.8	
Approach LOS		D			E			A			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	48.6	38.8		23.5	20.8	66.6		19.1				
Change Period (Y+Rc), s	6.0	* 6		* 4.2	6.0	6.0		4.2				
Max Green Setting (Gmax), s	33.0	* 33		* 35	14.8	25.0		34.8				
Max Q Clear Time (g_c+1), s	13.3	33.0		16.7	5.4	4.7		12.4				
Green Ext Time (p_c), s	0.0	0.0		1.5	0.2	13.0		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay	42.2											
HCM 2010 LOS	D											
Notes												



















User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp Cumulative (Year 2040) Plus Project AM Mit EB Build

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	480	658	474	830	819	240		
Future Volume (veh/h)	480	658	474	830	819	240		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845		
Adj Flow Rate, veh/h	511	329	504	883	871	104		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	3	3	3	3	3	3		
Cap, veh/h	600	694	909	3751	2219	675		
Arrive On Green	0.18	0.18	0.53	1.00	0.44	0.44		
Sat Flow, veh/h	3408	1568	3408	5202	5202	1532		
Grp Volume(v), veh/h	511	329	504	883	871	104		
Grp Sat Flow(s),veh/h/ln	1704	1568	1704	1679	1679	1532		
Q Serve(g_s), s	17.4	17.8	11.8	0.0	14.0	4.9		
Cycle Q Clear(g_c), s	17.4	17.8	11.8	0.0	14.0	4.9		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	600	694	909	3751	2219	675		
V/C Ratio(X)	0.85	0.47	0.55	0.24	0.39	0.15		
Avail Cap(c_a), veh/h	710	745	909	3751	2219	675		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.79	0.79	0.94	0.94		
Uniform Delay (d), s/veh	47.9	23.6	23.3	0.0	22.7	20.1		
Incr Delay (d2), s/veh	8.2	0.4	1.9	0.1	0.5	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	17.1	5.7	0.0	6.6	2.2		
LnGrp Delay(d),s/veh	56.1	24.0	25.2	0.1	23.2	20.6		
LnGrp LOS	E	C	C	A	C	C		
Approach Vol, veh/h	840			1387	975			
Approach Delay, s/veh	43.5			9.2	22.9			
Approach LOS	D			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	94.4		25.6		36.5	57.9		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	85.5		25.0		32.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		19.8		13.8	16.0		
Green Ext Time (p_c), s	11.3		1.4		1.5	4.6		
Intersection Summary								
HCM 2010 Ctrl Delay			22.4					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary

1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp Cumulative (Year 2040) Plus Project AM Mit EB Build

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary

3: Somersville Rd & Delta Fair Blvd

Cumulative (Year 2040) Plus Project AM Mit EB Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔		↔	↑	↔	↔↔↔	↔↔↔		↔↔	↑↑	↔
Traffic Volume (veh/h)	320	155	60	61	368	520	140	950	20	397	710	480
Future Volume (veh/h)	320	155	60	61	368	520	140	950	20	397	710	480
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	356	172	67	68	409	367	156	1056	22	441	789	187
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	410	160	106	479	404	171	1161	24	465	920	409
Arrive On Green	0.12	0.32	0.32	0.06	0.26	0.26	0.10	0.23	0.23	0.23	0.43	0.43
Sat Flow, veh/h	3442	1275	497	1774	1863	1569	1774	5124	107	3442	3539	1572
Grp Volume(v), veh/h	356	0	239	68	409	367	156	698	380	441	789	187
Grp Sat Flow(s),veh/h/ln	1721	0	1772	1774	1863	1569	1774	1695	1841	1721	1770	1572
Q Serve(g_s), s	12.1	0.0	12.7	4.5	25.1	27.2	10.5	24.1	24.1	15.2	24.1	5.9
Cycle Q Clear(g_c), s	12.1	0.0	12.7	4.5	25.1	27.2	10.5	24.1	24.1	15.2	24.1	5.9
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	427	0	570	106	479	404	171	768	417	465	920	409
V/C Ratio(X)	0.83	0.00	0.42	0.64	0.85	0.91	0.91	0.91	0.91	0.95	0.86	0.46
Avail Cap(c_a), veh/h	717	0	570	503	528	444	171	768	417	465	920	409
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.87	0.87	0.87
Uniform Delay (d), s/veh	51.4	0.0	31.9	55.2	42.4	43.2	53.7	45.2	45.2	46.1	31.9	9.4
Incr Delay (d2), s/veh	3.3	0.0	0.4	2.4	11.0	20.3	34.5	12.9	20.8	26.5	9.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	6.3	2.3	14.4	14.0	6.8	12.6	14.6	8.9	12.8	2.8
LnGrp Delay(d),s/veh	54.6	0.0	32.3	57.6	53.4	63.5	88.1	58.0	66.0	72.6	41.0	12.6
LnGrp LOS	D		C	E	D	E	F	E	E	E	D	B
Approach Vol, veh/h		595			844			1234			1417	
Approach Delay, s/veh		45.7			58.1			64.3			47.1	
Approach LOS		D			E			E			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.2	31.8	11.7	43.1	16.2	35.8	19.4	35.4				
Change Period (Y+Rc), s	4.0	4.6	4.5	4.5	4.6	4.6	4.5	4.5				
Max Green Setting (Gmax), s	16.2	27.2	34.0	25.0	11.6	31.2	25.0	34.0				
Max Q Clear Time (g_c+11), s	11.2	26.1	6.5	14.7	12.5	26.1	14.1	29.2				
Green Ext Time (p_c), s	0.0	1.0	0.1	0.8	0.0	4.1	0.7	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			54.3									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) Plus Project AM Mit EB Build


























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	191	160	76	377	120	400	620	68	100	380	381
Future Volume (veh/h)	410	191	160	76	377	120	400	620	68	100	380	381
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	466	217	0	86	428	0	455	705	77	114	432	210
Adj No. of Lanes	2	1	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	627	329	280	466	490	416	313	1136	124	138	891	399
Arrive On Green	0.18	0.18	0.00	0.26	0.26	0.00	0.17	0.35	0.35	0.08	0.25	0.25
Sat Flow, veh/h	3583	1881	1599	1792	1881	1599	1792	3246	354	1792	3574	1599
Grp Volume(v), veh/h	466	217	0	86	428	0	455	388	394	114	432	210
Grp Sat Flow(s),veh/h/ln	1792	1881	1599	1792	1881	1599	1792	1787	1813	1792	1787	1599
Q Serve(g_s), s	17.3	15.1	0.0	5.2	30.6	0.0	24.5	25.3	25.3	8.8	14.5	15.9
Cycle Q Clear(g_c), s	17.3	15.1	0.0	5.2	30.6	0.0	24.5	25.3	25.3	8.8	14.5	15.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	627	329	280	466	490	416	313	626	635	138	891	399
V/C Ratio(X)	0.74	0.66	0.00	0.18	0.87	0.00	1.46	0.62	0.62	0.82	0.48	0.53
Avail Cap(c_a), veh/h	758	398	338	523	549	467	313	626	635	166	891	399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	54.0	0.0	40.4	49.7	0.0	58.0	37.9	37.9	63.8	45.0	45.6
Incr Delay (d2), s/veh	7.8	9.9	0.0	0.9	19.1	0.0	222.0	4.6	4.5	22.5	1.9	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	8.7	0.0	2.7	18.5	0.0	31.3	13.3	13.5	5.2	7.4	7.6
LnGrp Delay(d),s/veh	62.7	63.9	0.0	41.2	68.9	0.0	279.9	42.4	42.4	86.4	46.9	50.5
LnGrp LOS	E	E		D	E		F	D	D	F	D	D
Approach Vol, veh/h		683			514			1237			756	
Approach Delay, s/veh		63.1			64.2			129.8			53.8	
Approach LOS		E			E			F			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	54.2		29.9	29.0	40.0		41.5				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	47.0			29.7	24.5	35.0		41.0				
Max Q Clear Time (g_c+110), s	27.3			19.3	26.5	17.9		32.6				
Green Ext Time (p_c), s	0.0	3.8		5.3	0.0	4.5		3.9				
Intersection Summary												
HCM 2010 Ctrl Delay			86.9									
HCM 2010 LOS			F									
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

4: Somersville Rd & Buchanan Rd



















Cumulative (Year 2040) Plus Project AM Mit Full Build

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	191	160	76	377	120	400	620	68	100	380	381
Future Volume (veh/h)	410	191	160	76	377	120	400	620	68	100	380	381
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	466	217	0	86	428	0	455	705	77	114	432	210
Adj No. of Lanes	2	1	1	1	1	1	2	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	629	330	281	476	500	425	521	1099	120	139	940	420
Arrive On Green	0.18	0.18	0.00	0.27	0.27	0.00	0.15	0.34	0.34	0.08	0.26	0.26
Sat Flow, veh/h	3583	1881	1599	1792	1881	1599	3476	3246	354	1792	3574	1599
Grp Volume(v), veh/h	466	217	0	86	428	0	455	388	394	114	432	210
Grp Sat Flow(s),veh/h/ln	1792	1881	1599	1792	1881	1599	1738	1787	1813	1792	1787	1599
Q Serve(g_s), s	16.7	14.6	0.0	5.0	29.4	0.0	17.4	24.9	24.9	8.5	13.8	15.1
Cycle Q Clear(g_c), s	16.7	14.6	0.0	5.0	29.4	0.0	17.4	24.9	24.9	8.5	13.8	15.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	629	330	281	476	500	425	521	605	614	139	940	420
V/C Ratio(X)	0.74	0.66	0.00	0.18	0.86	0.00	0.87	0.64	0.64	0.82	0.46	0.50
Avail Cap(c_a), veh/h	757	398	338	554	582	495	627	605	614	185	940	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	52.2	0.0	38.4	47.4	0.0	56.5	37.9	37.9	61.7	42.0	42.5
Incr Delay (d2), s/veh	7.7	9.8	0.0	0.8	16.9	0.0	11.7	5.1	5.1	17.1	1.6	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	8.5	0.0	2.6	17.6	0.0	9.2	13.1	13.3	4.9	7.0	7.2
LnGrp Delay(d),s/veh	60.7	62.0	0.0	39.3	64.3	0.0	68.2	43.1	43.0	78.8	43.6	46.7
LnGrp LOS	E	E		D	E		E	D	D	E	D	D
Approach Vol, veh/h		683			514			1237			756	
Approach Delay, s/veh		61.1			60.1			52.3			49.7	
Approach LOS		E			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6	51.0		29.1	24.9	40.7		41.1				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	14.0	46.0		28.7	24.5	35.0		42.0				
Max Q Clear Time (g_c+I1), s	10.5	26.9		18.7	19.4	17.1		31.4				
Green Ext Time (p_c), s	0.1	3.8		5.1	1.0	4.6		4.7				
Intersection Summary												
HCM 2010 Ctrl Delay			54.8									
HCM 2010 LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp Cumulative (Year 2040) Plus Project PM Mit EB Build

								
Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	 		 	  	  			
Traffic Volume (veh/h)	560	937	539	1260	1332	470		
Future Volume (veh/h)	560	937	539	1260	1332	470		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.96		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881		
Adj Flow Rate, veh/h	589	714	567	1326	1402	196		
Adj No. of Lanes	2	1	2	3	3	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	1	1	1	1	1	1		
Cap, veh/h	1069	777	619	3180	2088	623		
Arrive On Green	0.31	0.31	0.36	1.00	0.41	0.41		
Sat Flow, veh/h	3476	1599	3476	5305	5305	1533		
Grp Volume(v), veh/h	589	714	567	1326	1402	196		
Grp Sat Flow(s),veh/h/ln	1738	1599	1738	1712	1712	1533		
Q Serve(g_s), s	18.4	40.0	20.3	0.0	29.0	11.3		
Cycle Q Clear(g_c), s	18.4	40.0	20.3	0.0	29.0	11.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	1069	777	619	3180	2088	623		
V/C Ratio(X)	0.55	0.92	0.92	0.42	0.67	0.31		
Avail Cap(c_a), veh/h	1069	777	722	3180	2088	623		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.22	0.22	0.83	0.83		
Uniform Delay (d), s/veh	37.5	31.1	40.9	0.0	31.5	26.2		
Incr Delay (d2), s/veh	0.5	15.9	4.1	0.1	1.4	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	42.3	10.0	0.0	13.9	5.0		
LnGrp Delay(d),s/veh	38.0	46.9	45.0	0.1	32.9	27.3		
LnGrp LOS	D	D	D	A	C	C		
Approach Vol, veh/h	1303			1893	1598			
Approach Delay, s/veh	42.9			13.6	32.2			
Approach LOS	D			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	2		4		5	6		
Phs Duration (G+Y+Rc), s	85.5		44.5		27.6	57.9		
Change Period (Y+Rc), s	5.0		4.5		4.5	5.0		
Max Green Setting (Gmax), s	80.5		40.0		27.0	49.0		
Max Q Clear Time (g_c+I1), s	2.0		42.0		22.3	31.0		
Green Ext Time (p_c), s	21.6		0.0		0.9	7.2		
Intersection Summary								
HCM 2010 Ctrl Delay			27.8					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary

1: Somersville Rd/Auto Center Dr & SR 4 WB Off-Ramp Cumulative (Year 2040) Plus Project PM Mit EB Build

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Cumulative (Year 2040) Plus Project PM Mit EB Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↔		↔	↑	↔	↔	↑↑↑		↔↔	↑↑	↔
Traffic Volume (veh/h)	590	301	90	81	208	523	120	1150	40	626	1220	380
Future Volume (veh/h)	590	301	90	81	208	523	120	1150	40	626	1220	380
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	608	310	84	84	214	266	124	1186	41	645	1258	239
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	657	455	123	105	357	300	136	1289	45	689	1327	579
Arrive On Green	0.19	0.32	0.32	0.06	0.19	0.19	0.08	0.25	0.25	0.20	0.37	0.37
Sat Flow, veh/h	3476	1419	385	1792	1881	1579	1792	5091	176	3476	3574	1559
Grp Volume(v), veh/h	608	0	394	84	214	266	124	797	430	645	1258	239
Grp Sat Flow(s),veh/h/ln	1738	0	1804	1792	1881	1579	1792	1712	1843	1738	1787	1559
Q Serve(g_s), s	25.8	0.0	28.5	6.9	15.6	24.6	10.3	34.0	34.0	27.4	51.2	8.9
Cycle Q Clear(g_c), s	25.8	0.0	28.5	6.9	15.6	24.6	10.3	34.0	34.0	27.4	51.2	8.9
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	657	0	578	105	357	300	136	867	467	689	1327	579
V/C Ratio(X)	0.92	0.00	0.68	0.80	0.60	0.89	0.91	0.92	0.92	0.94	0.95	0.41
Avail Cap(c_a), veh/h	707	0	578	460	429	360	136	867	467	718	1327	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75	0.67	0.67	0.67
Uniform Delay (d), s/veh	59.8	0.0	44.3	69.8	55.5	59.2	68.8	54.5	54.5	59.2	45.7	9.5
Incr Delay (d2), s/veh	17.1	0.0	3.0	5.3	0.6	18.0	41.6	13.1	21.1	14.2	11.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	0.0	14.7	3.6	8.2	12.3	6.7	17.6	20.0	14.5	27.2	4.0
LnGrp Delay(d),s/veh	76.9	0.0	47.3	75.0	56.1	77.2	110.4	67.6	75.6	73.4	57.0	10.9
LnGrp LOS	E		D	E	E	E	F	E	E	E	E	B
Approach Vol, veh/h		1002			564			1351			2142	
Approach Delay, s/veh		65.3			68.9			74.1			56.8	
Approach LOS		E			E			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	33.7	42.6	13.3	52.6	16.0	60.3	32.9	33.0				
Change Period (Y+Rc), s	4.0	4.6	4.5	4.5	4.6	4.6	4.5	4.5				
Max Green Setting (Gmax), s	31.6	36.7	38.5	26.2	11.4	55.7	30.5	34.2				
Max Q Clear Time (g_c+29.4), s	29.4	36.0	8.9	30.5	12.3	53.2	27.8	26.6				
Green Ext Time (p_c), s	0.3	0.6	0.1	0.0	0.0	2.4	0.6	0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			64.4									
HCM 2010 LOS			E									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) Plus Project PM Mit EB Build



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	440	510	86	228	90	320	600	78	130	680	501
Future Volume (veh/h)	440	440	510	86	228	90	320	600	78	130	680	501
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	513	382	0	90	238	0	333	625	81	135	708	347
Adj No. of Lanes	2	1	1	1	1	1	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	816	428	364	295	310	263	363	1175	152	164	910	407
Arrive On Green	0.23	0.23	0.00	0.16	0.16	0.00	0.20	0.37	0.37	0.09	0.25	0.25
Sat Flow, veh/h	3619	1900	1615	1810	1900	1615	1810	3210	415	1810	3610	1613
Grp Volume(v), veh/h	513	382	0	90	238	0	333	351	355	135	708	347
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1810	1900	1615	1810	1805	1820	1810	1805	1613
Q Serve(g_s), s	15.9	24.3	0.0	5.5	14.9	0.0	22.5	19.1	19.1	9.1	22.7	25.5
Cycle Q Clear(g_c), s	15.9	24.3	0.0	5.5	14.9	0.0	22.5	19.1	19.1	9.1	22.7	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	816	428	364	295	310	263	363	661	666	164	910	407
V/C Ratio(X)	0.63	0.89	0.00	0.30	0.77	0.00	0.92	0.53	0.53	0.83	0.78	0.85
Avail Cap(c_a), veh/h	833	438	372	421	442	376	414	661	666	261	985	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	46.8	0.0	45.9	49.9	0.0	48.8	31.1	31.1	55.7	43.4	44.4
Incr Delay (d2), s/veh	3.7	23.4	0.0	2.7	16.6	0.0	24.0	0.7	0.7	8.8	4.1	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	15.5	0.0	2.9	9.3	0.0	13.6	9.6	9.7	5.0	11.8	13.1
LnGrp Delay(d),s/veh	47.2	70.2	0.0	48.6	66.5	0.0	72.8	31.7	31.8	64.5	47.4	59.3
LnGrp LOS	D	E		D	E		E	C	C	E	D	E
Approach Vol, veh/h		895			328			1039			1190	
Approach Delay, s/veh		57.0			61.6			44.9			52.8	
Approach LOS		E			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	50.6		33.4	29.5	36.4		25.3				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	45.0	45.0		28.7	28.5	34.0		29.0				
Max Q Clear Time (g_c+I1), s	21.1	21.1		26.3	24.5	27.5		16.9				
Green Ext Time (p_c), s	0.1	3.5		1.8	0.5	3.9		3.1				
Intersection Summary												
HCM 2010 Ctrl Delay				52.4								
HCM 2010 LOS				D								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

4: Somersville Rd & Buchanan Rd

Cumulative (Year 2040) Plus Project PM Mit Full Build

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	440	510	86	228	90	320	600	78	130	680	501
Future Volume (veh/h)	440	440	510	86	228	90	320	600	78	130	680	501
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	513	382	0	90	238	0	333	625	81	135	708	347
Adj No. of Lanes	2	1	1	1	1	1	2	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	938	492	419	305	321	273	407	994	129	167	1016	454
Arrive On Green	0.26	0.26	0.00	0.17	0.17	0.00	0.12	0.31	0.31	0.09	0.28	0.28
Sat Flow, veh/h	3619	1900	1615	1810	1900	1615	3510	3210	415	1810	3610	1613
Grp Volume(v), veh/h	513	382	0	90	238	0	333	351	355	135	708	347
Grp Sat Flow(s),veh/h/ln	1810	1900	1615	1810	1900	1615	1755	1805	1820	1810	1805	1613
Q Serve(g_s), s	13.9	21.1	0.0	4.9	13.5	0.0	10.5	18.9	19.0	8.3	19.9	22.3
Cycle Q Clear(g_c), s	13.9	21.1	0.0	4.9	13.5	0.0	10.5	18.9	19.0	8.3	19.9	22.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		1.00
Lane Grp Cap(c), veh/h	938	492	419	305	321	273	407	559	564	167	1016	454
V/C Ratio(X)	0.55	0.78	0.00	0.29	0.74	0.00	0.82	0.63	0.63	0.81	0.70	0.76
Avail Cap(c_a), veh/h	1043	548	466	463	486	413	542	653	658	287	1305	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.3	39.0	0.0	41.2	44.8	0.0	49.0	33.5	33.6	50.5	36.4	37.3
Incr Delay (d2), s/veh	2.3	11.4	0.0	2.4	14.4	0.0	7.8	1.2	1.2	6.9	1.5	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	12.7	0.0	2.7	8.4	0.0	5.5	9.5	9.8	4.5	10.1	10.6
LnGrp Delay(d),s/veh	38.6	50.3	0.0	43.7	59.2	0.0	56.7	34.7	34.8	57.4	37.9	42.7
LnGrp LOS	D	D		D	E		E	C	C	E	D	D
Approach Vol, veh/h		895			328			1039			1190	
Approach Delay, s/veh		43.6			54.9			41.8			41.5	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	40.1		34.7	17.7	36.9		24.1				
Change Period (Y+Rc), s	4.0	5.0		5.3	4.5	5.0		5.0				
Max Green Setting (Gmax), s	18.0	41.0		32.7	17.5	41.0		29.0				
Max Q Clear Time (g_c+I1), s	10.3	21.0		23.1	12.5	24.3		15.5				
Green Ext Time (p_c), s	0.1	3.4		6.3	0.7	7.6		3.3				
Intersection Summary												
HCM 2010 Ctrl Delay			43.4									
HCM 2010 LOS			D									
Notes												

User approved volume balancing among the lanes for turning movement.

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 2: Somersville Rd & SR 4 EB Off-Ramp/SR 4 EB On-Ramp

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗		↖↗					↑↑↑	↖	↖↗	↑↑↑	
Traffic Volume (veh/h)	225	0	299	0	0	0	0	654	482	204	807	0
Future Volume (veh/h)	225	0	299	0	0	0	0	654	482	204	807	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00	0.97	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	0	1845				0	1845	1845	1845	1845	0
Adj Flow Rate, veh/h	253	0	48				0	944	291	229	907	0
Adj No. of Lanes	2	0	2				0	3	1	2	3	0
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	0	3				0	3	3	3	3	0
Cap, veh/h	307	0	248				0	3882	1064	279	4163	0
Arrive On Green	0.09	0.00	0.09				0.00	0.70	0.70	0.16	1.00	0.00
Sat Flow, veh/h	3408	0	2760				0	5534	1516	3408	5202	0
Grp Volume(v), veh/h	253	0	48				0	944	291	229	907	0
Grp Sat Flow(s),veh/h/ln1704	0	1380					0	1845	1516	1704	1679	0
Q Serve(g_s), s	8.8	0.0	1.9				0.0	7.4	8.5	7.8	0.0	0.0
Cycle Q Clear(g_c), s	8.8	0.0	1.9				0.0	7.4	8.5	7.8	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	307	0	248				0	3882	1064	279	4163	0
V/C Ratio(X)	0.82	0.00	0.19				0.00	0.24	0.27	0.82	0.22	0.00
Avail Cap(c_a), veh/h	738	0	598				0	3882	1064	767	4163	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(l)	1.00	0.00	1.00				0.00	0.88	0.88	0.86	0.86	0.00
Uniform Delay (d), s/veh	53.7	0.0	50.6				0.0	6.4	6.6	49.3	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.1				0.0	0.1	0.6	2.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln4.2	0.0	0.0	0.7				0.0	3.8	3.7	3.7	0.0	0.0
LnGrp Delay(d),s/veh	55.8	0.0	50.7				0.0	6.6	7.2	51.3	0.1	0.0
LnGrp LOS	E		D					A	A	D	A	
Approach Vol, veh/h		301						1235			1136	
Approach Delay, s/veh		55.0						6.7			10.4	
Approach LOS		D						A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s5.0	89.5			15.5		104.5						
Change Period (Y+Rc), s5.2	5.3			* 4.7		5.3						
Max Green Setting (Gmax), s27	51.8			* 26		84.0						
Max Q Clear Time (g_c+I), s19.8	10.5			10.8		2.0						
Green Ext Time (p_c), s	0.0	1.3		0.0		1.3						
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary
 3: Somersville Rd & Delta Fair Blvd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	106	16	48	214	357	57	478	6	265	446	390
Future Volume (veh/h)	281	106	16	48	214	357	57	478	6	265	446	390
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	312	118	14	53	238	68	63	531	6	294	496	194
Adj No. of Lanes	2	1	0	1	1	1	1	3	0	2	2	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	196	23	292	306	257	81	1083	12	358	929	413
Arrive On Green	0.12	0.12	0.12	0.16	0.16	0.16	0.05	0.21	0.21	0.03	0.09	0.09
Sat Flow, veh/h	3548	1632	194	1774	1863	1560	1774	5182	58	3442	3539	1572
Grp Volume(v), veh/h	312	0	132	53	238	68	63	347	190	294	496	194
Grp Sat Flow(s),veh/h/ln	1774	0	1825	1774	1863	1560	1774	1695	1851	1721	1770	1572
Q Serve(g_s), s	10.2	0.0	8.2	3.1	14.7	4.6	4.2	10.8	10.9	10.2	16.1	14.1
Cycle Q Clear(g_c), s	10.2	0.0	8.2	3.1	14.7	4.6	4.2	10.8	10.9	10.2	16.1	14.1
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	427	0	220	292	306	257	81	708	387	358	929	413
V/C Ratio(X)	0.73	0.00	0.60	0.18	0.78	0.26	0.78	0.49	0.49	0.82	0.53	0.47
Avail Cap(c_a), veh/h	721	0	371	510	536	449	169	708	387	531	929	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	0.96	0.96	0.96
Uniform Delay (d), s/veh	50.9	0.0	50.0	43.2	48.0	43.8	56.7	41.8	41.8	56.8	47.8	46.9
Incr Delay (d2), s/veh	1.8	0.0	2.0	0.1	1.6	0.2	5.2	2.1	3.9	3.8	2.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	0.0	4.3	1.5	7.7	2.0	2.2	5.3	6.0	5.1	8.2	6.6
LnGrp Delay(d),s/veh	52.7	0.0	52.0	43.3	49.6	44.0	61.9	43.9	45.7	60.6	49.9	50.5
LnGrp LOS	D		D	D	D	D	E	D	D	E	D	D
Approach Vol, veh/h		444			359			600			984	
Approach Delay, s/veh		52.5			47.6			46.4			53.2	
Approach LOS		D			D			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.5	29.7		18.9	10.1	36.1		24.2				
Change Period (Y+Rc), s	4.0	4.6		4.5	4.6	4.6		4.5				
Max Green Setting (Gmax), s	18.5	25.0		24.4	11.4	31.5		34.5				
Max Q Clear Time (g_c+1/2), s	12.2	12.9		12.2	6.2	18.1		16.7				
Green Ext Time (p_c), s	0.3	5.5		1.2	0.0	7.1		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			50.5									
HCM 2010 LOS			D									
Notes												

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 4: Somersville Rd & Buchanan Rd

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	257	117	131	28	228	80	301	352	17	46	164	182
Future Volume (veh/h)	257	117	131	28	228	80	301	352	17	46	164	182
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	292	133	0	32	259	0	342	400	17	52	186	32
Adj No. of Lanes	1	2	1	1	1	1	1	2	0	1	2	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	319	1125	503	67	327	278	377	1634	69	79	1064	476
Arrive On Green	0.18	0.31	0.00	0.04	0.17	0.00	0.21	0.47	0.47	0.04	0.30	0.30
Sat Flow, veh/h	1792	3574	1599	1792	1881	1599	1792	3492	148	1792	3574	1599
Grp Volume(v), veh/h	292	133	0	32	259	0	342	204	213	52	186	32
Grp Sat Flow(s),veh/h/ln	1792	1787	1599	1792	1881	1599	1792	1787	1853	1792	1787	1599
Q Serve(g_s), s	21.5	3.6	0.0	2.4	17.7	0.0	25.0	9.2	9.3	3.8	5.2	1.9
Cycle Q Clear(g_c), s	21.5	3.6	0.0	2.4	17.7	0.0	25.0	9.2	9.3	3.8	5.2	1.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	319	1125	503	67	327	278	377	836	867	79	1064	476
V/C Ratio(X)	0.92	0.12	0.00	0.48	0.79	0.00	0.91	0.24	0.25	0.66	0.17	0.07
Avail Cap(c_a), veh/h	427	1125	503	267	560	476	600	836	867	400	1064	476
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.2	32.8	0.0	63.4	53.1	0.0	51.8	21.5	21.5	63.2	35.0	33.8
Incr Delay (d2), s/veh	19.2	0.2	0.0	3.9	17.5	0.0	13.0	0.7	0.7	6.8	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	1.8	0.0	1.2	10.8	0.0	13.7	4.7	4.9	2.1	2.6	0.9
LnGrp Delay(d),s/veh	73.4	33.0	0.0	67.3	70.7	0.0	64.7	22.2	22.2	70.0	35.3	34.1
LnGrp LOS	E	C		E	E		E	C	C	E	D	C
Approach Vol, veh/h		425			291			759			270	
Approach Delay, s/veh		60.8			70.3			41.4			41.9	
Approach LOS		E			E			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	67.9	9.0	47.6	32.8	45.0	27.9	28.7				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.3	4.5	5.0	4.0	* 5.3				
Max Green Setting (Gmax), s	30.0	40.0	20.0	40.0	45.0	40.0	32.0	* 40				
Max Q Clear Time (g_c+1.5), s	15.8	11.3	4.4	5.6	27.0	7.2	23.5	19.7				
Green Ext Time (p_c), s	0.1	2.0	0.0	2.1	1.2	1.8	0.4	3.6				
Intersection Summary												
HCM 2010 Ctrl Delay			51.0									
HCM 2010 LOS			D									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	↘
Traffic Vol, veh/h	80	237	469	5	4	153
Future Vol, veh/h	80	237	469	5	4	153
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	175	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	87	258	510	5	4	166

























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	518	0	-	0	822 261
Stage 1	-	-	-	-	516 -
Stage 2	-	-	-	-	306 -
Critical Hdwy	4.12	-	-	-	6.82 6.92
Critical Hdwy Stg 1	-	-	-	-	5.82 -
Critical Hdwy Stg 2	-	-	-	-	5.82 -
Follow-up Hdwy	2.21	-	-	-	3.51 3.31
Pot Cap-1 Maneuver	1051	-	-	-	314 741
Stage 1	-	-	-	-	567 -
Stage 2	-	-	-	-	723 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1048	-	-	-	286 739
Mov Cap-2 Maneuver	-	-	-	-	388 -
Stage 1	-	-	-	-	518 -
Stage 2	-	-	-	-	721 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1048	-	-	-	388	739
HCM Lane V/C Ratio	0.083	-	-	-	0.011	0.225
HCM Control Delay (s)	8.7	-	-	-	14.4	11.3
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0.9

HCM 2010 Signalized Intersection Summary
6: Delta Fair Blvd & Buchanan Rd

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	24	135	28	77	297	139	88	354	73	58	125	12
Future Volume (veh/h)	24	135	28	77	297	139	88	354	73	58	125	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1900	1881	1881	1881
Adj Flow Rate, veh/h	27	152	12	87	334	101	99	398	75	65	140	3
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
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
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	89	641	50	152	612	182	164	512	96	128	590	493
Arrive On Green	0.05	0.19	0.19	0.08	0.23	0.23	0.09	0.33	0.33	0.07	0.31	0.31
Sat Flow, veh/h	1792	3349	261	1792	2701	802	1792	1535	289	1792	1881	1571
Grp Volume(v), veh/h	27	80	84	87	219	216	99	0	473	65	140	3
Grp Sat Flow(s),veh/h/ln	1792	1787	1823	1792	1787	1716	1792	0	1824	1792	1881	1571
Q Serve(g_s), s	0.8	2.1	2.2	2.6	6.1	6.3	3.0	0.0	13.2	2.0	3.1	0.1
Cycle Q Clear(g_c), s	0.8	2.1	2.2	2.6	6.1	6.3	3.0	0.0	13.2	2.0	3.1	0.1
Prop In Lane	1.00		0.14	1.00		0.47	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	89	342	349	152	405	389	164	0	608	128	590	493
V/C Ratio(X)	0.30	0.23	0.24	0.57	0.54	0.56	0.60	0.00	0.78	0.51	0.24	0.01
Avail Cap(c_a), veh/h	634	949	968	634	949	911	634	0	968	634	999	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	19.3	19.4	24.9	19.3	19.3	24.7	0.0	16.9	25.3	14.4	13.3
Incr Delay (d2), s/veh	1.9	0.5	0.5	3.4	1.6	1.8	3.5	0.0	3.1	3.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.1	1.1	1.4	3.2	3.1	1.6	0.0	7.1	1.1	1.6	0.0
LnGrp Delay(d),s/veh	27.8	19.8	19.9	28.2	20.9	21.1	28.2	0.0	20.0	28.3	14.7	13.4
LnGrp LOS	C	B	B	C	C	C	C		C	C	B	B
Approach Vol, veh/h		191			522			572			208	
Approach Delay, s/veh		21.0			22.2			21.4			18.9	
Approach LOS		C			C			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	23.9	8.8	15.8	9.2	22.7	6.8	17.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	20.0	30.0	20.0	30.0	20.0	30.0	20.0	30.0				
Max Q Clear Time (g_c+I1), s	4.0	15.2	4.6	4.2	5.0	5.1	2.8	8.3				
Green Ext Time (p_c), s	0.1	3.6	0.2	1.2	0.2	1.0	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay			21.3									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	253	7	30	460	1	26	0	69	0	0	1
Future Vol, veh/h	0	253	7	30	460	1	26	0	69	0	0	1
Conflicting Peds, #/hr	0	0	4	4	0	0	5	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	83	83	83	83	92	83	92	83	92	92	92
Heavy Vehicles, %	2	1	1	1	1	2	1	2	1	2	2	2
Mvmt Flow	0	305	8	36	554	1	31	0	83	0	0	1



















Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	555	0	0	317	0	0	667	940	161	780	944	283
Stage 1	-	-	-	-	-	-	313	313	-	627	627	-
Stage 2	-	-	-	-	-	-	354	627	-	153	317	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.52	6.54	6.92	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.52	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.21	-	-	3.51	4.02	3.31	3.52	4.02	3.32
Pot Cap-1 Maneuver	1011	-	-	1247	-	-	346	262	859	285	261	714
Stage 1	-	-	-	-	-	-	675	656	-	438	474	-
Stage 2	-	-	-	-	-	-	639	474	-	834	653	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1011	-	-	1242	-	-	331	250	856	249	249	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	331	250	-	249	249	-
Stage 1	-	-	-	-	-	-	672	653	-	438	454	-
Stage 2	-	-	-	-	-	-	608	454	-	753	650	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.6			12.5			10.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	597	1011	-	-	1242	-	-	711
HCM Lane V/C Ratio	0.192	-	-	-	0.029	-	-	0.002
HCM Control Delay (s)	12.5	0	-	-	8	0.1	-	10.1
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0

HCM 2010 Signalized Intersection Summary
 8: San Jose Dr & Buchanan Rd

Existing AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	253	8	2	368	84	17	37	12	56	18	26
Future Volume (veh/h)	15	253	8	2	368	84	17	37	12	56	18	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1900	1900	1881	1900
Adj Flow Rate, veh/h	18	298	5	2	433	75	20	44	3	66	21	13
Adj No. of Lanes	1	2	0	1	2	0	0	1	0	0	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	130	1261	21	123	1053	181	209	124	8	311	34	21
Arrive On Green	0.07	0.35	0.35	0.07	0.35	0.35	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1792	3595	60	1792	3037	522	483	1218	80	1051	334	207
Grp Volume(v), veh/h	18	148	155	2	253	255	67	0	0	100	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1772	1781	0	0	1593	0	0
Q Serve(g_s), s	0.3	1.7	1.7	0.0	3.2	3.2	0.0	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.3	1.7	1.7	0.0	3.2	3.2	1.0	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.03	1.00		0.29	0.30		0.04	0.66		0.13
Lane Grp Cap(c), veh/h	130	627	655	123	620	615	341	0	0	366	0	0
V/C Ratio(X)	0.14	0.24	0.24	0.02	0.41	0.41	0.20	0.00	0.00	0.27	0.00	0.00
Avail Cap(c_a), veh/h	1226	2447	2557	1226	2447	2426	1324	0	0	1229	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	6.7	6.7	12.7	7.3	7.3	12.2	0.0	0.0	12.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.0	0.6	0.6	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.9	0.0	1.7	1.7	0.5	0.0	0.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	12.9	7.0	7.0	12.7	7.9	7.9	12.3	0.0	0.0	12.6	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B			B		
Approach Vol, veh/h		321			510			67			100	
Approach Delay, s/veh		7.3			7.9			12.3			12.6	
Approach LOS		A			A			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	16.2		7.0	6.1	16.1		7.0				
Change Period (Y+Rc), s	4.0	6.0		4.0	4.0	6.0		4.0				
Max Green Setting (Gmax), s	20.0	40.0		20.0	20.0	40.0		20.0				
Max Q Clear Time (g_c+I1), s	2.0	3.7		3.7	2.3	5.2		3.0				
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	4.7		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			8.5									
HCM 2010 LOS			A									
Notes												

User approved pedestrian interval to be less than phase max green.

HCM 2010 Signalized Intersection Summary
 9: Auto Center Dr & Century Blvd/Mahogany Way

Existing AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗	↘	↔	↖	↗	↔	↖	↗	↔	↖	↘
Traffic Volume (veh/h)	78	22	87	185	42	35	210	620	183	23	427	107
Future Volume (veh/h)	78	22	87	185	42	35	210	620	183	23	427	107
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	83	36	31	197	45	14	223	660	0	24	454	97
Adj No. of Lanes	2	1	1	2	1	0	2	3	0	1	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	187	98	80	290	111	34	1500	3406	0	32	1059	220
Arrive On Green	0.05	0.05	0.05	0.08	0.08	0.08	0.89	1.00	0.00	0.02	0.26	0.26
Sat Flow, veh/h	3480	1827	1494	3480	1330	414	3375	5152	0	1740	4128	857
Grp Volume(v), veh/h	83	36	31	197	0	59	223	660	0	24	363	188
Grp Sat Flow(s),veh/h/ln	1740	1827	1494	1740	0	1743	1688	1663	0	1740	1663	1659
Q Serve(g_s), s	2.8	2.3	2.4	6.6	0.0	3.9	1.0	0.0	0.0	1.6	10.9	11.4
Cycle Q Clear(g_c), s	2.8	2.3	2.4	6.6	0.0	3.9	1.0	0.0	0.0	1.6	10.9	11.4
Prop In Lane	1.00		1.00	1.00		0.24	1.00		0.00	1.00		0.52
Lane Grp Cap(c), veh/h	187	98	80	290	0	145	1500	3406	0	32	853	426
V/C Ratio(X)	0.44	0.37	0.39	0.68	0.00	0.41	0.15	0.19	0.00	0.75	0.43	0.44
Avail Cap(c_a), veh/h	783	411	336	1009	0	506	1500	3406	0	200	853	426
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.92	0.92	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	54.8	54.8	53.5	0.0	52.2	3.8	0.0	0.0	58.6	37.2	37.4
Incr Delay (d2), s/veh	0.6	0.8	1.1	1.1	0.0	0.7	0.0	0.1	0.0	12.3	1.6	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	1.0	3.2	0.0	1.9	0.4	0.0	0.0	0.9	5.2	5.6
LnGrp Delay(d),s/veh	55.6	55.6	56.0	54.5	0.0	52.9	3.8	0.1	0.0	70.9	38.8	40.7
LnGrp LOS	E	E	E	D		D	A	A		E	D	D
Approach Vol, veh/h		150			256			883			575	
Approach Delay, s/veh		55.7			54.1			1.0			40.7	
Approach LOS		E			D			A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	59.3	35.8		10.7	7.2	87.9		14.2				
Change Period (Y+Rc), s	6.0	* 5		* 4.2	5.0	6.0		4.2				
Max Green Setting (Gmax), s	9.0	* 31		* 27	13.8	25.0		34.8				
Max Q Clear Time (g_c+I), s	13.0	13.4		4.8	3.6	2.0		8.6				
Green Ext Time (p_c), s	0.2	2.1		0.3	0.0	9.7		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay			25.0									
HCM 2010 LOS			C									
Notes												

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Appendix C: Approved Projects Trip Generation

Approved project	ITE Code	Use	Unit	Quantity	Daily	AM Peak Hour			PM Peak Hour			Procedure used
						Total	In	Out	Total	In	Out	
Arco AM/PM Gas Station and Car Wash	945	Gasoline/Service Station with Convenience market	ksf	3.18	4,580	242	123	119	281	143	138	Average Rate
			Vehicle fueling positions	18	3,697	225	115	110	252	129	123	
<i>Pass by trips</i>						(2,519)	(145)	(74)	(71)	(155)	(79)	(76)
<i>Net New Trips</i>						2,061	97	49	47	126	64	62
Buchanan Crossings Shops Building E	934	Drive Thru	ksf	3.164	1,491	128	65	63	104	54	50	Average Rate
	934	Drive Thru	ksf	4.339	2,044	175	89	86	142	74	68	Average Rate
	820	Shopping Center	ksf	5	785	155	96	59	60	36	24	Regression Equation
<i>Pass by trips</i>						(2,003)	(198)	(107)	(92)	(141)	(75)	(67)
<i>Net New Trips</i>						2,317	260	144	115	165	89	75
Tri Delta Park & Ride	90	Park & Ride Lot with Bus or Light Rail Service	Parking Spaces	186	644	80	63	17	110	28	83	Regression Equation
Tuscany Meadows Residential Subdivision		Signal Family Homes	units	1292	9940	797	190	607	947	599	348	Exisiting TIA
Sky Ranch II		Signal Family Homes	units	415	3972	311	78	233	419	264	155	Exisiting EIP
Delta Bowl Addition and Remodels	473	Bowling Alley	ksf	5	-	5	5	0	10	7	4	Regression Equation
Granite Expo	812	Building Materials and Lumber Store (Showroom)	ksf	32.756	592	52	33	19	68	32	36	Average Rate
Delta Fair Church/Daycare		Church	ksf	4.7	33	2	1	1	3	1	2	Average Rate
	565	Daycare	ksf	9.3	443	103	55	48	104	49	55	Average Rate
Total Estimated Trip Gen						24,582	1,949	741	1,206	2,233	1,276	956