

QUIKTRIP #4245

FINAL TRAFFIC STUDY

E. ALAMEDA AVENUE AND CRYSTAL STREET

Project No. 0222026.01-119

Date: FEBRUARY 2, 2024

FINAL TRAFFIC STUDY

QUIKTRIP - AURORA

E. ALAMEDA AVENUE AND CRYSTAL STREET

AURORA, COLORADO

FEBRUARY 2024

Prepared for:

**QUIKTRIP
&
CITY OF AURORA**

Prepared by:

Matthew L. Kruse, P.E., PTOE
PE-41484

**Lamp Rynearson
4715 Innovation Dr
Fort Collins, CO**

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INTRODUCTION

1.1 Study Background, Purpose and Goals

This report summarized the findings and recommendations of a traffic study for the proposed QuikTrip development in Aurora, Colorado. This property currently includes an office building with the site bounded by existing commercial properties to the north and east, Crystal Street to the west, and E. Alameda Avenue to the south. The location of this proposed development is shown in Figure 1.

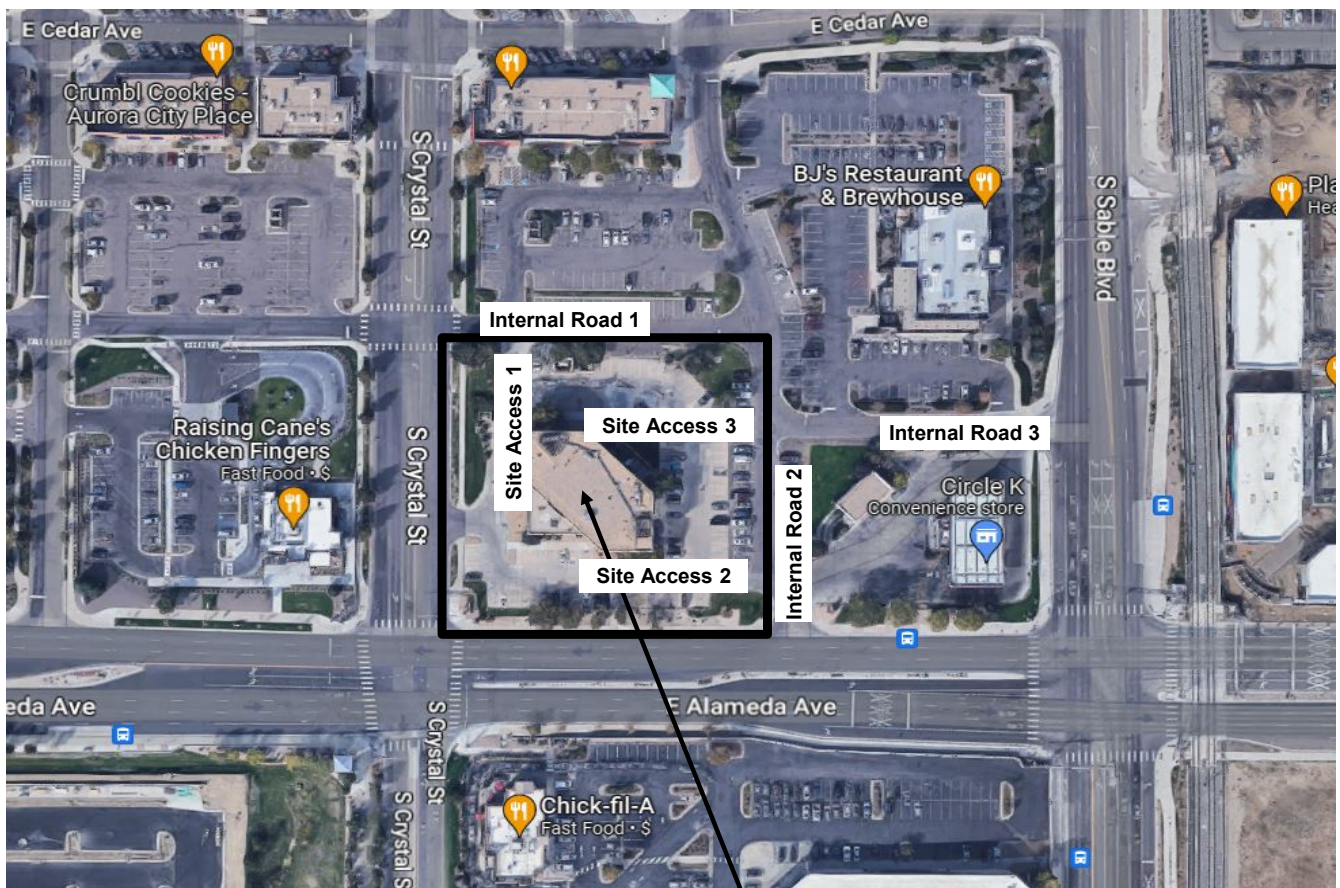
The proposed layout of the overall site is shown in Figure 2. The site will consist of a 16-pump gas station and convenience store. The land uses and resulting trip generation is shown in Table 1.

The purpose of this study was to assess the capacity of the existing roadway system to handle the background traffic and the impacts of the proposed development on E. Alameda Avenue along with S. Sable Boulevard and Crystal Street in the vicinity of the site. Another objective of this study was to look at right and left turn lane warrants, along with signal warrants, at all intersections. These roadways and intersections will provide the primary access for traffic generated from the development on a daily basis.

1.2 Data Gathering

The following bullet chart summarizes the data and the source of the data used to complete this study:

- 2023 Existing Traffic Count at the intersections of E. Alameda Avenue and S. Sable Boulevard, E. Alameda Avenue and Internal Road 2, Crystal Street and E. Alameda Avenue and Crystal Street and Site Entrance 1 in February 2023
- Site generated trips – *ITE Trip Generation Manual, 11th Edition, 2021*.



PROJECT LOCATION

FIGURE 1
SITE LOCATION

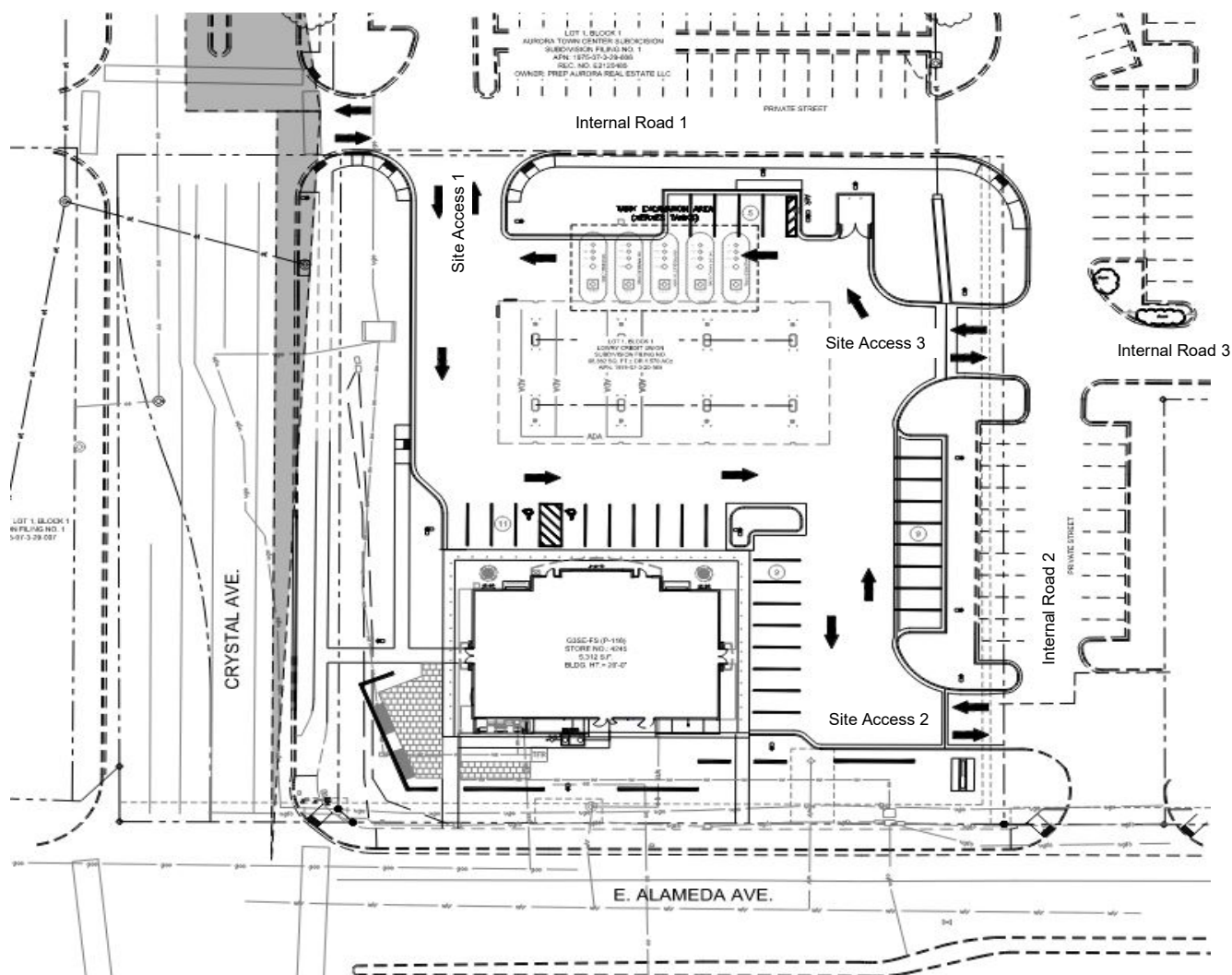


FIGURE 2
SITE PLAN

1.3 Overview of Study Approach

To achieve the main goal of the study, the following tasks were accomplished:

- Field inspection to observe the current lane configuration, signal operation and geometry.
- Traffic counts were conducted at the intersections of E. Alameda Avenue and S. Sable Boulevard, E. Alameda Avenue and Internal Road 2, Crystal Street and E. Alameda Avenue and Crystal Street and Site Entrance 1 in February 2023.
- Determine site generated traffic, distribution and assignment including internal trips for the site.
- Determine total traffic volumes (site and background) for the peak hours in the year 2023, year 2028 and year 2040.
- Determine year 2023, year 2028 and year 2040 intersection capacity to handle background traffic using Synchro Version 11 and SimTraffic Software.
- Determine year 2023, year 2028 and year 2040 intersection capacity to handle opening day (build-out site + background traffic) and future horizon year traffic, using Synchro Version 11 and SimTraffic.
- Queue analysis; and
- Development of recommendations for roadway and traffic control improvements.

CHAPTER 2: ROADWAY NETWORK CHARACTERISTICS

2.1 Site and Study Area Boundaries

The study area is shown on Figure 1. The site is located in Aurora, Colorado on the northeast corner of E. Alameda Avenue and Crystal Street. Access to I-225 is provided at E. Alameda Ave and is located approximately one quarter mile west of the site. This site is a current office building bounded by existing commercial properties to the north and east, Crystal Street to the west and E. Alameda Avenue to the south. The main intersections analyzed as a part of this study are:

- E. Alameda Avenue and S. Sable Boulevard
- E. Alameda Avenue and Internal Road 2
- E. Alameda Avenue and Crystal Street
- Crystal Street and Internal Road 1
- S. Sable Boulevard and Internal Road 3
- Internal Road 1 and Internal Road 2
- Internal Road 2 and Internal Road 3/Site Access 3
- Internal Road 1 and Site Access 1
- Internal Road 2 and Site Access 2

The proposed site is anticipated to have three access points. Two of the three access points are anticipated to be located on the east side of the site and provides access to Internal Road 2 that is accessible from Site Access 2 and Site Access 3. The third access point is along the Internal Road 1 and the access will be just east of the intersection of Crystal Street and Internal Road 1. This intersection is labeled as Site Access 1.

2.2 Existing Roadway Configuration

E. Alameda Avenue is a major arterial in the City of Aurora. Near the site, this roadway has three lanes in each through direction. At the Crystal Street

intersection, there are dual eastbound left turn lanes, a single westbound left turn lane and an eastbound right turn lane. At the S. Sable Boulevard intersection, E. Alameda Avenue still has three through lanes, dual westbound left turning lanes, a westbound right turn lane and an eastbound left and right turn lane. The posted speed limit along this roadway is 40 miles per hour.

S. Sable Boulevard at E. Alameda Avenue is a major arterial that has two through lanes in each direction, dual southbound left turn lanes and a single northbound left turn lane along with a southbound and northbound right turn lane. The speed limit along S. Sable Boulevard near the site is 35 miles per hour. There is light rail on the east side of S. Sable Boulevard with a station located south of the E. Alameda Avenue intersection.

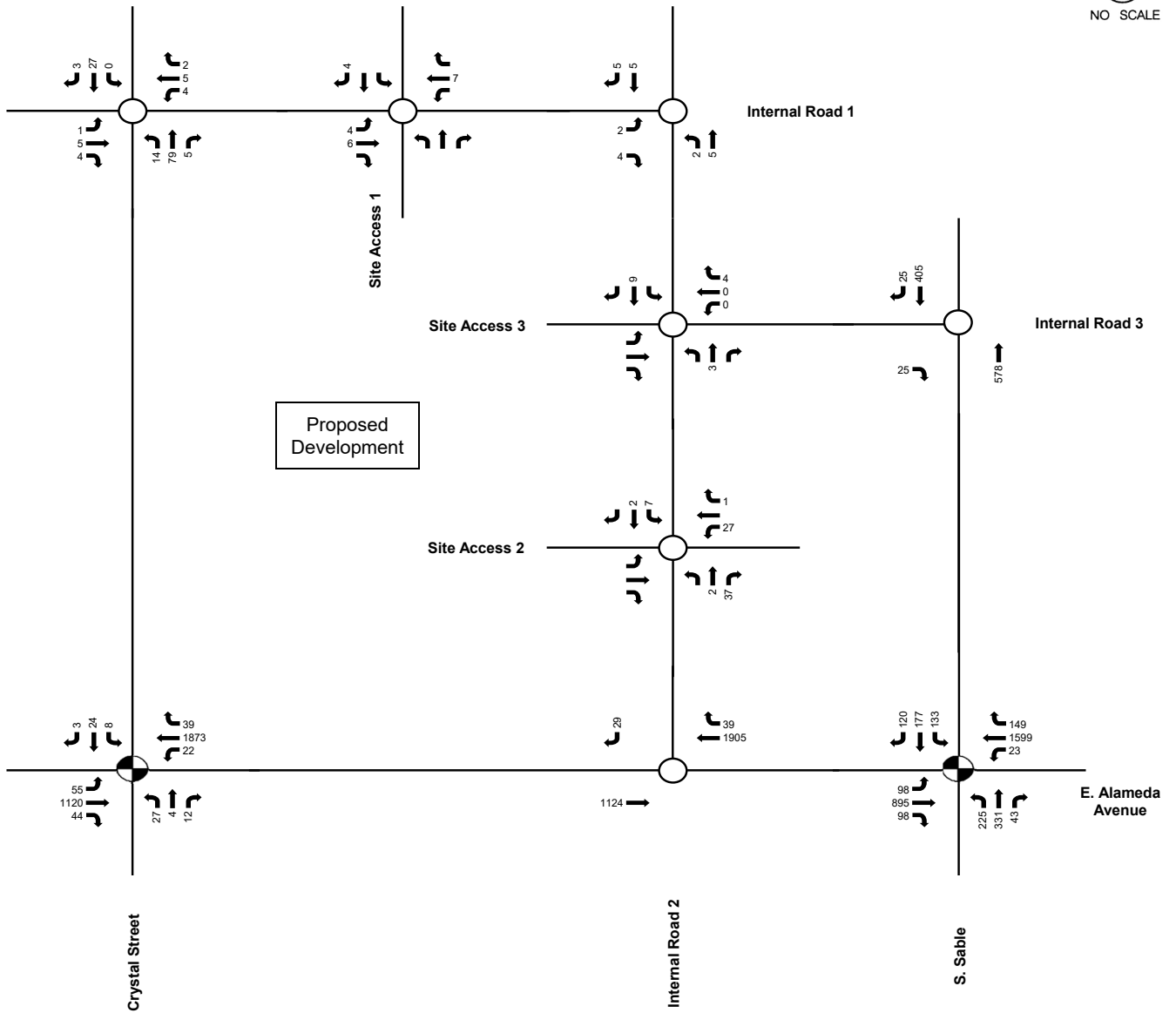
Crystal Street is a collector road adjacent to the site. The posted speed limit along Crystal Street is 20 miles per hour. On the north side of the intersection of Crystal Street and E. Alameda Ave, the roadway is a five-lane road with two through lanes in each direction along with a left turn lane. The existing geometry is shown in Figure 3.

CHAPTER 3: BACKGROUND TRAFFIC VOLUMES

3.1 Year 2023, year 2028 and year 2040 Background Traffic Volumes

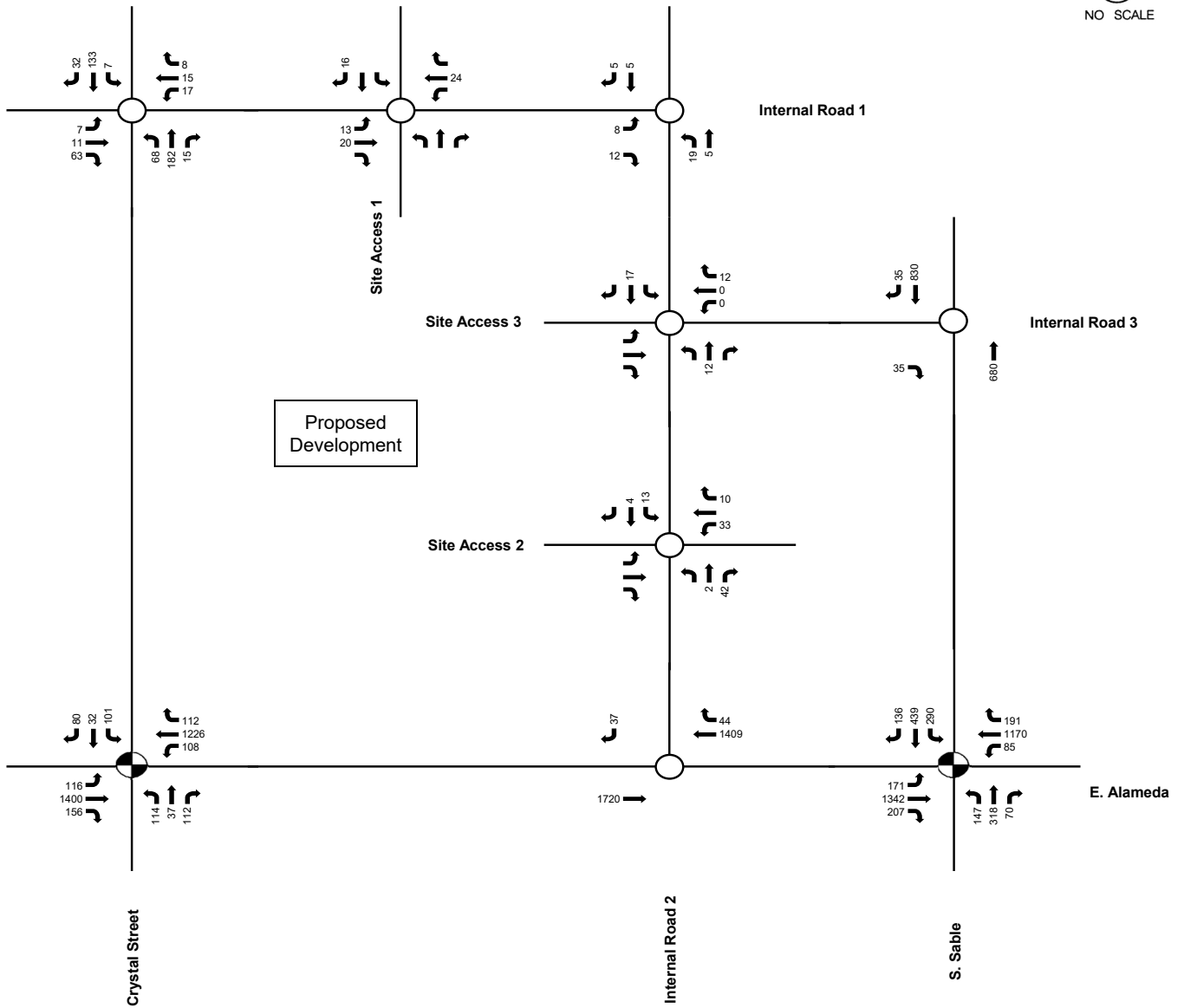
A traffic count was conducted at the intersections of E. Alameda Avenue and S. Sable Boulevard, E. Alameda Avenue and Internal Road 2, Crystal Street and E. Alameda Avenue and Crystal Street and Site Entrance 1 in February of 2023. These intersections were counted in the morning from 7:00 am to 9:00 am and in the evening from 4:00 pm to 6:00 pm. The peak hour of the area was found to occur during the PM peak hour from 4:45 pm to 5:45 pm. The AM peak hour was observed from 7:15 am to 8:15 am. The 2023 background traffic for the AM peak hour is included in Figure 4 and the PM peak hour volumes in Figure 5.

An estimated overall growth factor of 2 percent was applied to the traffic volumes in the area around the site. This growth rate was obtained from the previously completed Fieldhouse at Aurora Town Center Traffic Study. Using this growth factor, background traffic was developed for the years 2028 and 2040. The year 2028 was selected as a 5-year horizon from full build-out. The year 2040 was selected as a future horizon year. Figures 6 and 7 include the background volumes for the peak hours in the year 2026 volumes. The 2040 background volumes can be found in Figures 8 and 9.



| LEGEND | | |
|--------|---------------------------|---|
| | Unsignalized Intersection | 155 Traffic Volume |
| | Signalized Intersection | Through Traffic Lane |
| | Future Intersection Leg | Turning Traffic Lane (Right or Left Lane) |

FIGURE 4
2023 AM PEAK HOUR
BACKGROUND VOLUMES



| LEGEND | | |
|--------|---------------------------|---|
| | Unsignalized Intersection | 155 Traffic Volume |
| | Signalized Intersection | Through Traffic Lane |
| | Future Intersection Leg | Turning Traffic Lane (Right or Left Lane) |

FIGURE 5
2023 PM PEAK HOUR
BACKGROUND VOLUMES

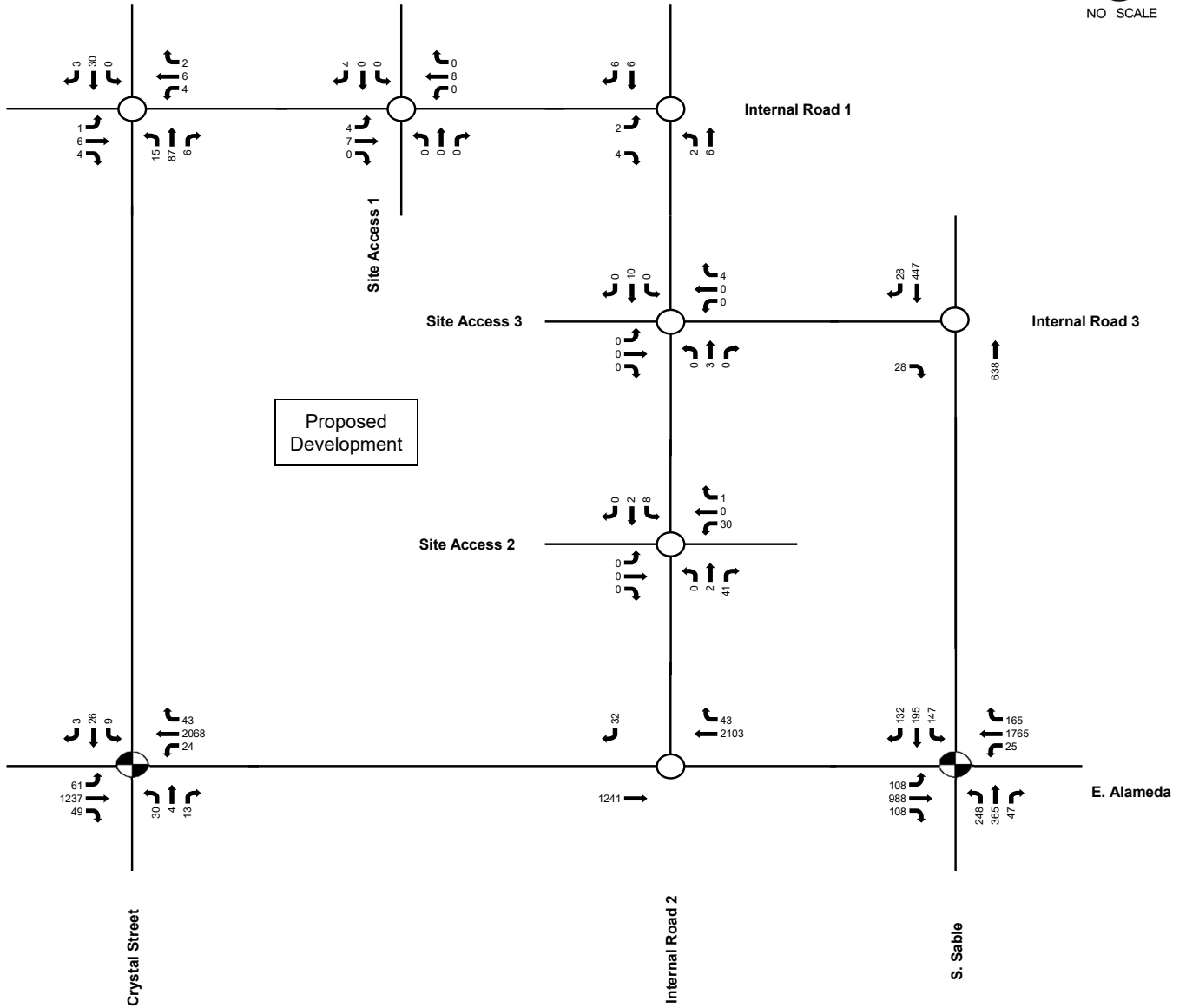
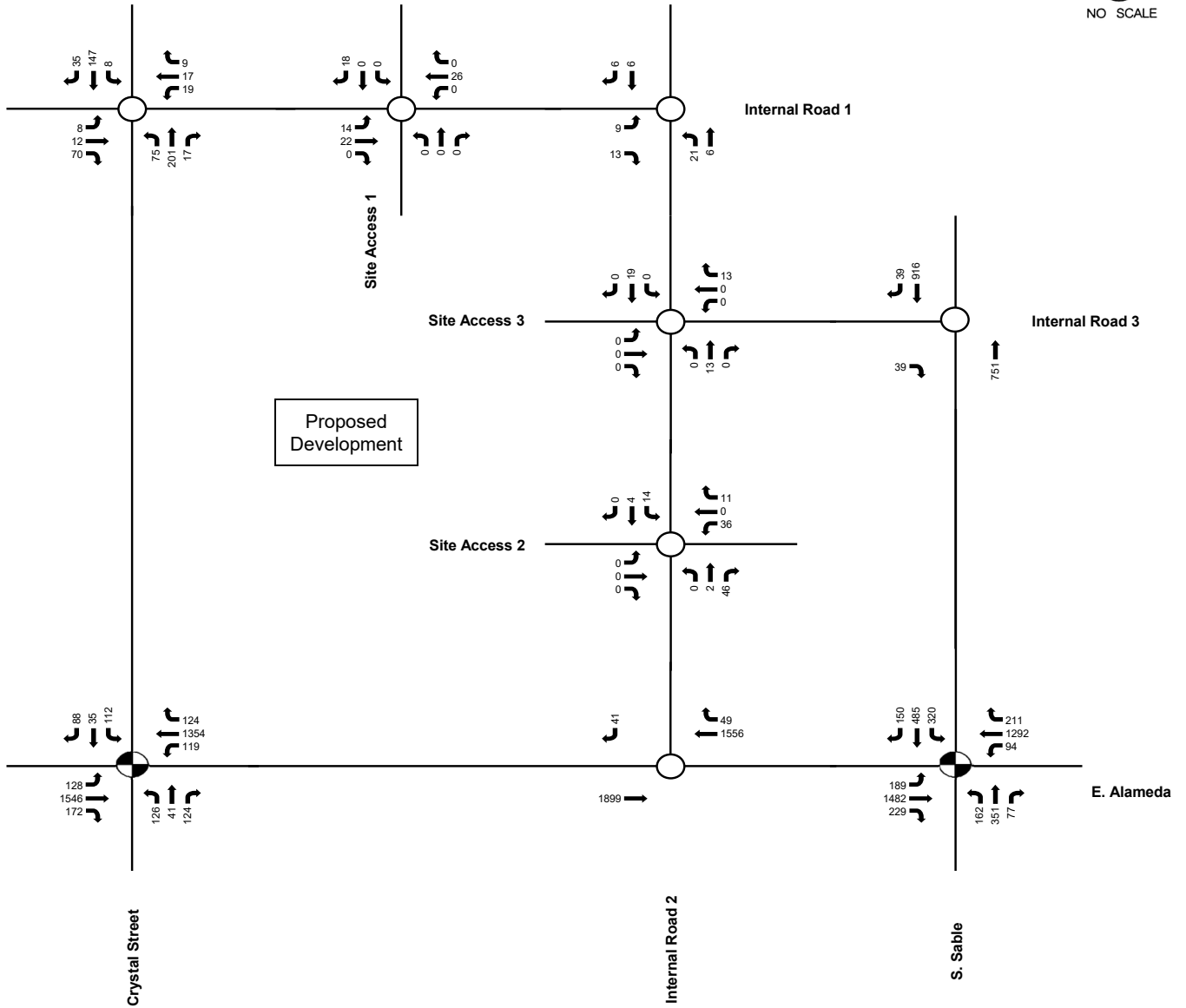
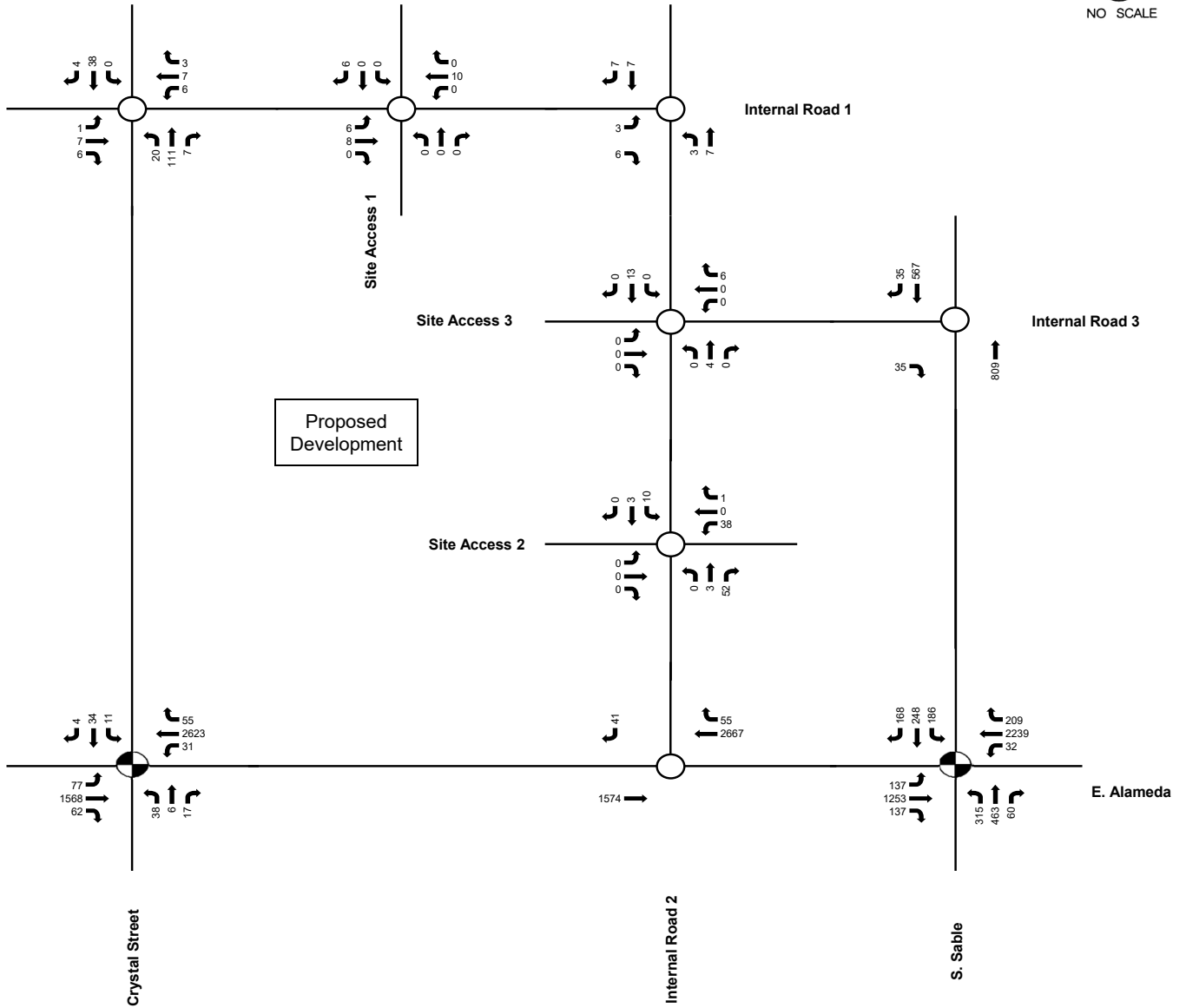


FIGURE 6
2028 AM PEAK HOUR
BACKGROUND VOLUMES



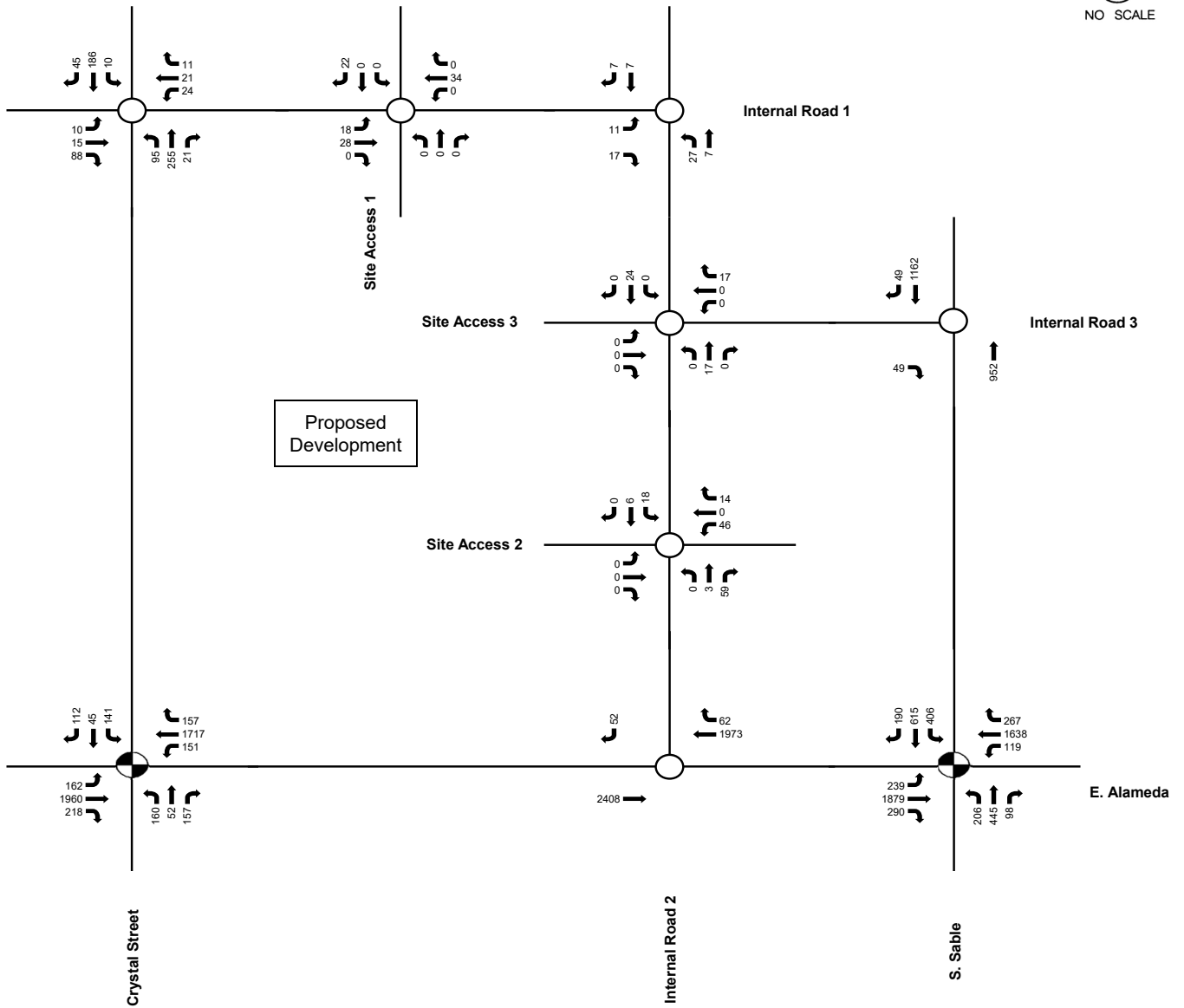
| LEGEND | | |
|--------|---------------------------|---|
| | Unsignalized Intersection | 155 Traffic Volume |
| | Signalized Intersection | Through Traffic Lane |
| | Future Intersection Leg | Turning Traffic Lane (Right or Left Lane) |

FIGURE 7
2028 PM PEAK HOUR
BACKGROUND VOLUMES



| LEGEND | | |
|--------|---------------------------|---|
| | Unsignalized Intersection | 155 Traffic Volume |
| | Signalized Intersection | Through Traffic Lane |
| | Future Intersection Leg | Turning Traffic Lane (Right or Left Lane) |

FIGURE 8
2040 AM PEAK HOUR
BACKGROUND VOLUMES



| LEGEND | | |
|--------|---------------------------|---|
| | Unsignalized Intersection | 155 Traffic Volume |
| | Signalized Intersection | Through Traffic Lane |
| | Future Intersection Leg | Turning Traffic Lane (Right or Left Lane) |

FIGURE 9
2040 PM PEAK HOUR
BACKGROUND VOLUMES

CHAPTER 4: SITE TRIP ANALYSIS

4.1 Proposed Access Locations

There are three proposed access points into the site. Two of them are located along the north/south internal road on the east side of the site. These intersections can be accessed from S. Sable Boulevard via Internal Road 3 or from the intersection of E. Alameda Avenue and Internal Road 2. The third access is located just east of the intersection of Crystal Street and Internal Road 1.

4.2 Trip Generation

4.2.1 Site Trip Generation

The proposed development is planned to consist of a 16-pump gas station and convenience store. The trip generation rates, as published in the ITE *Trip Generation Manual*, 11th Edition, 2021, were used to estimate the vehicle trips generated by the proposed site. When possible, the formulas for trip generation estimates were used instead of average rates. A detailed breakdown of the trip generation rate is shown in Table 1 for the daily AM and PM peak hour. Table 1 also summarizes the land use type, the quantity, and the units of the land use for the development as illustrated in Figure 2.

4.2.2 Primary Trips

Primary trips are net new trips added to the study area as a result of the proposed development or stated otherwise, trips made for the specific purpose of coming to or leaving the site. For example, a home-to-school-to-home is considered a primary trip. Primary trips are of major importance since this is the net increase in traffic volume that the system must be designed to handle. Table 1 shows the primary trip generation for the site. For the AM peak hour, the site is anticipated to generate 433 vehicle trips with 216 of those trips entering the site and the remaining 217 trips exiting the site. For the PM peak hour, the site is anticipated

to generate 364 vehicle trips, with 182 of those trips entering the site and 182 trips exiting the site.

4.2.3 Pass-by Trips

Pass-by trips diverted from existing traffic flow are those trips that are attracted to the site from the adjacent traffic stream. The pass-by trips represent those vehicles already on the roadway that will enter and exit the development. An example would be a vehicle that currently passes by the site on E. Alameda Avenue, turns into the development to stop at the convenience store and then exits back onto E. Alameda Avenue to continue with their previous route. While the trip is new to the driveway system and must be designed for, it is not a newly generated trip on E. Alameda Avenue. The pass-by trip reduction percentages for the corresponding land uses in the proposed development are shown in each table. Pass-by trips were derived from data in the *ITE Trip Generation Handbook, An ITE Proposed Recommended Practice, 3rd Edition, August 2014*.

**Site Trips For Proposed Development
QuikTrip Aurora**

| Land Use No. | Land Use | Intensity | Unit | Daily Trip Rate | ADT | Pass-by Reduced Trips | | | | | | | | | | | | | | | |
|-----------------|--|-----------|------|--------------------|-----------|-----------------------|-----|-----|-------|--------------|-----|-----|-------|-----------------------|----|-----|-------|-----|----|----|----|
| | | | | | | AM Peak Hour | | | | PM Peak Hour | | | | Pass-by Reduced Trips | | | | | | | |
| | | | | | | Rate | In | Out | Total | Rate | In | Out | Total | Rate | In | Out | Total | | | | |
| 945 | Convenience Store/Gas Station (GFA 4-5.5k) | 16 | VFP | 257.13 | /VFP 4114 | 27.04 | 216 | 217 | 433 | 22.76 | 182 | 182 | 364 | 76% | 52 | 52 | 104 | 75% | 46 | 46 | 91 |
| Total Traffic | | | | | | | 216 | 217 | 433 | | 182 | 182 | 364 | | 52 | 52 | 104 | | 46 | 46 | 91 |

Notes:

1. All trip generation rates based on "Trip Generation", Institute of Transportation Engineers, 11th Edition
2. Peak hour directional splits from "Trip Generation":

Convenience Store/Gas Station AM Peak Hour 50% PM Peak Hour 50%



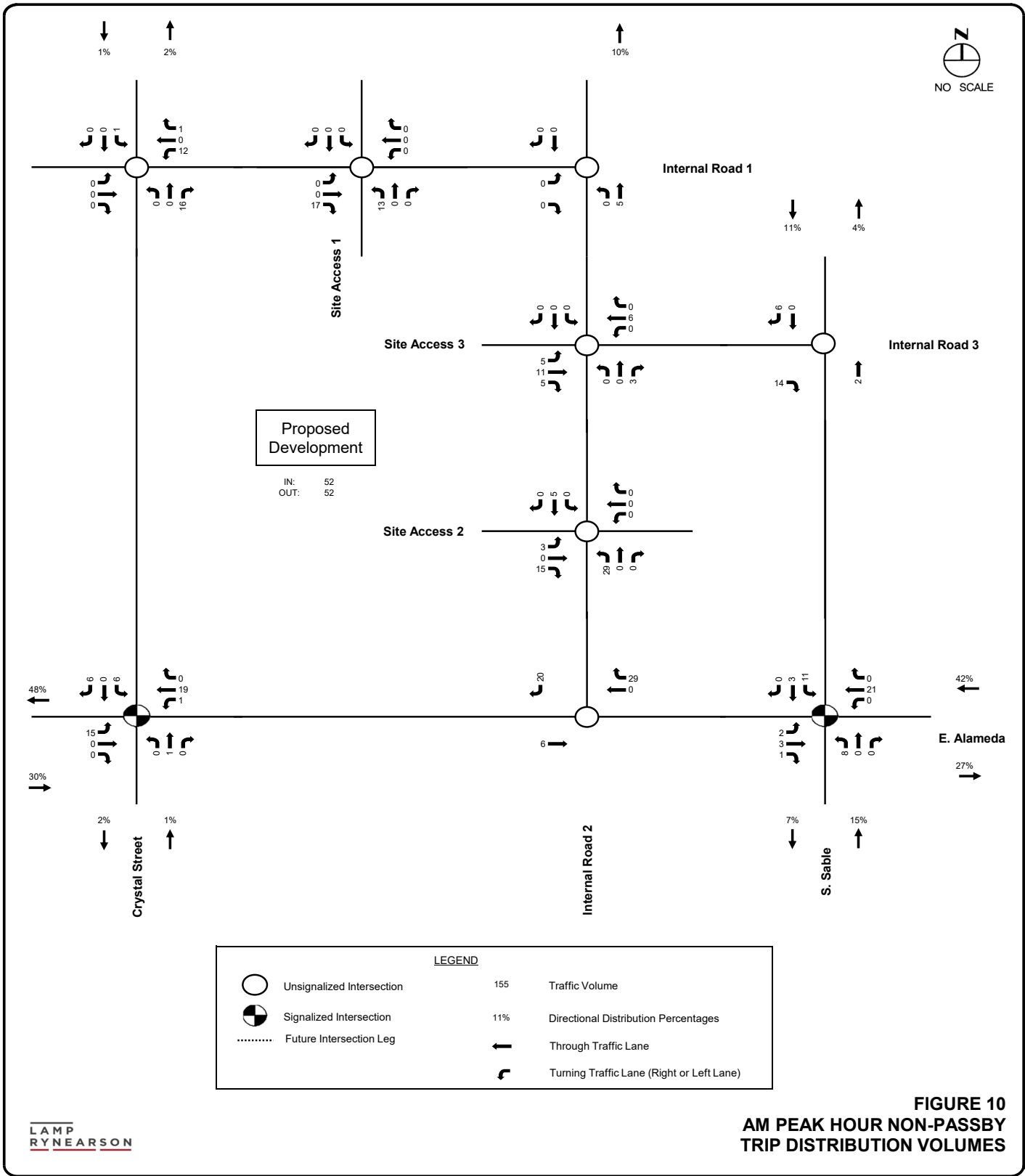
TABLE 1
Trip Generation

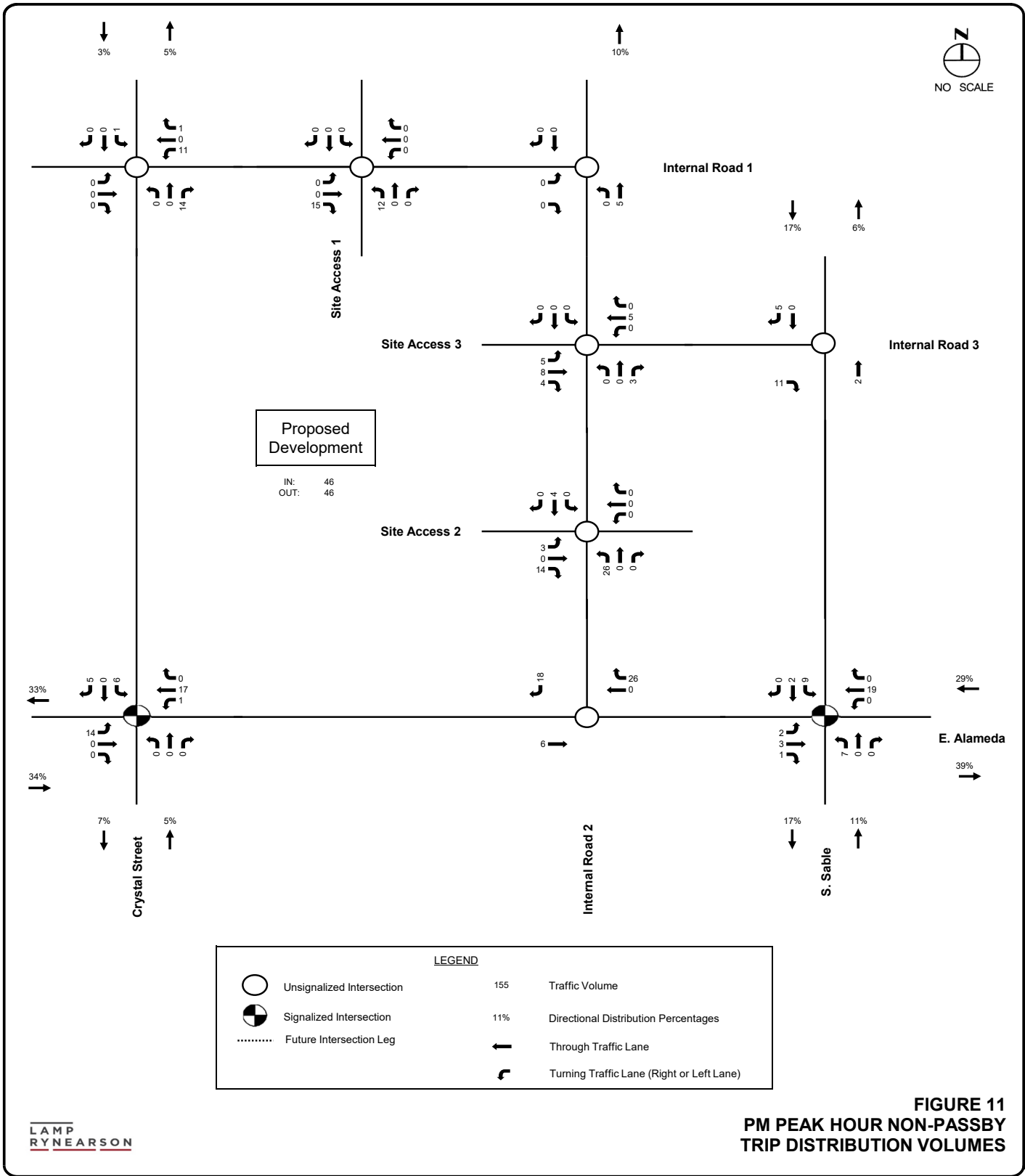
4.3 Trip Distribution and Assignment

Trip distribution is the process of determining a pattern of distribution of existing (background) traffic within the existing system. Traffic assignment is the process of allocating the site-generated trips to the adjacent roadway system.

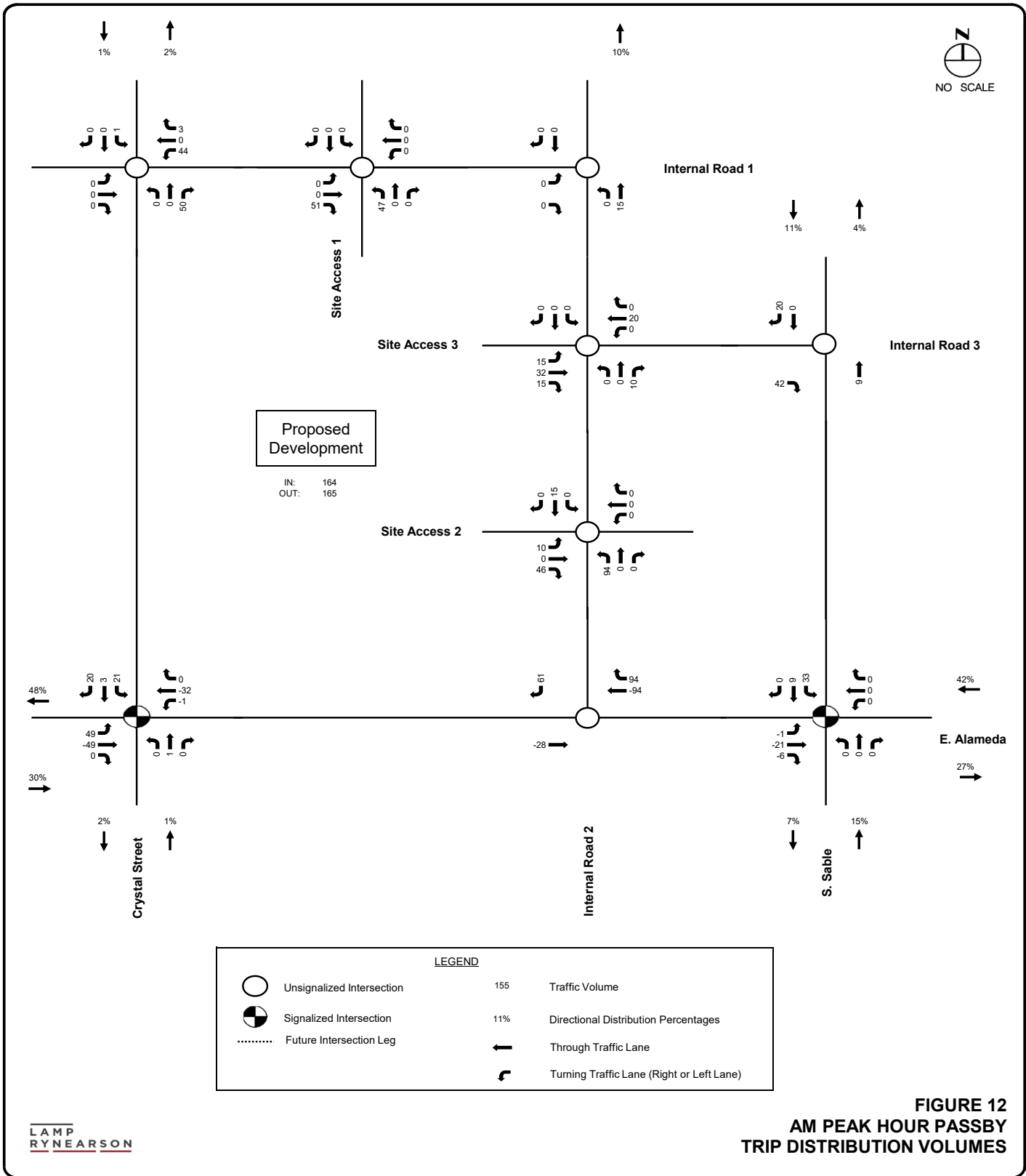
The orientation of site-generated traffic is a function of trip purposes, surrounding land uses, and the configuration and accessibility of the street network. The vehicle trips estimated by the trip generation process are directionally distributed onto the roadway network using directional percentages calculated from the existing travel patterns found from the background traffic volumes collected in the traffic counts. This process involves using a cordon line around the proposed site and finding the total number of vehicles passing over the cordon line. It is anticipated that the development would be built-out this year (2023). For this study, there would be three main intersections where vehicles were assumed to travel through to leave and return to the site. These were the intersections of E. Alameda Avenue and S. Sable Boulevard, E. Alameda Avenue and Crystal Street and Crystal Street and Internal Road 1. It was assumed that some vehicles would utilize the internal north/south roadway between S. Sable Boulevard and Crystal Street in order to travel northbound on S. Sable Boulevard. The AM peak hour trip non-pass-by trip distribution is shown in Figure 10 with the PM shown in Figure 11. The AM peak hour pass-by trip distributions are included in Figure 12. Figure 13 shows the PM peak hour pass-by trip distributions.

These site generated trips are then added to the corresponding background trips to establish build-out volumes for both the AM and PM peak hours. The build-out volumes for the AM peak hour in 2023 are included in Figure 14 and for the PM peak hour in Figure 15. Figure 16 shows the 2028 AM build-out volumes with Figure 17 showing the 2028 PM build-out volumes. The volumes for the future build-out year of 2040 are shown in Figure 18 for the AM peak hour and Figure 19 for the PM peak hour.





10/5/23 10:10 AM



10/5/23 10:10 AM

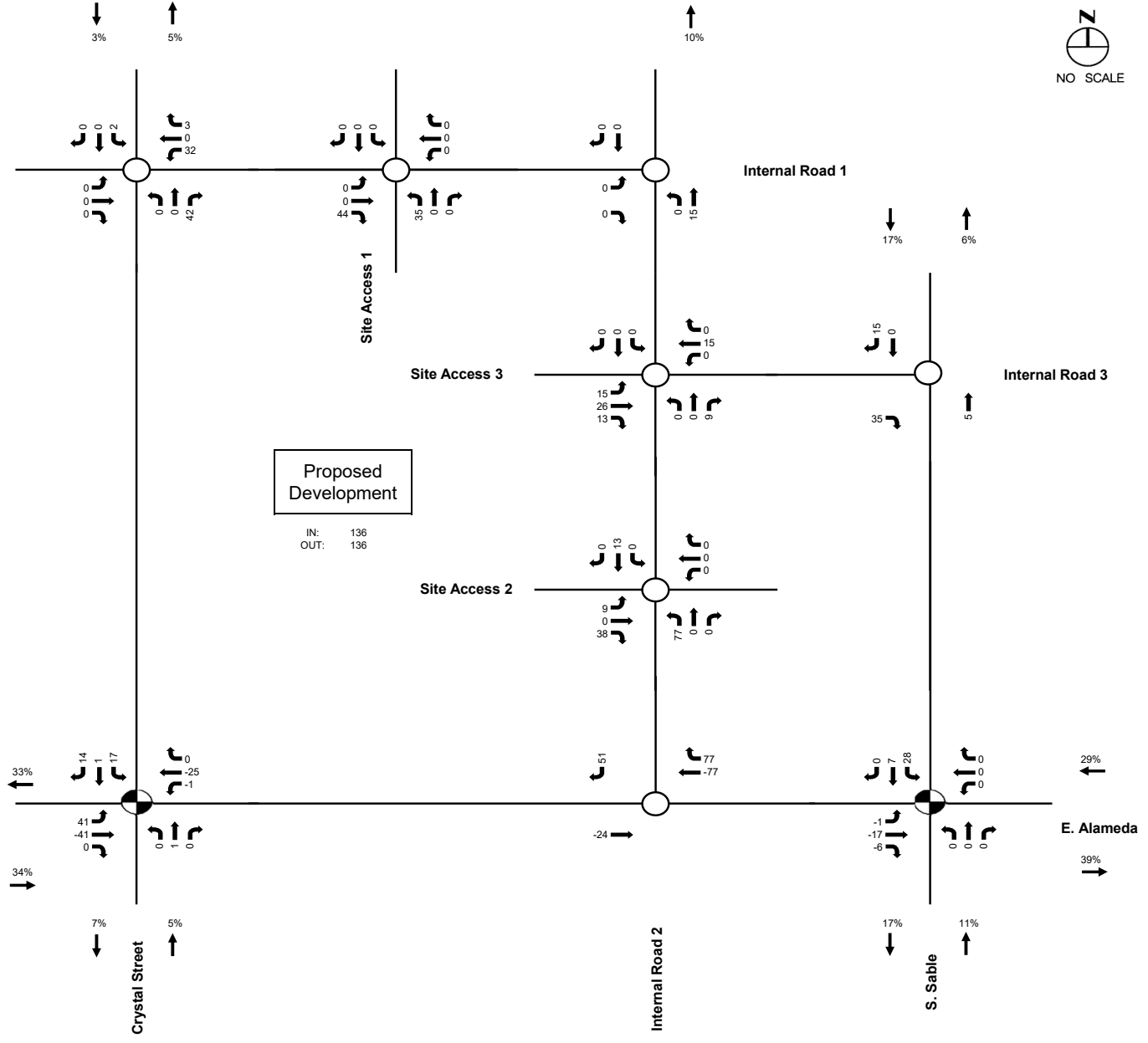


FIGURE 13
PM PEAK HOUR PASSBY
TRIP DISTRIBUTION VOLUMES

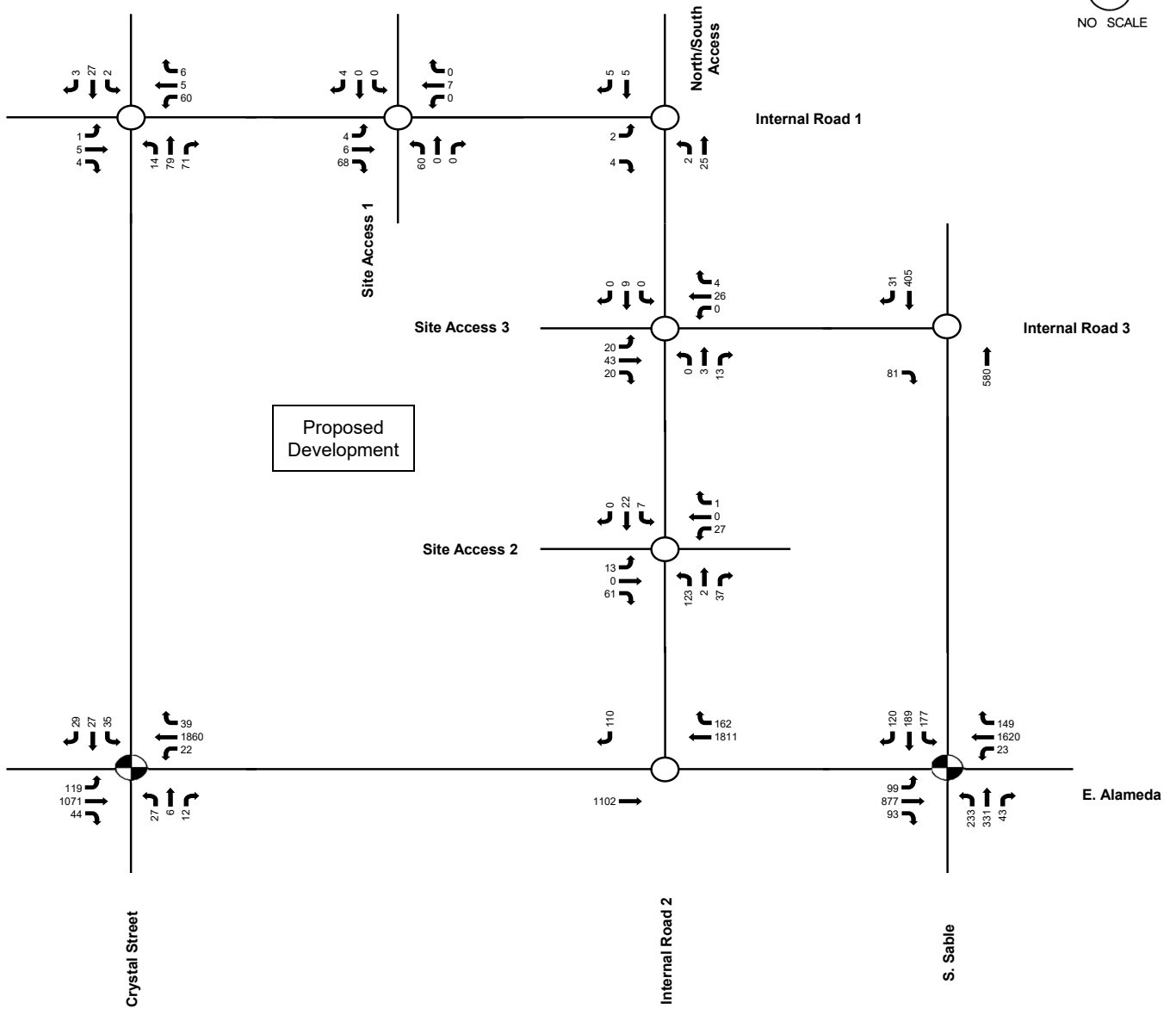


FIGURE 14
2023 AM PEAK HOUR
BUILD-OUT VOLUMES

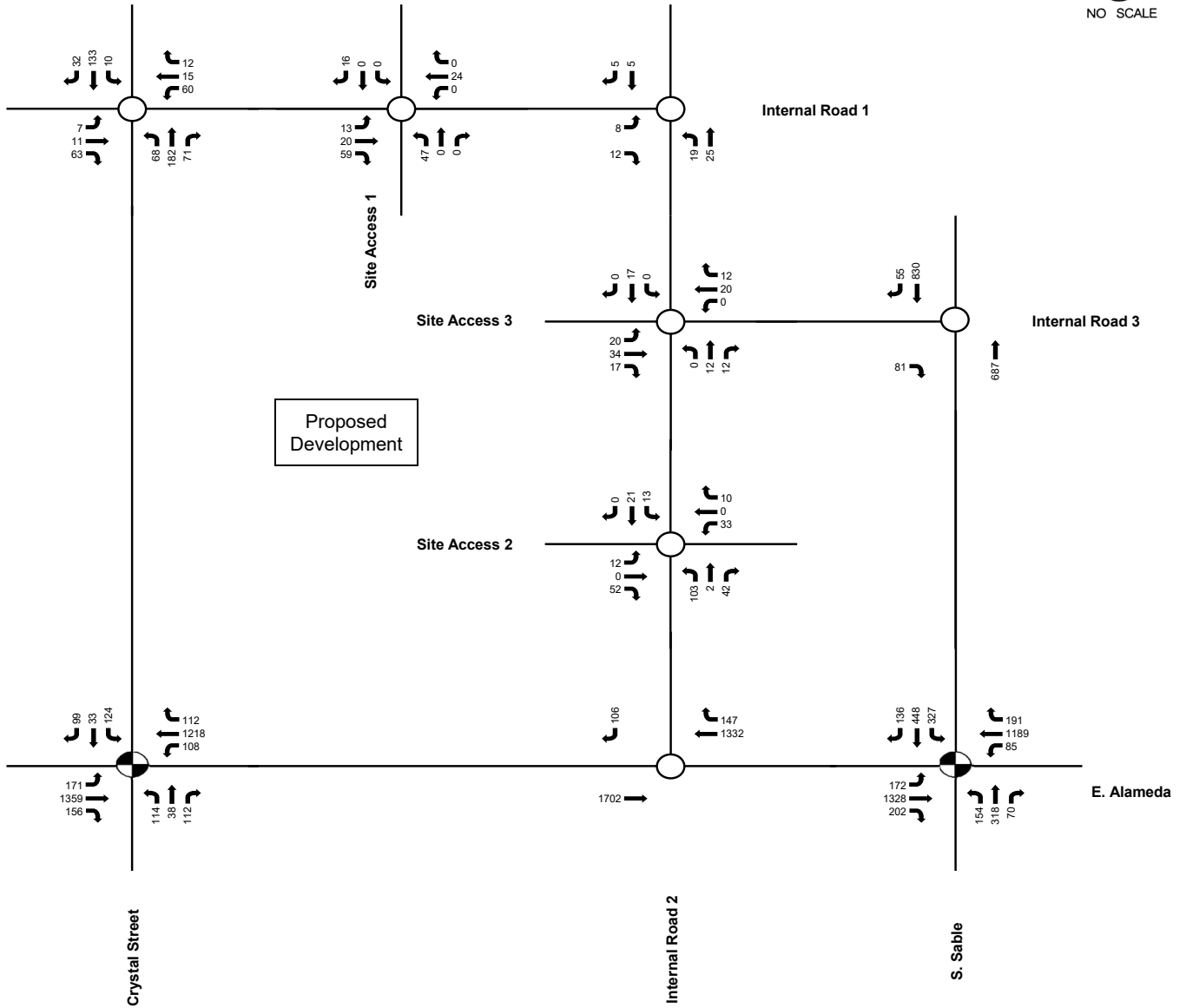


FIGURE 15
2023 PM PEAK HOUR
BUILD-OUT VOLUMES

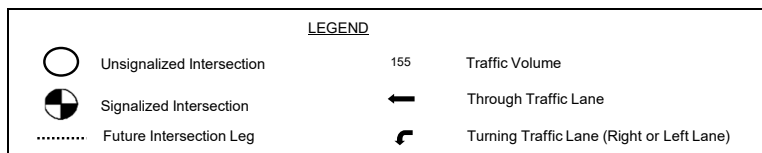
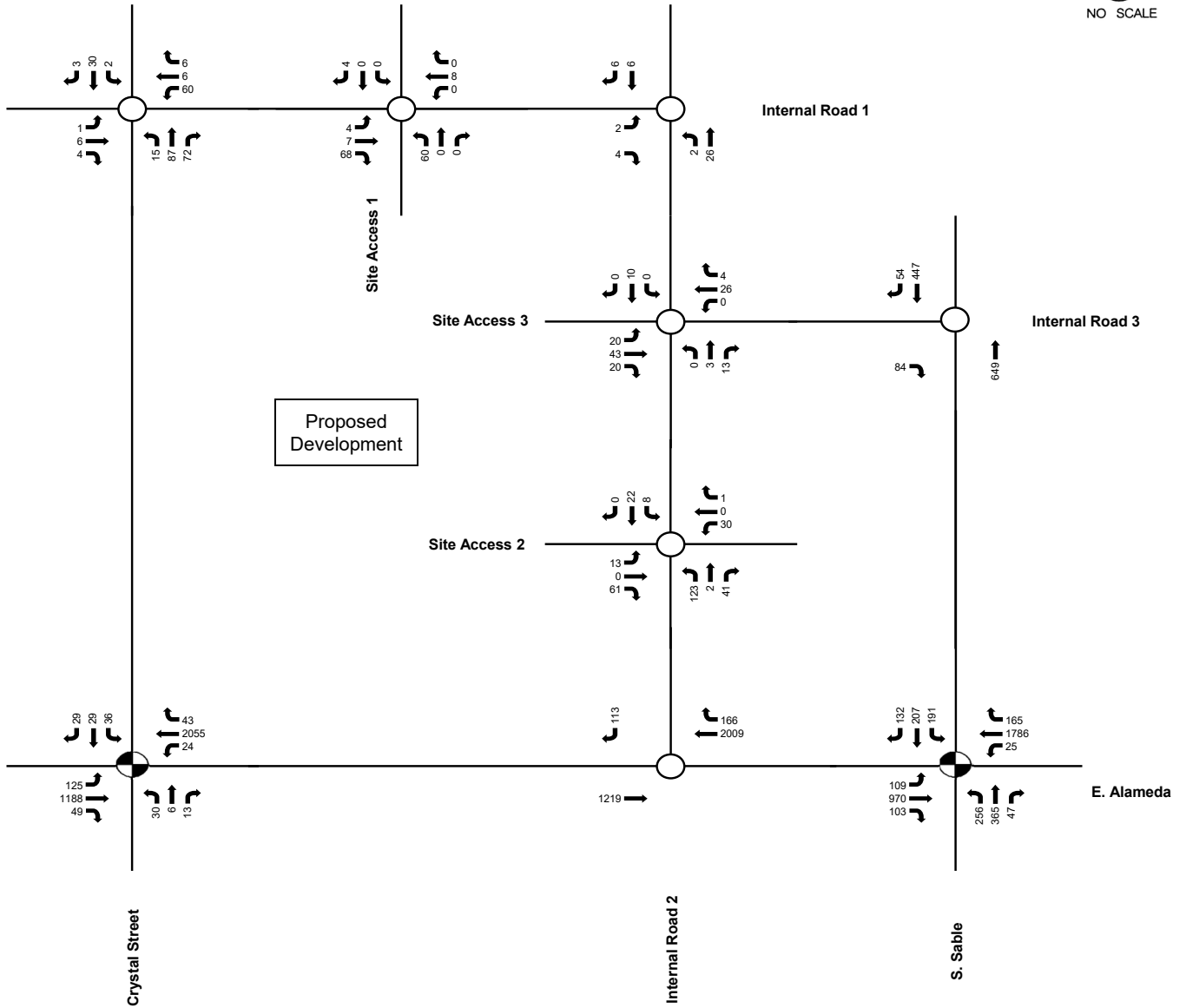


FIGURE 16
2028 AM PEAK HOUR
BUILD-OUT VOLUMES

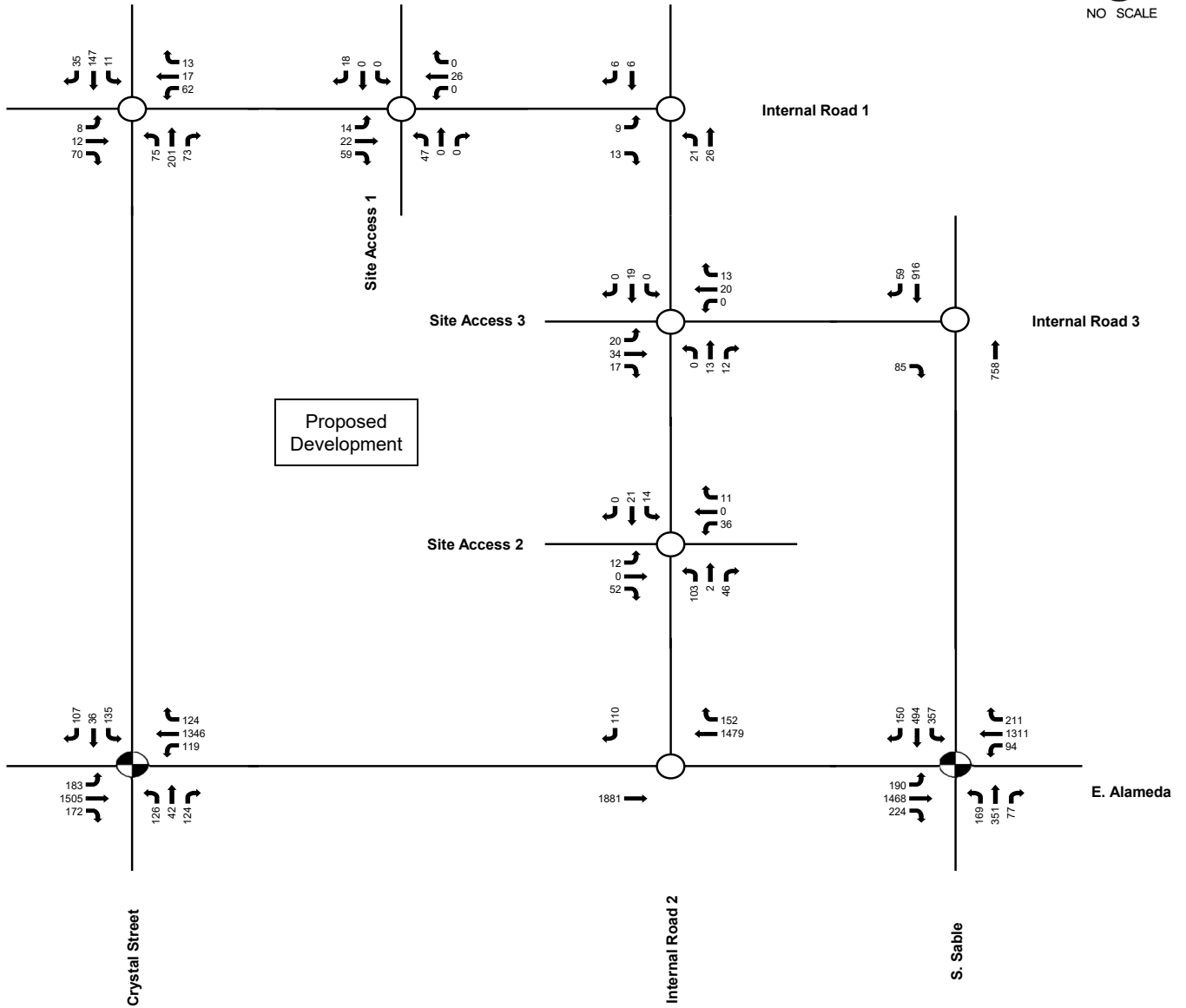
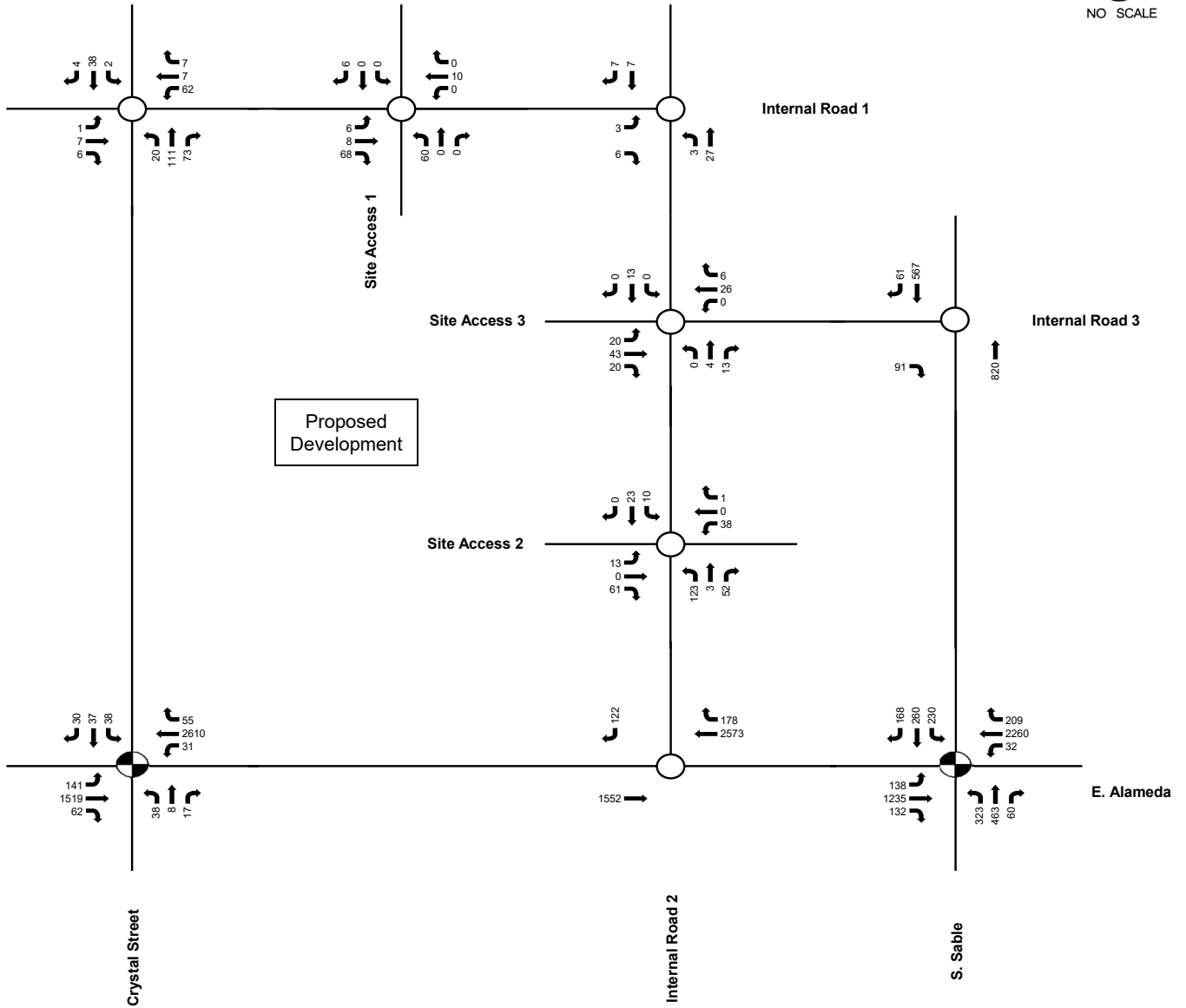


FIGURE 17
2028 PM PEAK HOUR
BUILD-OUT VOLUMES



LEGEND

| | | | |
|--|---------------------------|-----|---|
| | Unsignalized Intersection | 155 | Traffic Volume |
| | Signalized Intersection | | Through Traffic Lane |
| | Future Intersection Leg | | Turning Traffic Lane (Right or Left Lane) |

FIGURE 18
2040 AM PEAK HOUR
BUILD-OUT VOLUMES

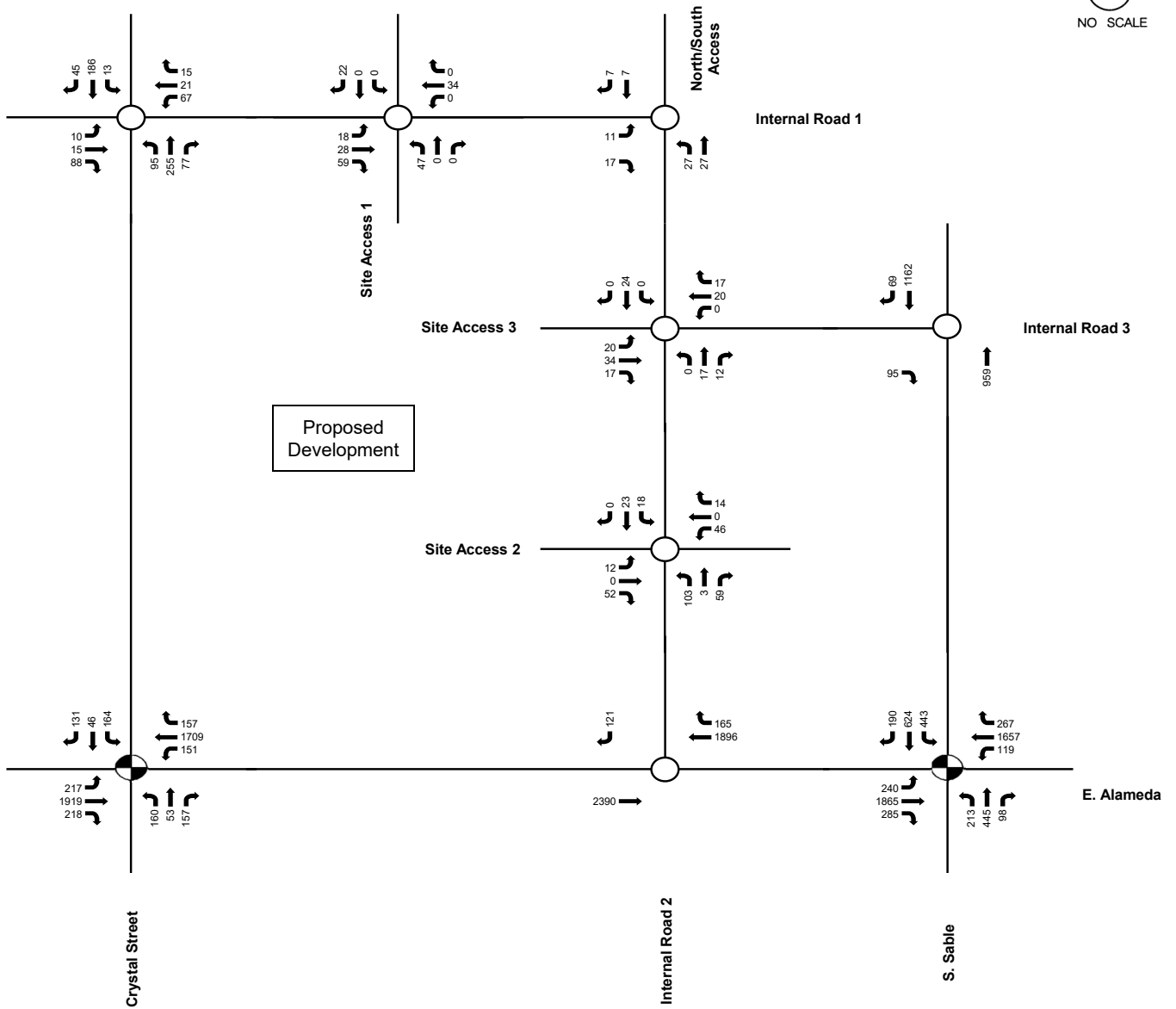


FIGURE 19
2040 PM PEAK HOUR
BUILD-OUT VOLUMES

CHAPTER 5: TRAFFIC ANALYSIS

5.1 Background Traffic Intersection Performance Analysis

An analysis of all the signalized intersections capacity performance was performed using Synchro 11.0. Synchro is a macroscopic traffic software program that replicates the signalized intersection capacity analysis. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the intersections. Equations are used to determine measures of effectiveness such as delay and queue length. Effect of queues was observed with SimTraffic simulation.

While observations of traffic volumes provide an understanding of the general nature of traffic in the area, they are insufficient to indicate either the ability of the street network to carry additional traffic or the quality of service provided by the street facilities. For this reason, the concept of level of service (LOS) has been developed to correlate numerical traffic-volume data to subjective descriptions of traffic performance at intersections. Each lane of traffic has delay associated with it and therefore a correlating LOS. The overall LOS of a signalized intersection is made up of the weighted average delay for each lane of traffic for all of the approaches.

LOS is a measure of effectiveness for intersection operating conditions and is based on delay experience by vehicles passing through the intersection. LOS ranges from “A” to “F”, with LOS “A” representing little or no delay, and LOS “F” representing extreme delay. LOS “C” or better is considered desirable, LOS “D” being acceptable in some urban situations. The qualitative definition of each category can be found in the appendix. The following Table 3 shows the intersection LOS Criteria for both signalized and unsignalized intersections. (HCM 2010):

Table 2 – Intersection LOS Criteria

| Level of Service | Signalized Control Delay Range | Unsignalized Control Delay Range |
|------------------|-----------------------------------|-------------------------------------|
| A | ≤ 10 seconds | ≤10 seconds |
| B | >10 and ≤ 20 seconds | >10 and ≤ 15 seconds |
| C | >20 and ≤ 35 seconds | >15 and ≤ 25 seconds |
| D | >35 and ≤ 55 seconds | >25 and ≤ 35 seconds |
| E | >55 and ≤ 80 seconds | >35 and ≤ 50 seconds |
| F | >80 seconds | >50 seconds |

The AM and PM weekday peak performance analysis of background traffic with existing conditions was performed for all of the intersections on the roadway network for the background scenarios in the year 2023, year 2028 and year 2040. For the background figures, potential improvements were shown in a separate figure. For the build-out figures, the improvements to the roadway that were made in previous scenarios (background or build-out) were assumed for the following build-out scenarios. The build out scenarios include the traffic anticipated to be generated from the site at all of the entrances. The Synchro outputs are included in the appendix of this study. The results of the background traffic analysis for the existing intersections are summarized below:

Background Year 2023 Analysis

- E. Alameda Avenue and S. Sable Boulevard: This signalized intersection is anticipated to operate at an overall LOS of B in the AM peak hour and a LOS of C in the PM peak hour. All of the individual movements are anticipated to operate at a LOS of D or better.
- E. Alameda Avenue and Crystal Street: This intersection is also a signalized intersection. The overall LOS for this intersection is anticipated to be an A in the AM peak hour and a B in the PM peak hour. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.

- Crystal Street and Internal Road 1: All of the individual movements at this unsignalized intersection are anticipated to operate at a LOS of B or better in both the AM and PM peak hour.
- Remaining Intersections: The remaining individual movements are anticipated to operate at a LOS of B or better in both peak hours.

The 2023 Background LOS and the corresponding delays are included in Figure 20.

Background Year 2028 Analysis

- E. Alameda Avenue and S. Sable Boulevard: Similar to the previous scenario, this signalized intersection is anticipated to operate at an overall LOS of B in the AM peak hour and a LOS of C in the PM peak hour. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.
- E. Alameda Avenue and Crystal Street: This intersection is anticipated to operate at a LOS of B in both peak hours. This is a slight decrease in the AM peak hour from the previous scenario. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.
- Crystal Street and Internal Road 1: Similar to the previous scenario, all of the individual movements at this unsignalized intersection are anticipated to operate at a LOS of B or better in both the AM and PM peak hour.
- Remaining Intersections: The remaining individual movements are anticipated to operate at a LOS of B or better in both peak hours, which is similar to the previous scenario.

The 2028 Background LOS and the corresponding delays are included in Figure 21.

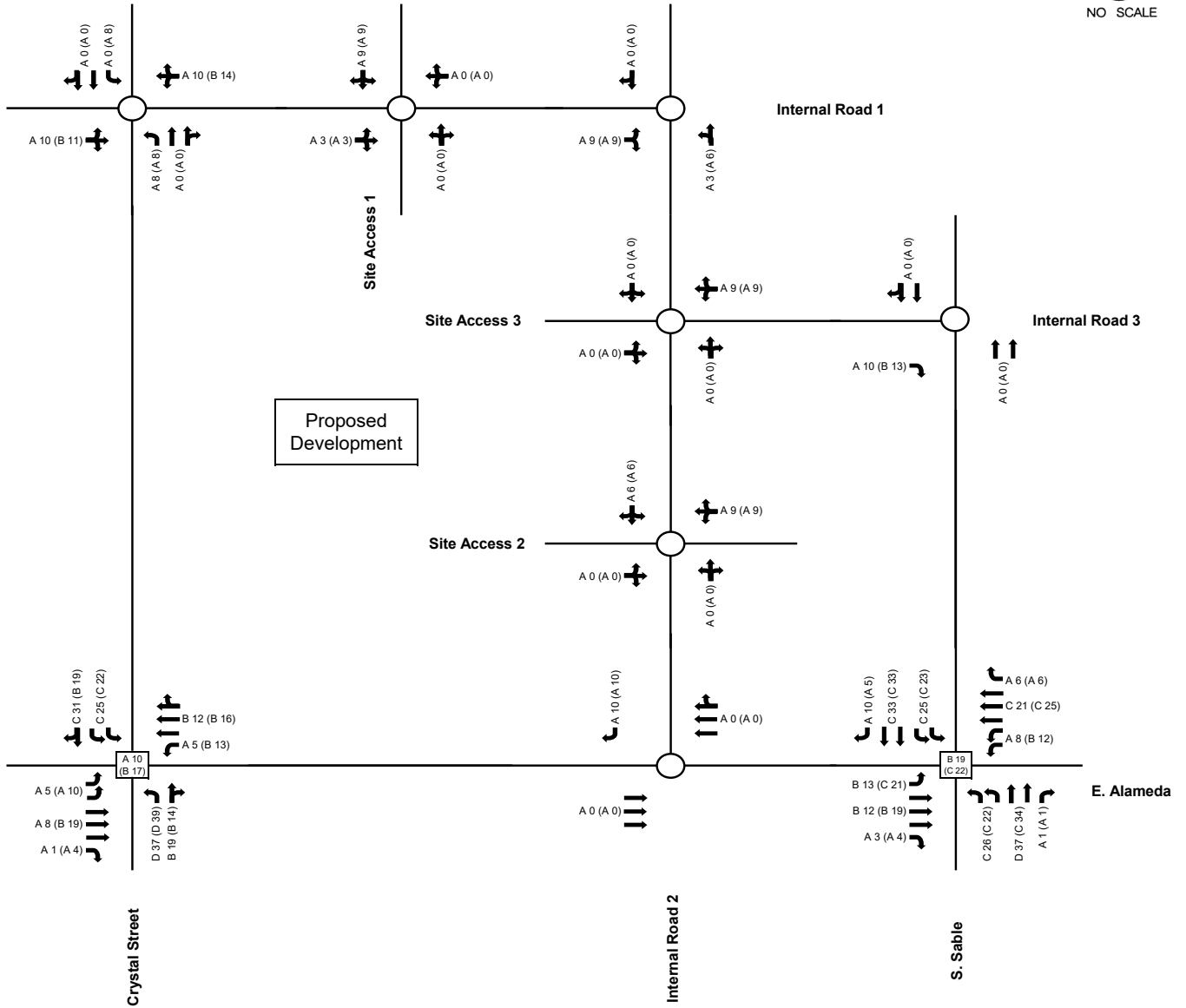
Background Year 2040 Analysis

- E. Alameda Avenue and S. Sable Boulevard: This signalized intersection is anticipated to operate at an overall LOS of C in both peak hours which is a

decrease in the AM peak hour from the previous 2028 background scenario. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.

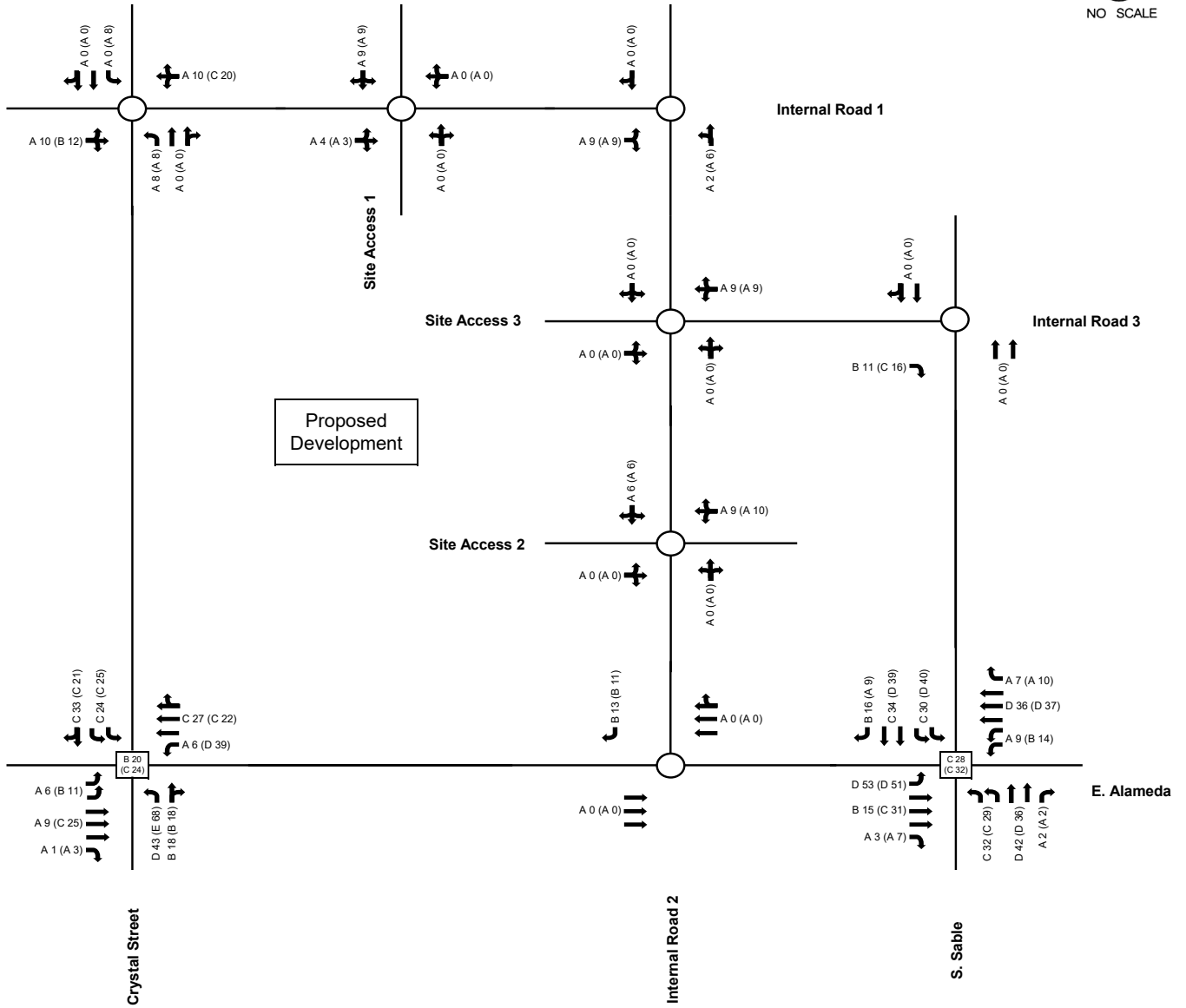
- E. Alameda Avenue and Crystal Street: The overall LOS for this intersection is anticipated to be a B in the AM peak hour and decrease to a LOS of C in the PM peak hour. All of the individual movements except for one are anticipated to operate at a LOS of D or better in both peak hours. The northbound left turning movement is anticipated to operate at a LOS of E in the PM peak hour.
- Crystal Street and Internal Road 1: All of the individual movements at this unsignalized intersection are anticipated to operate at a LOS of C or better in both the AM and PM peak hour. The westbound movement is anticipated to decrease in performance from the 2028 background scenario in the PM peak hour.
- Remaining Intersections: The remaining individual movements at both intersections are anticipated to operate at a LOS of C or better in both peak hours.

The 2040 Background LOS and the corresponding delays are included in Figure 22.



| LEGEND | | | |
|--------|---------------------------|-------------|---|
| | Unsignalized Intersection | B 12 (C 21) | Level of Service AM(PM), delay seconds |
| | Signalized Intersection | | Through Traffic Lane |
| | Future Intersection Leg | | Turning Traffic Lane (Right or Left Lane) |

FIGURE 20
2023 BACKGROUND PEAK HOUR
LEVEL OF SERVICE



LEGEND

| | | | |
|--|---------------------------|-------------|---|
| | Unsignalized Intersection | B 12 (C 21) | Level of Service AM(PM), delay seconds |
| | Signalized Intersection | | Through Traffic Lane |
| | Future Intersection Leg | | Turning Traffic Lane (Right or Left Lane) |

FIGURE 22
2040 BACKGROUND PEAK HOUR
LEVEL OF SERVICE

5.2 ***Build-out (2023, 2028 and 2040) Intersection Performance Analysis***

The analysis of the transportation impacts of the site on the surrounding roadway network is based on the distribution of the opening day site generated traffic onto the existing volumes as previously discussed. The procedure involved intersection capacity analysis for all intersections directly impacted by the proposed site. This analysis was performed for the design year of 2023, year 2028 and year 2040 scenarios. If there are any potential improvements to the intersections, the improvements were carried through to the following scenarios. The intersections were analyzed to determine intersection delay, LOS and vehicle queue lengths to determine blocking problems. Synchro was used to determine the anticipated delay, LOS and queue lengths at the intersections. See Appendix for Synchro outputs. Queuing and blocking issues are discussed in section 5.3 later on in the report.

Build-out Year 2023 Analysis

For this scenario, no improvements to the roadway were assumed.

- E. Alameda Avenue and S. Sable Boulevard: This signalized intersection is anticipated to operate at an overall LOS of B in the AM peak hour and a LOS of C in the PM peak hour, which is similar to the 2023 background scenario. All of the individual movements are anticipated to operate at a LOS of C or better in both peak hours.
- E. Alameda Avenue and Crystal Street: The overall LOS for this intersection is anticipated to be a B in both the AM and PM peak hour, which is similar to the 2023 background peak hour. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.
- Crystal Street and Internal Road 1: All of the individual movements at this unsignalized intersection are anticipated to operate at a LOS of C or better in both the AM and PM peak hour. The westbound movement is anticipated to decrease in performance in the PM peak hour from the 2023 build-out scenario.

- Remaining Intersections: The remaining individual movements at both intersections are anticipated to operate at a LOS of B or better in both peak hours.

The 2023 Build-out LOS and the corresponding delays are included in Figure 23.

Build-out Year 2028 Analysis

- E. Alameda Avenue and S. Sable Boulevard: This signalized intersection is anticipated to operate similarly to the background 2028 scenario. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.
- E. Alameda Avenue and Crystal Street: The overall LOS for this intersection is anticipated to be a B in both the AM and PM peak hour, which is similar to the 2028 background peak hour. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.
- Crystal Street and Internal Road 1: All of the individual movements at this unsignalized intersection are anticipated to operate at a LOS of C or better in both the AM and PM peak hour.
- Remaining Intersections: The remaining individual movements at both intersections are anticipated to operate at a LOS of B or better in both peak hours.

Figure 24 shows the 2028 Build-out LOS and the corresponding delays.

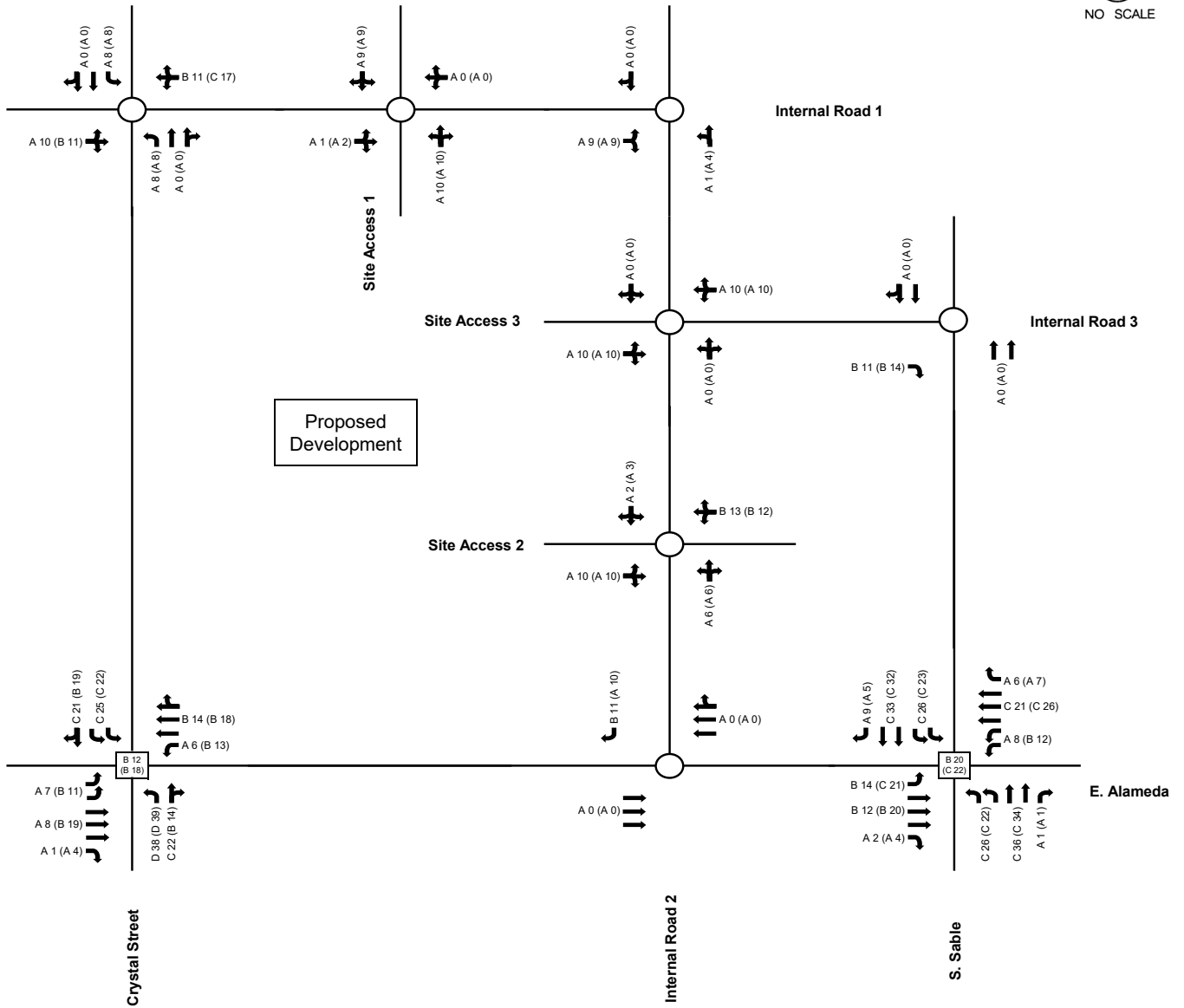
Build-out Year 2040 Analysis

- E. Alameda Avenue and S. Sable Boulevard: This signalized intersection is anticipated to operate at an overall LOS of C in both peak hours. This is very similar to the 2040 background scenario. All of the individual movements are anticipated to operate at a LOS of D or better in both peak hours.
- E. Alameda Avenue and Crystal Street: The overall LOS for this intersection is anticipated to be a C in both the AM and PM peak hour, which is a slight

decrease in performance in the AM peak hour from the 2040 background scenario. All of the individual movements except for one are anticipated to operate at a LOS of D or better in both peak hours. The northbound left turning movement is anticipated to operate at a LOS of E in the PM peak hour. This is similar to the 2040 background scenario.

- Crystal Street and Internal Road 1: All of the individual movements at this unsignalized intersection are anticipated to operate at a LOS of D or better in both the AM and PM peak hour. The westbound full movement is anticipated to decrease in performance to a LOS of D from a LOS of C in the 2040 background scenario.
- Remaining Intersections: The remaining individual movements at both intersections are anticipated to operate at a LOS of C or better in both peak hours.

Figure 25 shows the 2040 Build-out LOS and the corresponding delays.



| LEGEND | | |
|--------|---------------------------|--|
| | Unsignalized Intersection | B 12 (C 21) Level of Service AM(PM), delay seconds |
| | Signalized Intersection | Through Traffic Lane |
| | Future Intersection Leg | Turning Traffic Lane (Right or Left Lane) |

FIGURE 23
2023 BUILD-OUT PEAK HOUR
LEVEL OF SERVICE

5.3 **Queue Length Analysis**

Based on volumes used in the previous analysis, the anticipated vehicle queue lengths were determined using the Synchro Software. The purpose for this analysis is to determine if added trips create situations where turning vehicles queue up and block through traffic or if through lanes queues block entrances to the left-turn or right-turn storage bays for given signal operating parameters. Synchro only calculates the 95th percentile queues for unsignalized intersections, thus the 95th percentile queues were analyzed.

Although there are some movements where the queue is long, there appears to be one instance where a queue would be long enough to block an intersection. This is anticipated to occur in both the 2040 background and 2040 build-out scenarios. The longest calculated queue in the vicinity of the site is the westbound through movement at the intersection of Crystal Street and E. Alameda Avenue. This movement is anticipated to have a 95th percentile queue length of 700 feet in the 2040 PM background scenario and a 95th percentile queue length of 715 feet in the 2040 PM build-out scenario. The traffic from the site is only anticipated to increase the queue length by 15 feet in this scenario. The closest intersection to the east of this is the existing intersection of E. Alameda Avenue and Internal Road 2 which is a right in/right out intersection on the north side of the road approximately 340 feet east of the intersection. This intersection would be affected and would essentially back up to the intersection of E. Alameda Avenue and S. Sable Street, however, it would only be for a short period of time during the peak hour and is not caused by the additional QuikTrip traffic. There are also alternative routes to provide access to and from the site during this time.

The queue lengths for all background and build-out scenarios are shown in Figures 26 through Figure 31.

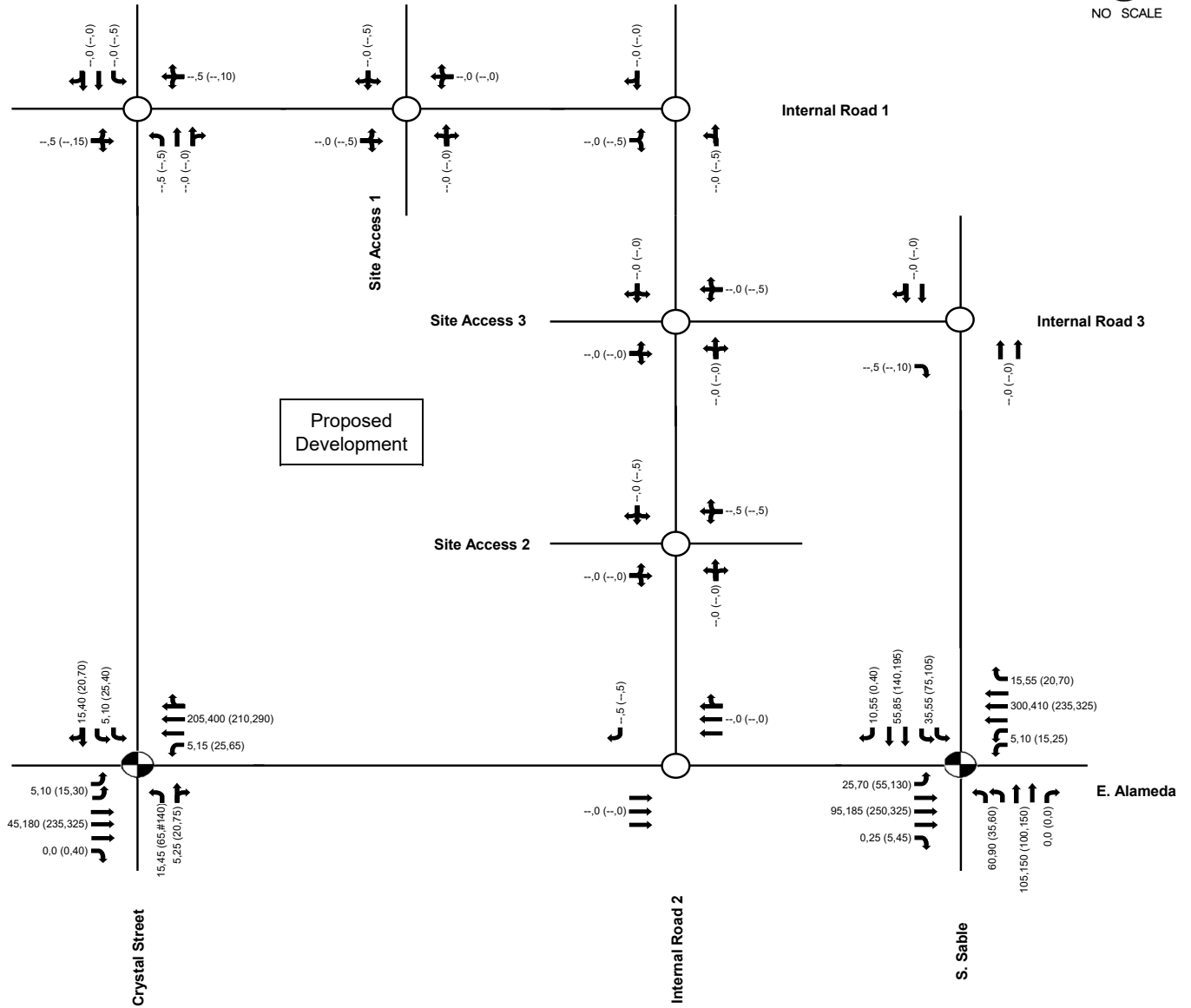
5.4 Turn Lane Warrants

Right turn lane warrants were checked at three intersections around the site. The intersection of E. Alameda Avenue and Crystal Street was checked for right turn lane warrants, and it is anticipated to be above the threshold for a westbound right turn lane in the 2023 background scenario, according to the CDOT State Highway Access Code. This turn lane is not necessarily warranted based on performance in any scenario as the intersection is anticipated to operate at a LOS C in both peak hours the 2040 build-out scenario. Right turn lane warrants were also checked at the right in/right out intersections of Internal Road 3 and S. Sable Boulevard along with Internal Road 2 and E. Alameda Avenue. Based off of the CDOT State Highway Access Code, both of these intersections are anticipated to be above the threshold for a right turn lane in the 2023 background scenario. As these movements are both free movements, both intersections are not anticipated to necessitate a right turn lane based off of performance. In addition to the performance, similar intersections of this type along these corridors do not appear to have right turn lanes.

5.5 Pedestrian Mobility

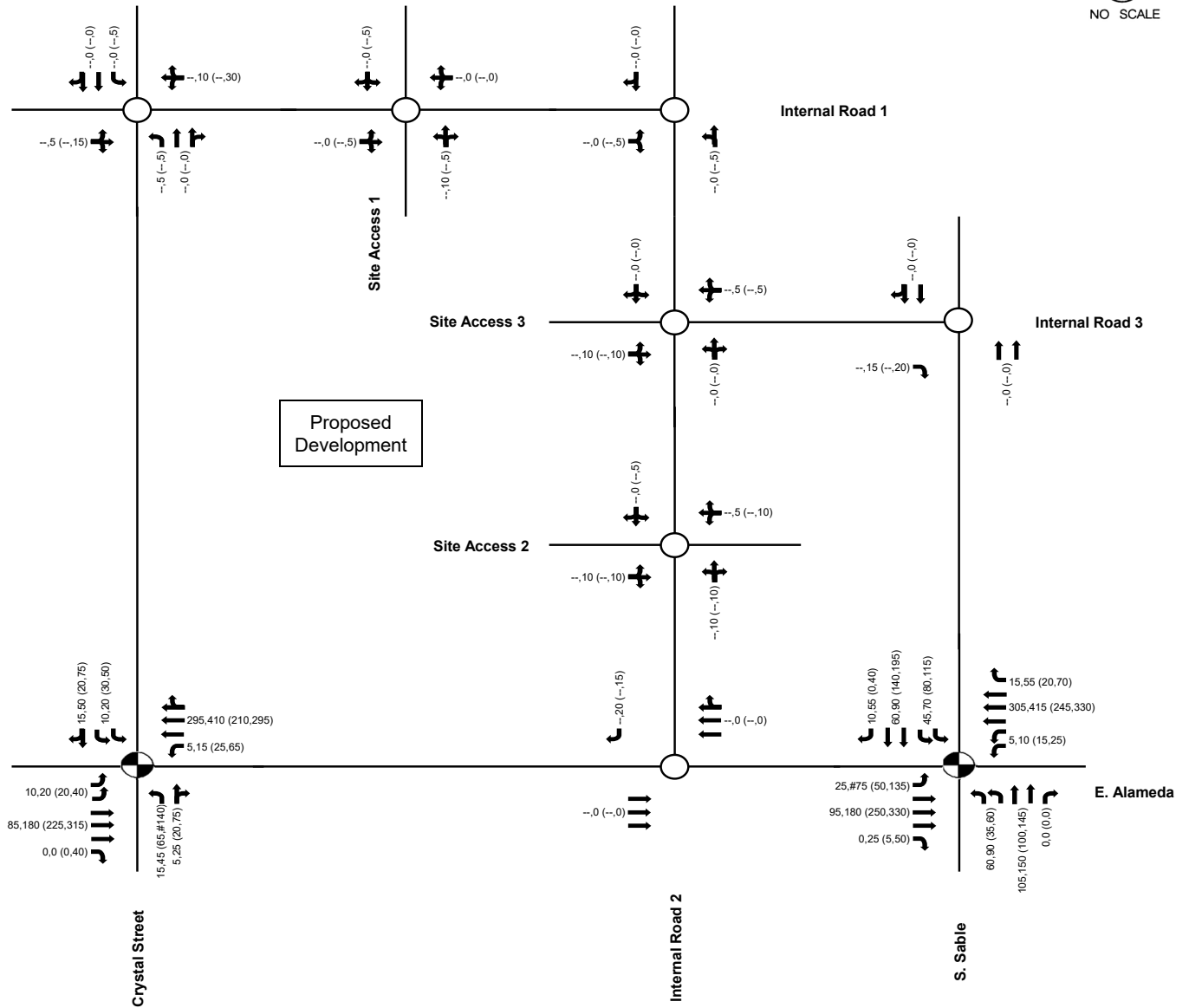
There is an existing 10-foot-wide sidewalk facility along E. Alameda Avenue. This sidewalk extends to the east to the S. Sable Boulevard Intersection and to the west to Interstate 225. There is a dedicated crossing and path from E. Alameda Avenue to provide access for pedestrians to the QuikTrip site. Along the west side of the site adjacent to Crystal Street, there is a 5-foot sidewalk that is offset 6 feet from the roadway. There is a bus stop near the site between Internal Road 2 and S. Sable Boulevard on the north side of the road. The bus stop on the south side of E. Alameda Avenue is located west of the Crystal Street intersection. There is also bus stops near the site located along S. Sable Boulevard just north of the E. Alameda Avenue intersection on the east side of the road. The southbound bus stop along S. Sable Boulevard is located just south of E. Alameda Avenue intersection. Both of the major intersections along E. Alameda Avenue, Crystal

Street and S. Sable Boulevard, have crosswalks on all four intersection legs. The nearest light rail stop is located along S. Sable Boulevard, south of E. Alameda Avenue on the east side of the road. Access to this station is provided through the sidewalk system along E. Alameda Avenue and S. Sable Boulevard.



| LEGEND | | |
|--------|---|---|
| | Unsignalized Intersection | 5,15 (25,55) Queue Length AM 50th,95th (PM 50th,95th) |
| | Signalized Intersection | Err: error |
| | Future Intersection Leg | #: 95th percentile volume exceeds capacity, queue may be longer |
| | Through Traffic Lane | m: Volume for 95th percentile queue is metered by upstream signal |
| | Turning Traffic Lane (Right or Left Lane) | ~: Volume exceeds capacity, queue is theoretically infinite |

FIGURE 27
2028 BACKGROUND PEAK HOUR
QUEUE LENGTHS



| LEGEND | | |
|---|---|--------------|
| | Unsignalized Intersection | 5,15 (25,55) |
| | Signalized Intersection | |
| | Future Intersection Leg | |
| | Through Traffic Lane | |
| | Turning Traffic Lane (Right or Left Lane) | |
| Queue Length AM 50th,95th (PM 50th,95th) Err: error #: 95th percentile volume exceeds capacity, queue may be longer m: Volume for 95th percentile queue is metered by upstream signal ~: Volume exceeds capacity, queue is theoretically infinite | | |

FIGURE 30
2028 BUILD-OUT PEAK HOUR
QUEUE LENGTHS

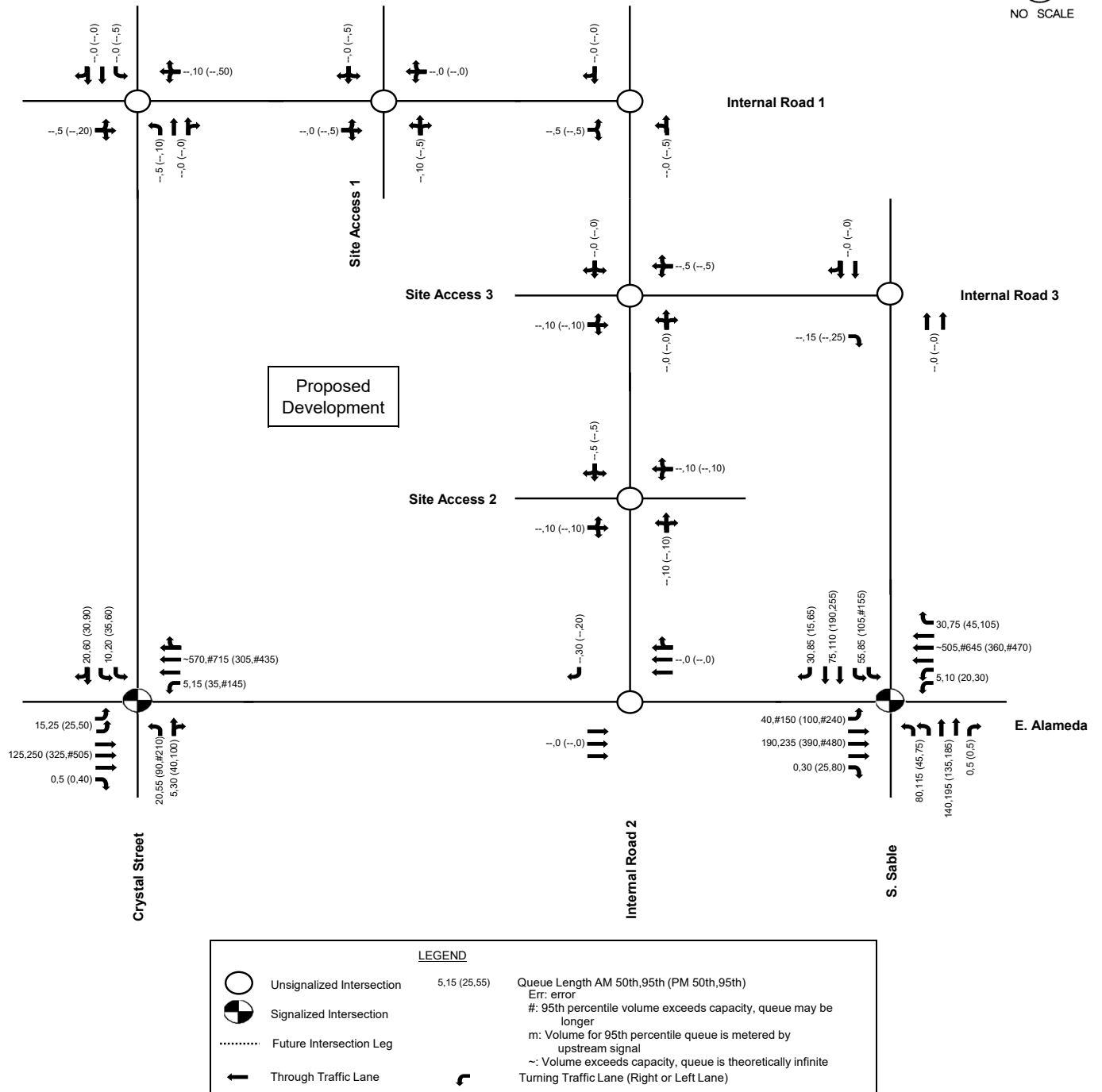


FIGURE 31
2040 BUILD-OUT PEAK HOUR
QUEUE LENGTHS

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

Following are the main conclusions and potential improvements:

- The site is anticipated to generate a total of 433 trips in the AM peak hour and 364 trips in the PM peak hour. In the AM peak hour, 216 vehicle trips will be entering the site and 217 trips exiting the site. For the PM peak hour, there will be 182 trips entering the site and 182 trips exiting the site. Approximately 25 percent of these trips are new trips to the roadway network with the remaining 75 percent of trips being pass-by trips.
- An annual growth rate of 2 percent was used around the site.
- Synchro analysis shows that the adjacent roadway system has the capacity to handle the additional QuikTrip traffic with minimal effect. When comparing the 2040 background scenario with the 2040 build-out scenario, the queue lengths are very similar with the additional site trips increasing the longest 95th percentile queue by only 10 feet in the year 2040 scenarios.
- According to the CDOT State Highway Access Code, there are three movements that are anticipated to be above the threshold for a right turn lane in various scenarios. However, these are not necessarily warranted based on performance. The intersection of E. Alameda Avenue and Crystal Street is anticipated to be above the threshold for a westbound right turn lane in the 2023 background scenario. In this same scenario, the intersection of E. Alameda Avenue and Internal Road 2 is also anticipated to be above the threshold for a westbound right turn lane. This is also the case for southbound right turn lane at the intersection of S. Sable Boulevard and Internal Road 3. However, none of these movements are anticipated to necessitate a right turn lane based on performance as all of the individual movements are anticipated to operate at a LOS of C or better in every scenario. In addition to the performance, similar right in/right out intersections along the corridors in the area do not have dedicated right turn lanes.
- There is only anticipated to be one queueing problem in the vicinity of the site and it is not anticipated to be caused by the additional QuikTrip traffic. The longest queue length is anticipated to occur in the 2040 scenario at the east leg of the

intersection of E. Alameda Avenue and Crystal Street. This 95th percentile queue is anticipated to be 700 feet in the 2040 PM background scenario. With the additional QuikTrip traffic, this 95th percentile queue is increased to 715 feet. This potentially backs up past the intersection of E. Alameda Avenue and S. Sable Boulevard but would only occur for a short period of time in the peak hour.

- This site has a dedicated path to the existing sidewalk along E. Alameda Avenue. There are bus stops located along E. Alameda Avenue along with S. Sable Boulevard. There is also a light rail station located along the east side of S. Sable Boulevard south of the E. Alameda Avenue intersection. With the addition of this path, access to the QuikTrip site is provided for the pedestrians, bus users and light rail users.



APPENDIX

DEFINITION OF LEVEL OF SERVICE

Signalized Intersection

Level of service for signalized intersections is defined in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Specifically, level-of-service criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period. Delay is a complex measure and is dependent on a number of variables.

Level of Service A - Describes operations with very low delay, i.e., less than 10.0 sec per vehicle. Progression is extremely favorable, and no approach phase is fully utilized. Most vehicles do not stop at all and no vehicle waits longer than one red indication.

Level of Service B - Describes operations with delay in the range of 10.1 to 20 sec per vehicle. This generally occurs with good progression. More vehicles stop than for LOS A, causing higher levels of average delay. An occasional phase is fully utilized.

Level of Service C - Describes operations with delay in the range of 20.1 to 35 sec per vehicle. These higher delays may result from fair progression. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping. Occasionally drivers may have to wait through more than one red signal indication.

Level of Service D - Describes operations with delay in the range of 35.1 to 55.0 sec per vehicle. At level D, the influence of congestion becomes more noticeable. Longer delays may result from unfavorable progression. Many vehicles stop, and the proportion of vehicles not stopping declines. Delays may be substantial during short peaks within the peak period.

Level of Service E - Describes operations with delay in the range of 55.1 to 80.0 sec per vehicle. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression. There may be long queues of vehicles waiting upstream of the intersection. Delays may be as much as several cycles.

Level of Service F - Describes operations with delay in excess of 80.1 sec per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over saturation, i.e., when arrival flow rates exceed the capacity of the intersection. Volumes are not predictable under these conditions.

Unsignalized Intersections

Unsignalized intersections base the level of service on the amount of delay experienced by vehicles turning out of or into the minor, stop sign controlled street. There are no agreed upon quantitative measures of levels of service for unsignalized intersections, but some qualitative measures are given below:

Level of Service A - Little or no delay to vehicles. A very high level of service usually found only in rural areas or during off-peak hours.

Level of Service B - Short delays to vehicles. Still a very good level of service.

Level of Service C - Average delays to vehicles. Waiting time becomes noticeable. Freedom to enter major street traffic is slightly restricted.

Level of Service D - Long delays to vehicles. Due to heavy volumes on the major street, vehicles on minor streets are restricted in their ability to enter the traffic stream.

Level of Service E - Very long delays to vehicles. Tolerable for short periods of time. If the level of service present for long period, the queue build-up on minor street becomes noticeable.

Level of Service F - Represents jammed conditions. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable.

TRAFFIC COUNTS



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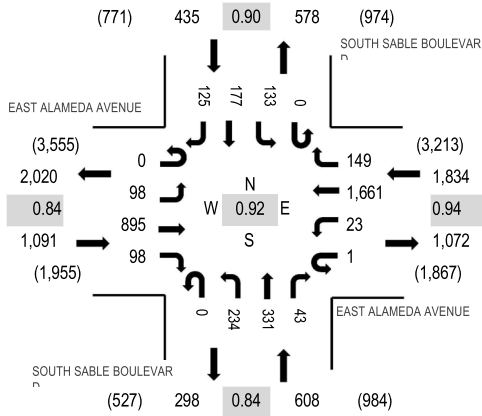
Location: 1 SOUTH SABLE BOULEVARD & EAST ALAMEDA AVENUE AM

Date: Tuesday, February 7, 2023

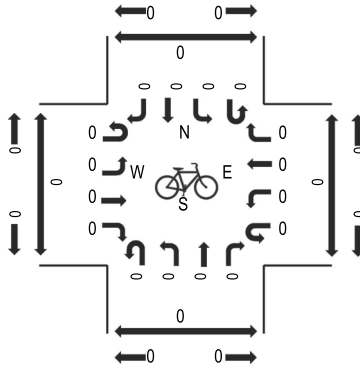
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

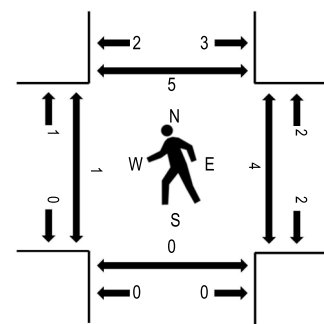
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST ALAMEDA AVENUE | | | | EAST ALAMEDA AVENUE | | | | SOUTH SABLE BOULEVARD | | | | SOUTH SABLE BOULEVARD | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|---------------------|------|-------|-------|---------------------|------|-------|-------|-----------------------|------|------|-------|-----------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | | West | East | South | North |
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | | | | |
| 7:00 AM | 1 | 28 | 171 | 12 | 1 | 1 | 333 | 19 | 0 | 50 | 51 | 7 | 0 | 22 | 29 | 17 | 742 | 3,728 | 1 | 0 | 0 | 0 |
| 7:15 AM | 0 | 16 | 203 | 26 | 0 | 5 | 374 | 29 | 0 | 48 | 78 | 9 | 0 | 32 | 29 | 37 | 886 | 3,968 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 29 | 208 | 21 | 0 | 6 | 439 | 35 | 0 | 65 | 102 | 15 | 0 | 26 | 48 | 29 | 1,023 | 3,890 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 26 | 277 | 22 | 0 | 6 | 402 | 50 | 0 | 80 | 93 | 8 | 0 | 38 | 46 | 29 | 1,077 | 3,627 | 0 | 0 | 0 | 1 |
| 8:00 AM | 0 | 27 | 207 | 29 | 1 | 6 | 446 | 35 | 0 | 41 | 58 | 11 | 0 | 37 | 54 | 30 | 982 | 3,195 | 1 | 4 | 0 | 2 |
| 8:15 AM | 0 | 30 | 184 | 26 | 0 | 6 | 353 | 17 | 0 | 34 | 65 | 3 | 0 | 21 | 35 | 34 | 808 | | 1 | 1 | 0 | 0 |
| 8:30 AM | 0 | 18 | 179 | 21 | 0 | 4 | 331 | 23 | 0 | 32 | 53 | 2 | 0 | 25 | 40 | 32 | 760 | | 5 | 0 | 3 | 0 |
| 8:45 AM | 1 | 19 | 157 | 17 | 0 | 4 | 264 | 23 | 0 | 28 | 49 | 2 | 1 | 21 | 34 | 25 | 645 | | 1 | 1 | 1 | 0 |
| Count Total | 2 | 193 | 1,586 | 174 | 2 | 38 | 2,942 | 231 | 0 | 378 | 549 | 57 | 1 | 222 | 315 | 233 | 6,923 | | 9 | 6 | 4 | 5 |
| Peak Hour | 0 | 98 | 895 | 98 | 1 | 23 | 1,661 | 149 | 0 | 234 | 331 | 43 | 0 | 133 | 177 | 125 | 3,968 | | 1 | 4 | 0 | 5 |



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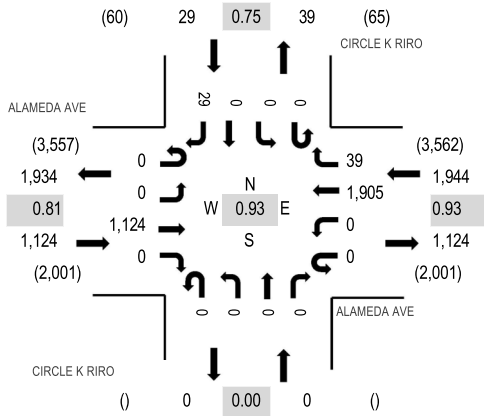
Location: 2 CIRCLE K RIRO & ALAMEDA AVE AM

Date: Tuesday, February 7, 2023

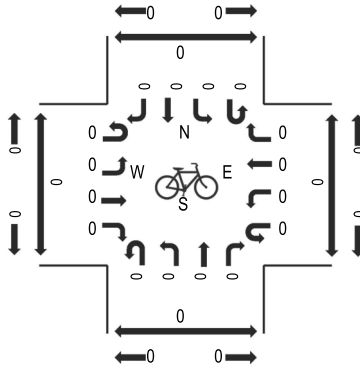
Peak Hour: 07:15 AM - 08:15 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

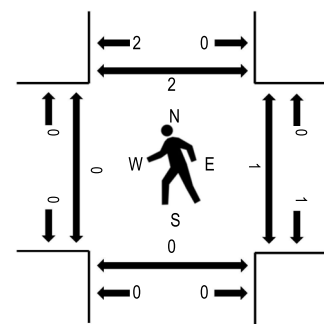
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | ALAMEDA AVE Eastbound | | | | ALAMEDA AVE Westbound | | | | CIRCLE K RIRO Northbound | | | | CIRCLE K RIRO Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|-------|-------|--------------------------|------|-------|-------|-----------------------------|------|------|-------|-----------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 219 | 0 | 0 | 0 | 336 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 570 | 2,914 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 235 | 0 | 0 | 0 | 438 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 691 | 3,097 | 0 | 0 | 0 | 1 |
| 7:30 AM | 0 | 0 | 293 | 0 | 0 | 0 | 514 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 822 | 3,089 | 0 | 0 | 0 | 1 |
| 7:45 AM | 0 | 0 | 348 | 0 | 0 | 0 | 465 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 831 | 2,873 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 248 | 0 | 0 | 0 | 488 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 753 | 2,709 | 0 | 1 | 0 | 0 |
| 8:15 AM | 0 | 0 | 238 | 0 | 0 | 0 | 429 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 683 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 205 | 0 | 0 | 0 | 393 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 606 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 215 | 0 | 0 | 0 | 434 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 667 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 2,001 | 0 | 0 | 0 | 3,497 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 5,623 | | 0 | 1 | 0 | 2 |
| Peak Hour | 0 | 0 | 1,124 | 0 | 0 | 0 | 1,905 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 3,097 | | 0 | 1 | 0 | 2 |



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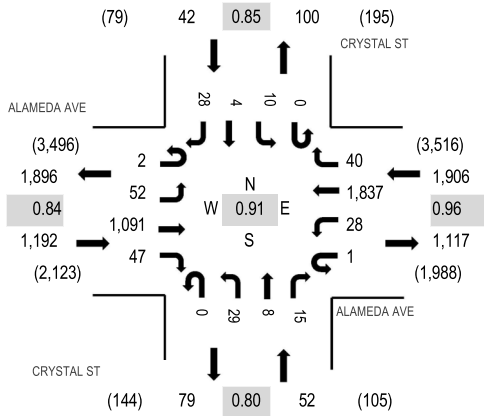
Location: 3 CRYSTAL ST & ALAMEDA AVE AM

Date: Tuesday, February 7, 2023

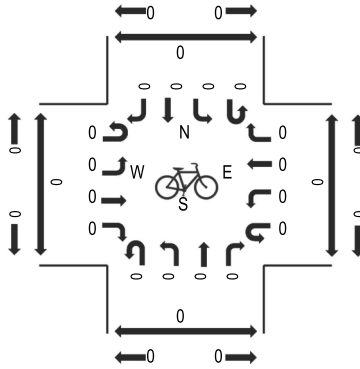
Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

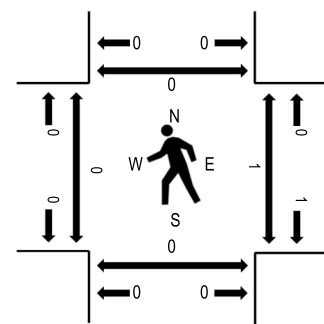
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | ALAMEDA AVE Eastbound | | | | ALAMEDA AVE Westbound | | | | CRYSTAL ST Northbound | | | | CRYSTAL ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|-------|-------|--------------------------|------|-------|-------|--------------------------|------|------|-------|--------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 7 | 203 | 5 | 0 | 2 | 346 | 7 | 0 | 10 | 1 | 5 | 0 | 3 | 0 | 4 | 593 | 3,001 | 1 | 0 | 0 | 1 |
| 7:15 AM | 1 | 11 | 238 | 9 | 0 | 1 | 424 | 8 | 0 | 3 | 1 | 2 | 0 | 1 | 0 | 1 | 700 | 3,180 | 1 | 0 | 0 | 0 |
| 7:30 AM | 0 | 10 | 300 | 9 | 0 | 5 | 471 | 13 | 0 | 7 | 1 | 4 | 0 | 2 | 1 | 5 | 828 | 3,192 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 16 | 329 | 19 | 1 | 8 | 476 | 10 | 0 | 8 | 0 | 2 | 0 | 2 | 1 | 8 | 880 | 3,011 | 0 | 0 | 0 | 0 |
| 8:00 AM | 1 | 18 | 253 | 7 | 0 | 8 | 449 | 7 | 0 | 9 | 2 | 4 | 0 | 3 | 1 | 10 | 772 | 2,822 | 0 | 0 | 0 | 0 |
| 8:15 AM | 1 | 8 | 209 | 12 | 0 | 7 | 441 | 10 | 0 | 5 | 5 | 5 | 0 | 3 | 1 | 5 | 712 | | 0 | 1 | 0 | 0 |
| 8:30 AM | 0 | 17 | 204 | 10 | 0 | 11 | 360 | 13 | 0 | 11 | 2 | 6 | 0 | 4 | 4 | 5 | 647 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 16 | 197 | 13 | 0 | 9 | 417 | 12 | 0 | 6 | 0 | 6 | 0 | 2 | 1 | 12 | 691 | | 0 | 0 | 0 | 0 |
| Count Total | 3 | 103 | 1,933 | 84 | 1 | 51 | 3,384 | 80 | 0 | 59 | 12 | 34 | 0 | 20 | 9 | 50 | 5,823 | | 2 | 1 | 0 | 1 |
| Peak Hour | 2 | 52 | 1,091 | 47 | 1 | 28 | 1,837 | 40 | 0 | 29 | 8 | 15 | 0 | 10 | 4 | 28 | 3,192 | | 0 | 1 | 0 | 0 |



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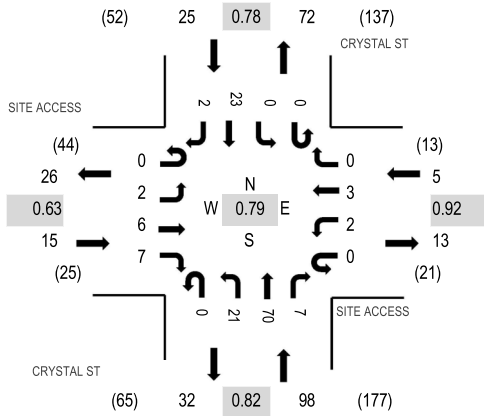
Location: 4 CRYSTAL ST & SITE ACCESS AM

Date: Tuesday, February 7, 2023

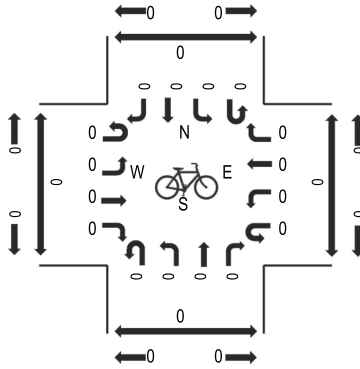
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

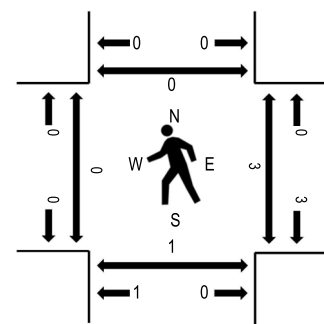
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | SITE ACCESS Eastbound | | | | SITE ACCESS Westbound | | | | CRYSTAL ST Northbound | | | | CRYSTAL ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|------|-------|--------------------------|------|------|-------|--------------------------|------|------|-------|--------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 0 | 0 | 0 | 6 | 0 | 22 | 124 | 1 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 21 | 1 | 0 | 0 | 6 | 0 | 35 | 133 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 11 | 1 | 0 | 0 | 8 | 1 | 29 | 132 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 4 | 21 | 1 | 0 | 0 | 5 | 1 | 38 | 136 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 15 | 1 | 0 | 0 | 6 | 1 | 31 | 143 | 0 | 1 | 1 | 0 |
| 8:15 AM | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 18 | 2 | 0 | 0 | 4 | 0 | 34 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 17 | 2 | 0 | 0 | 6 | 0 | 33 | | 0 | 2 | 0 | 0 |
| 8:45 AM | 0 | 0 | 3 | 3 | 0 | 0 | 1 | 0 | 0 | 8 | 20 | 2 | 0 | 0 | 7 | 1 | 45 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 2 | 11 | 12 | 0 | 5 | 6 | 2 | 0 | 34 | 133 | 10 | 0 | 0 | 48 | 4 | 267 | | 1 | 3 | 1 | 0 |
| Peak Hour | 0 | 2 | 6 | 7 | 0 | 2 | 3 | 0 | 0 | 21 | 70 | 7 | 0 | 0 | 23 | 2 | 143 | | 0 | 3 | 1 | 0 |



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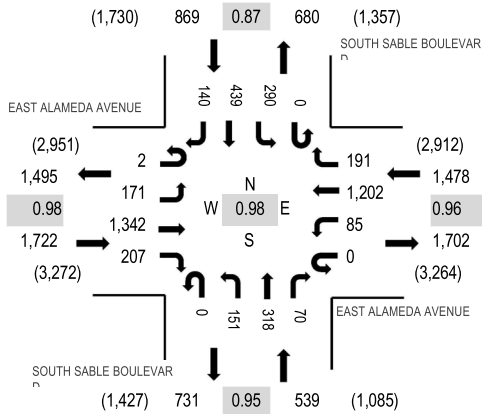
Location: 1 SOUTH SABLE BOULEVARD & EAST ALAMEDA AVENUE PM

Date: Tuesday, February 7, 2023

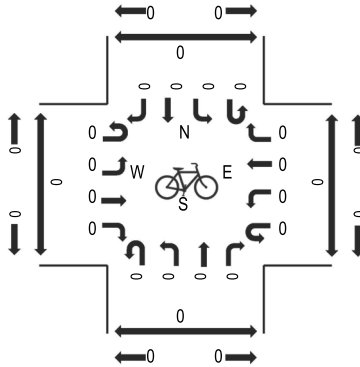
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:00 PM - 05:15 PM

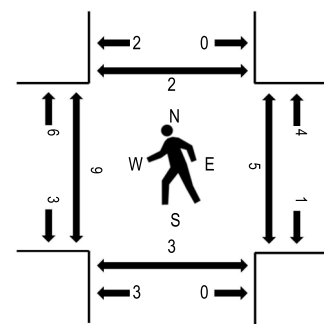
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | EAST ALAMEDA AVENUE | | | | EAST ALAMEDA AVENUE | | | | SOUTH SABLE BOULEVARD | | | | SOUTH SABLE BOULEVARD | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|---------------------|------|-------|-------|---------------------|------|-------|-------|-----------------------|------|------|-------|-----------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | | West | East | South | North |
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | | | | |
| 4:00 PM | 1 | 41 | 339 | 48 | 1 | 25 | 298 | 46 | 0 | 30 | 92 | 21 | 0 | 77 | 95 | 42 | 1,156 | 4,474 | 4 | 5 | 2 | 1 |
| 4:15 PM | 1 | 35 | 311 | 48 | 1 | 17 | 291 | 35 | 0 | 35 | 93 | 21 | 0 | 74 | 108 | 38 | 1,108 | 4,488 | 4 | 3 | 1 | 1 |
| 4:30 PM | 0 | 27 | 271 | 46 | 0 | 30 | 308 | 51 | 0 | 31 | 81 | 18 | 0 | 74 | 110 | 43 | 1,090 | 4,550 | 0 | 2 | 0 | 0 |
| 4:45 PM | 0 | 44 | 314 | 60 | 0 | 26 | 296 | 43 | 0 | 38 | 87 | 20 | 0 | 57 | 108 | 27 | 1,120 | 4,608 | 2 | 1 | 0 | 1 |
| 5:00 PM | 2 | 38 | 339 | 61 | 0 | 25 | 320 | 49 | 0 | 40 | 81 | 23 | 0 | 70 | 80 | 42 | 1,170 | 4,525 | 2 | 3 | 1 | 1 |
| 5:15 PM | 0 | 45 | 346 | 44 | 0 | 23 | 292 | 50 | 0 | 42 | 64 | 11 | 0 | 89 | 119 | 45 | 1,170 | | 5 | 0 | 2 | 0 |
| 5:30 PM | 0 | 44 | 343 | 42 | 0 | 11 | 294 | 49 | 0 | 31 | 86 | 16 | 0 | 74 | 132 | 26 | 1,148 | | 0 | 1 | 0 | 0 |
| 5:45 PM | 0 | 46 | 283 | 53 | 0 | 16 | 267 | 48 | 0 | 33 | 82 | 9 | 0 | 62 | 100 | 38 | 1,037 | | 1 | 0 | 1 | 1 |
| Count Total | 4 | 320 | 2,546 | 402 | 2 | 173 | 2,366 | 371 | 0 | 280 | 666 | 139 | 0 | 577 | 852 | 301 | 8,999 | | 18 | 15 | 7 | 5 |
| Peak Hour | 2 | 171 | 1,342 | 207 | 0 | 85 | 1,202 | 191 | 0 | 151 | 318 | 70 | 0 | 290 | 439 | 140 | 4,608 | | 9 | 5 | 3 | 2 |



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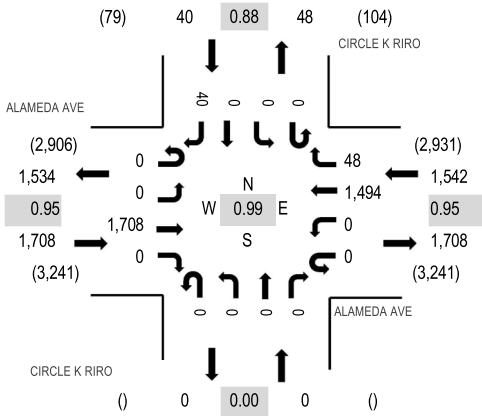
Location: 2 CIRCLE K RIRO & ALAMEDA AVE PM

Date: Tuesday, February 7, 2023

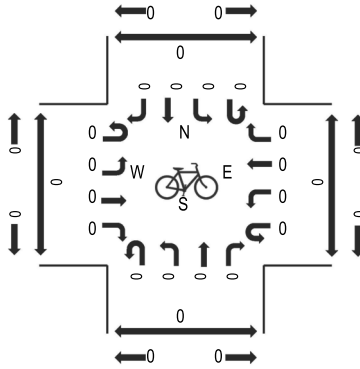
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

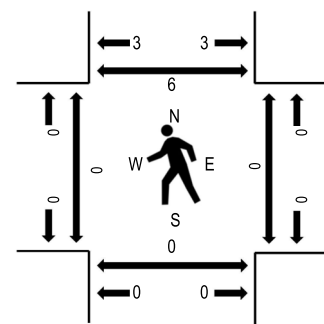
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | ALAMEDA AVE Eastbound | | | | ALAMEDA AVE Westbound | | | | CIRCLE K RIRO Northbound | | | | CIRCLE K RIRO Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|-------|-------|--------------------------|------|-------|-------|-----------------------------|------|------|-------|-----------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 0 | 353 | 0 | 0 | 0 | 371 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 749 | 3,162 | 0 | 0 | 0 | 1 |
| 4:15 PM | 0 | 0 | 399 | 0 | 0 | 0 | 352 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 780 | 3,235 | 0 | 0 | 0 | 6 |
| 4:30 PM | 0 | 0 | 406 | 0 | 0 | 0 | 389 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 825 | 3,290 | 0 | 0 | 0 | 1 |
| 4:45 PM | 0 | 0 | 416 | 0 | 0 | 0 | 370 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 808 | 3,189 | 0 | 0 | 0 | 4 |
| 5:00 PM | 0 | 0 | 448 | 0 | 0 | 0 | 358 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 822 | 3,089 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 438 | 0 | 0 | 0 | 377 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 835 | | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 397 | 0 | 0 | 0 | 304 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 724 | | 0 | 1 | 0 | 3 |
| 5:45 PM | 0 | 0 | 384 | 0 | 0 | 0 | 306 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 708 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 3,241 | 0 | 0 | 0 | 2,827 | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | 6,251 | | 0 | 1 | 0 | 16 |
| Peak Hour | 0 | 0 | 1,708 | 0 | 0 | 0 | 1,494 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 3,290 | | 0 | 0 | 0 | 6 |



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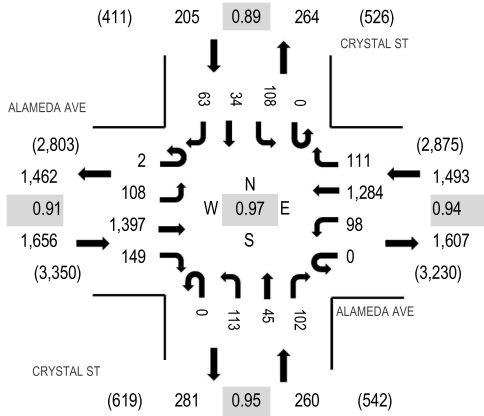
Location: 3 CRYSTAL ST & ALAMEDA AVE PM

Date: Tuesday, February 7, 2023

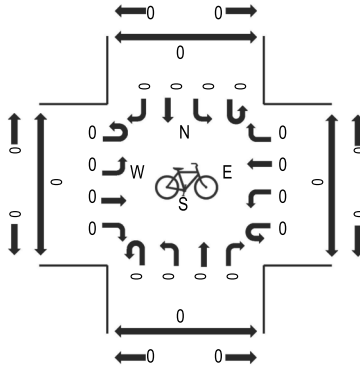
Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

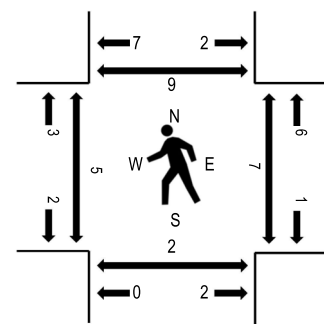
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

| Interval Start Time | ALAMEDA AVE Eastbound | | | | ALAMEDA AVE Westbound | | | | CRYSTAL ST Northbound | | | | CRYSTAL ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|-------|-------|--------------------------|------|-------|-------|--------------------------|------|------|-------|--------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 30 | 325 | 47 | 0 | 32 | 332 | 35 | 0 | 22 | 9 | 32 | 0 | 22 | 10 | 18 | 914 | 3,598 | 1 | 0 | 0 | 2 |
| 4:15 PM | 0 | 28 | 332 | 40 | 0 | 23 | 305 | 18 | 0 | 28 | 17 | 29 | 0 | 22 | 8 | 17 | 867 | 3,550 | 0 | 1 | 0 | 6 |
| 4:30 PM | 1 | 19 | 347 | 39 | 0 | 22 | 340 | 23 | 0 | 29 | 16 | 21 | 0 | 27 | 11 | 10 | 905 | 3,614 | 2 | 3 | 0 | 2 |
| 4:45 PM | 0 | 33 | 369 | 35 | 0 | 23 | 319 | 34 | 0 | 22 | 7 | 22 | 0 | 21 | 8 | 19 | 912 | 3,588 | 1 | 1 | 0 | 3 |
| 5:00 PM | 0 | 25 | 322 | 37 | 0 | 23 | 295 | 28 | 0 | 36 | 9 | 30 | 0 | 31 | 13 | 17 | 866 | 3,580 | 1 | 1 | 0 | 1 |
| 5:15 PM | 1 | 31 | 359 | 38 | 0 | 30 | 330 | 26 | 0 | 26 | 13 | 29 | 0 | 29 | 2 | 17 | 931 | | 1 | 2 | 2 | 3 |
| 5:30 PM | 0 | 27 | 350 | 46 | 0 | 32 | 276 | 23 | 0 | 30 | 8 | 31 | 0 | 20 | 9 | 27 | 879 | | 0 | 0 | 0 | 1 |
| 5:45 PM | 0 | 27 | 399 | 43 | 1 | 36 | 239 | 30 | 0 | 29 | 10 | 37 | 0 | 23 | 12 | 18 | 904 | | 1 | 0 | 0 | 0 |
| Count Total | 2 | 220 | 2,803 | 325 | 1 | 221 | 2,436 | 217 | 0 | 222 | 89 | 231 | 0 | 195 | 73 | 143 | 7,178 | | 7 | 8 | 2 | 18 |
| Peak Hour | 2 | 108 | 1,397 | 149 | 0 | 98 | 1,284 | 111 | 0 | 113 | 45 | 102 | 0 | 108 | 34 | 63 | 3,614 | | 5 | 7 | 2 | 9 |



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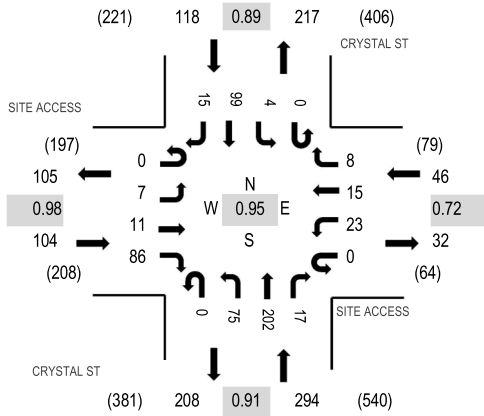
Location: 4 CRYSTAL ST & SITE ACCESS PM

Date: Tuesday, February 7, 2023

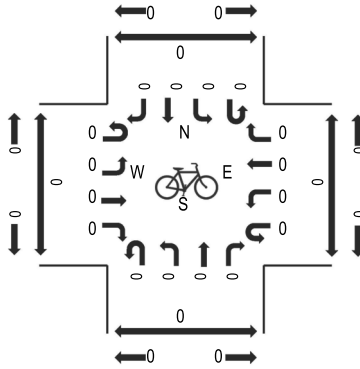
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

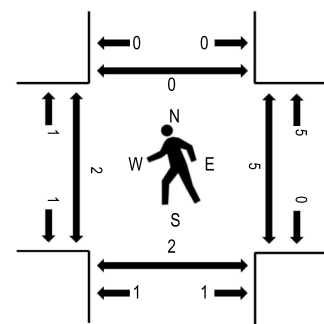
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles


































| Interval Start Time | SITE ACCESS Eastbound | | | | SITE ACCESS Westbound | | | | CRYSTAL ST Northbound | | | | CRYSTAL ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|------|-------|--------------------------|------|------|-------|--------------------------|------|------|-------|--------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 7 | 1 | 19 | 0 | 3 | 6 | 0 | 0 | 18 | 41 | 8 | 0 | 1 | 20 | 3 | 127 | 512 | 0 | 1 | 0 | 0 |
| 4:15 PM | 0 | 5 | 5 | 18 | 0 | 2 | 7 | 1 | 0 | 15 | 34 | 4 | 0 | 1 | 16 | 8 | 116 | 530 | 1 | 0 | 0 | 0 |
| 4:30 PM | 0 | 1 | 4 | 22 | 0 | 2 | 3 | 1 | 0 | 8 | 48 | 2 | 0 | 0 | 27 | 3 | 121 | 554 | 0 | 1 | 0 | 0 |
| 4:45 PM | 0 | 0 | 6 | 22 | 0 | 5 | 1 | 3 | 0 | 24 | 52 | 5 | 0 | 1 | 24 | 5 | 148 | 562 | 0 | 1 | 1 | 0 |
| 5:00 PM | 0 | 1 | 0 | 16 | 0 | 7 | 7 | 2 | 0 | 15 | 59 | 4 | 0 | 3 | 27 | 4 | 145 | 536 | 2 | 0 | 1 | 0 |
| 5:15 PM | 0 | 3 | 1 | 27 | 0 | 9 | 2 | 3 | 0 | 20 | 45 | 3 | 0 | 0 | 24 | 3 | 140 | | 0 | 3 | 0 | 0 |
| 5:30 PM | 0 | 3 | 4 | 21 | 0 | 2 | 5 | 0 | 0 | 16 | 46 | 5 | 0 | 0 | 24 | 3 | 129 | | 0 | 1 | 0 | 0 |
| 5:45 PM | 0 | 2 | 0 | 20 | 0 | 4 | 3 | 1 | 0 | 15 | 48 | 5 | 0 | 1 | 20 | 3 | 122 | | 0 | 1 | 0 | 0 |
| Count Total | 0 | 22 | 21 | 165 | 0 | 34 | 34 | 11 | 0 | 131 | 373 | 36 | 0 | 7 | 182 | 32 | 1,048 | | 3 | 8 | 2 | 0 |
| Peak Hour | 0 | 7 | 11 | 86 | 0 | 23 | 15 | 8 | 0 | 75 | 202 | 17 | 0 | 4 | 99 | 15 | 562 | | 2 | 5 | 2 | 0 |

SYNCHRO

2023 AM PEAK HOUR BACKGROUND

Lanes, Volumes, Timings
1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 98 | 895 | 98 | 23 | 1599 | 149 | 225 | 331 | 43 | 133 | 177 | 120 |
| Future Volume (vph) | 98 | 895 | 98 | 23 | 1599 | 149 | 225 | 331 | 43 | 133 | 177 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.094 | | | 0.280 | | | 0.612 | | | 0.411 | | |
| Satd. Flow (perm) | 175 | 5085 | 1583 | 1012 | 5085 | 1583 | 2212 | 3539 | 1583 | 1485 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | | 127 | | | 127 | | | 130 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 107 | 973 | 107 | 25 | 1738 | 162 | 245 | 360 | 47 | 145 | 192 | 130 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 107 | 973 | 107 | 25 | 1738 | 162 | 245 | 360 | 47 | 145 | 192 | 130 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 13.6 | 47.9 | 47.9 | 9.5 | 43.8 | 43.8 | 10.0 | 23.0 | 23.0 | 9.6 | 22.6 | 22.6 |
| Total Split (%) | 15.1% | 53.2% | 53.2% | 10.6% | 48.7% | 48.7% | 11.1% | 25.6% | 25.6% | 10.7% | 25.1% | 25.1% |
| Maximum Green (s) | 9.1 | 43.4 | 43.4 | 5.0 | 39.3 | 39.3 | 5.5 | 18.5 | 18.5 | 5.1 | 18.1 | 18.1 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 46.1 | 42.9 | 42.9 | 40.1 | 36.4 | 36.4 | 19.3 | 13.6 | 13.6 | 18.5 | 13.2 | 13.2 |
| Actuated g/C Ratio | 0.58 | 0.54 | 0.54 | 0.51 | 0.46 | 0.46 | 0.24 | 0.17 | 0.17 | 0.23 | 0.17 | 0.17 |
| v/c Ratio | 0.39 | 0.35 | 0.12 | 0.04 | 0.74 | 0.20 | 0.39 | 0.59 | 0.12 | 0.30 | 0.33 | 0.35 |
| Control Delay | 12.8 | 11.4 | 2.2 | 7.6 | 20.9 | 5.3 | 25.4 | 36.1 | 0.7 | 24.6 | 32.5 | 9.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 12.8 | 11.4 | 2.2 | 7.6 | 20.9 | 5.3 | 25.4 | 36.1 | 0.7 | 24.6 | 32.5 | 9.1 |
| LOS | B | B | A | A | C | A | C | D | A | C | C | A |
| Approach Delay | | 10.7 | | | 19.4 | | | 29.5 | | | 23.5 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 21 | 80 | 0 | 2 | 267 | 10 | 53 | 95 | 0 | 30 | 48 | 0 |
| Queue Length 95th (ft) | 54 | 156 | 20 | 7 | 361 | 47 | 82 | 139 | 0 | 52 | 79 | 46 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 292 | 3102 | 1015 | 671 | 2623 | 878 | 627 | 859 | 480 | 476 | 840 | 475 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.37 | 0.31 | 0.11 | 0.04 | 0.66 | 0.18 | 0.39 | 0.42 | 0.10 | 0.30 | 0.23 | 0.27 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 79.2

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.0









Intersection LOS: B

Intersection Capacity Utilization 64.6%

ICU Level of Service C























Analysis Period (min) 15

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 23 s | 9.5 s | 47.9 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 10 s | 22.6 s | 13.6 s | 43.8 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 55 | 1120 | 44 | 22 | 1873 | 39 | 27 | 4 | 12 | 8 | 24 | 3 |
| Future Volume (vph) | 55 | 1120 | 44 | 22 | 1873 | 39 | 27 | 4 | 12 | 8 | 24 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | 0.885 | | | 0.984 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5070 | 0 | 1770 | 1649 | 0 | 3433 | 1833 | 0 |
| Flt Permitted | 0.097 | | | 0.196 | | | 0.950 | | | 0.746 | | |
| Satd. Flow (perm) | 351 | 5085 | 1583 | 365 | 5070 | 0 | 1770 | 1649 | 0 | 2696 | 1833 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | 4 | | | 13 | | | 3 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 60 | 1217 | 48 | 24 | 2036 | 42 | 29 | 4 | 13 | 9 | 26 | 3 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 60 | 1217 | 48 | 24 | 2078 | 0 | 29 | 17 | 0 | 9 | 29 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 47.0 | 47.0 | 9.6 | 47.0 | | 9.8 | 23.8 | | 9.6 | 23.6 | |
| Total Split (%) | 10.7% | 52.2% | 52.2% | 10.7% | 52.2% | | 10.9% | 26.4% | | 10.7% | 26.2% | |
| Maximum Green (s) | 5.1 | 42.5 | 42.5 | 5.1 | 42.5 | | 5.3 | 19.3 | | 5.1 | 19.1 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 42.9 | 41.3 | 41.3 | 42.1 | 39.5 | | 5.6 | 8.5 | | 8.5 | 6.8 | |
| Actuated g/C Ratio | 0.67 | 0.65 | 0.65 | 0.66 | 0.62 | | 0.09 | 0.13 | | 0.13 | 0.11 | |
| v/c Ratio | 0.12 | 0.37 | 0.05 | 0.07 | 0.66 | | 0.19 | 0.07 | | 0.02 | 0.15 | |
| Control Delay | 4.5 | 7.3 | 0.1 | 4.6 | 11.1 | | 36.6 | 18.9 | | 24.6 | 31.0 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 4.5 | 7.3 | 0.1 | 4.6 | 11.1 | | 36.6 | 18.9 | | 24.6 | 31.0 | |
| LOS | A | A | A | A | B | | D | B | | C | C | |
| Approach Delay | | 6.9 | | | 11.0 | | | 30.0 | | | 29.5 | |
| Approach LOS | | A | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 2 | 38 | 0 | 2 | 170 | | 12 | 2 | | 1 | 10 | |
| Queue Length 95th (ft) | 10 | 158 | 0 | 11 | 336 | | 40 | 20 | | 7 | 36 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 496 | 3700 | 1186 | 359 | 3546 | | 155 | 538 | | 420 | 584 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.12 | 0.33 | 0.04 | 0.07 | 0.59 | | 0.19 | 0.03 | | 0.02 | 0.05 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 64

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 9.9









Intersection LOS: A

Intersection Capacity Utilization 52.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.6 s | 23.8 s | 9.6 s | 47 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 9.8 s | 23.6 s | 9.6 s | 47 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Access 3

10/05/2023



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations | | ↗ | | ↕ | ↕ | |
| Traffic Volume (veh/h) | 0 | 25 | 0 | 578 | 405 | 25 |
| Future Volume (Veh/h) | 0 | 25 | 0 | 578 | 405 | 25 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 27 | 0 | 628 | 440 | 27 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.91 | | | | | |
| vC, conflicting volume | 768 | 234 | 467 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 546 | 234 | 467 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 96 | 100 | | | |
| cM capacity (veh/h) | 426 | 768 | 1091 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 27 | 314 | 314 | 293 | 174 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 27 | 0 | 0 | 0 | 27 | |
| cSH | 768 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.04 | 0.18 | 0.18 | 0.17 | 0.10 | |
| Queue Length 95th (ft) | 3 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 9.9 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | | | | | | |
| Approach Delay (s) | 9.9 | 0.0 | | 0.0 | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.2 | | | |
| Intersection Capacity Utilization | | | 22.0% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1124 | 1905 | 39 | 0 | 29 | |
| Future Volume (Veh/h) | 0 | 1124 | 1905 | 39 | 0 | 29 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 1222 | 2071 | 42 | 0 | 32 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.70 | | | | 0.76 | 0.70 | |
| vC, conflicting volume | 2113 | | | | 2499 | 711 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 1083 | | | | 763 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 96 | |
| cM capacity (veh/h) | 447 | | | | 259 | 757 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 407 | 407 | 407 | 828 | 828 | 456 | 32 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 42 | 32 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 757 |
| Volume to Capacity | 0.24 | 0.24 | 0.24 | 0.49 | 0.49 | 0.27 | 0.04 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.0 |
| Lane LOS | | | | | | | A |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 10.0 |
| Approach LOS | | | | | | | A |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.1 | | | | |
| Intersection Capacity Utilization | | | 47.7% | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 27 | 0 | 1 | 0 | 2 | 37 | 7 | 2 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 27 | 0 | 1 | 0 | 2 | 37 | 7 | 2 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 29 | 0 | 1 | 0 | 2 | 40 | 8 | 2 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 41 | 60 | 2 | 40 | 40 | 22 | 2 | | | | 42 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 41 | 60 | 2 | 40 | 40 | 22 | 2 | | | | 42 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 97 | 100 | 100 | 100 | | | | 99 | |
| cM capacity (veh/h) | 958 | 827 | 1082 | 960 | 848 | 1055 | 1620 | | | | 1567 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 30 | 42 | 10 | | | | | | | | |
| Volume Left | 0 | 29 | 0 | 8 | | | | | | | | |
| Volume Right | 0 | 1 | 40 | 0 | | | | | | | | |
| cSH | 1700 | 963 | 1620 | 1567 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.03 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 2 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.9 | 0.0 | 5.9 | | | | | | | | |
| Lane LOS | A | A | | A | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.9 | 0.0 | 5.9 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.0 | | | | | | | | |
| Intersection Capacity Utilization | | | | 16.2% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 1 | 5 | 4 | 4 | 5 | 2 | 14 | 79 | 5 | 0 | 27 | 3 |
| Future Volume (Veh/h) | 1 | 5 | 4 | 4 | 5 | 2 | 14 | 79 | 5 | 0 | 27 | 3 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 1 | 5 | 4 | 4 | 5 | 2 | 15 | 86 | 5 | 0 | 29 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 340 | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 108 | 152 | 16 | 140 | 150 | 46 | 32 | | | 91 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 108 | 152 | 16 | 140 | 150 | 46 | 32 | | | 91 | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 99 | 100 | 100 | 99 | 100 | 99 | | | 100 | | |
| cM capacity (veh/h) | 847 | 732 | 1059 | 804 | 733 | 1014 | 1579 | | | 1502 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 10 | 11 | 15 | 57 | 34 | 0 | 19 | 13 | | | | |
| Volume Left | 1 | 4 | 15 | 0 | 0 | 0 | 0 | 0 | | | | |
| Volume Right | 4 | 2 | 0 | 0 | 5 | 0 | 0 | 3 | | | | |
| cSH | 848 | 799 | 1579 | 1700 | 1700 | 1700 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.01 | 0.01 | 0.01 | 0.03 | 0.02 | 0.00 | 0.01 | 0.01 | | | | |
| Queue Length 95th (ft) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 9.3 | 9.6 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Lane LOS | A | A | A | | | | | | | | | |
| Approach Delay (s) | 9.3 | 9.6 | 1.0 | | | 0.0 | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 1.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 17.4% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

















12: Site Access 1 & Internal Road 1

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 4 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 4 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 8 | | | 7 | | | 27 | 23 | 7 | 23 | 23 | 8 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 8 | | | 7 | | | 27 | 23 | 7 | 23 | 23 | 8 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 100 |
| cM capacity (veh/h) | 1612 | | | 1614 | | | 977 | 868 | 1075 | 987 | 868 | 1074 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 11 | 8 | 0 | 4 | | | | | | | | |
| Volume Left | 4 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 0 | 0 | 4 | | | | | | | | |
| cSH | 1612 | 1614 | 1700 | 1074 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 2.6 | 0.0 | 0.0 | 8.4 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 2.6 | 0.0 | 0.0 | 8.4 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 2.7 | | | | | | | | |
| Intersection Capacity Utilization | | | | 13.9% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis 17: Internal Road 2 & Site Access 3/Internal Road 3

10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 9 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 9 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 10 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 17 | 13 | 10 | 13 | 13 | 3 | 10 | | | | 3 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 17 | 13 | 10 | 13 | 13 | 3 | 10 | | | | 3 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | | | | 100 | |
| cM capacity (veh/h) | 994 | 881 | 1071 | 1004 | 881 | 1081 | 1610 | | | | 1619 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 4 | 3 | 10 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 4 | 0 | 0 | | | | | | | | |
| cSH | 1700 | 1081 | 1610 | 1619 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.3 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.3 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 2.0 | | | | | | | | |
| Intersection Capacity Utilization | | | | 13.3% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023



























| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 2 | 4 | 2 | 5 | 5 | 5 |
| Future Volume (Veh/h) | 2 | 4 | 2 | 5 | 5 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 4 | 2 | 5 | 5 | 5 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 16 | 8 | 10 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 16 | 8 | 10 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 1000 | 1075 | 1610 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 6 | 7 | 10 | | | |
| Volume Left | 2 | 2 | 0 | | | |
| Volume Right | 4 | 0 | 5 | | | |
| cSH | 1049 | 1610 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | | | |
| Control Delay (s) | 8.5 | 2.1 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.5 | 2.1 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 2.8 | | | |
| Intersection Capacity Utilization | | | 13.3% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2023 PM PEAK HOUR BACKGROUND

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 171 | 1342 | 207 | 85 | 1170 | 191 | 147 | 318 | 70 | 290 | 439 | 136 |
| Future Volume (vph) | 171 | 1342 | 207 | 85 | 1170 | 191 | 147 | 318 | 70 | 290 | 439 | 136 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.117 | | | 0.135 | | | 0.387 | | | 0.355 | | |
| Satd. Flow (perm) | 218 | 5085 | 1583 | 488 | 5085 | 1583 | 1399 | 3539 | 1583 | 1283 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 225 | | | 182 | | | 182 | | | 182 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 186 | 1459 | 225 | 92 | 1272 | 208 | 160 | 346 | 76 | 315 | 477 | 148 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 186 | 1459 | 225 | 92 | 1272 | 208 | 160 | 346 | 76 | 315 | 477 | 148 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 18.4 | 43.8 | 43.8 | 9.6 | 35.0 | 35.0 | 9.6 | 24.0 | 24.0 | 12.6 | 27.0 | 27.0 |
| Total Split (%) | 20.4% | 48.7% | 48.7% | 10.7% | 38.9% | 38.9% | 10.7% | 26.7% | 26.7% | 14.0% | 30.0% | 30.0% |
| Maximum Green (s) | 13.9 | 39.3 | 39.3 | 5.1 | 30.5 | 30.5 | 5.1 | 19.5 | 19.5 | 8.1 | 22.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 43.1 | 35.9 | 35.9 | 33.7 | 28.5 | 28.5 | 19.3 | 14.1 | 14.1 | 25.2 | 17.1 | 17.1 |
| Actuated g/C Ratio | 0.54 | 0.45 | 0.45 | 0.42 | 0.36 | 0.36 | 0.24 | 0.18 | 0.18 | 0.32 | 0.22 | 0.22 |
| v/c Ratio | 0.58 | 0.63 | 0.27 | 0.23 | 0.70 | 0.30 | 0.34 | 0.55 | 0.18 | 0.50 | 0.63 | 0.31 |
| Control Delay | 20.1 | 19.0 | 3.2 | 11.3 | 24.7 | 6.0 | 21.6 | 33.9 | 0.9 | 22.9 | 32.8 | 4.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.1 | 19.0 | 3.2 | 11.3 | 24.7 | 6.0 | 21.6 | 33.9 | 0.9 | 22.9 | 32.8 | 4.3 |
| LOS | C | B | A | B | C | A | C | C | A | C | C | A |
| Approach Delay | | 17.2 | | | 21.4 | | | 26.2 | | | 25.0 | |
| Approach LOS | | B | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 43 | 205 | 0 | 10 | 191 | 8 | 29 | 86 | 0 | 61 | 118 | 0 |
| Queue Length 95th (ft) | 109 | 282 | 40 | 22 | 284 | 57 | 53 | 133 | 0 | 96 | 173 | 29 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 396 | 2566 | 910 | 399 | 2035 | 742 | 473 | 886 | 532 | 633 | 1022 | 587 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.47 | 0.57 | 0.25 | 0.23 | 0.63 | 0.28 | 0.34 | 0.39 | 0.14 | 0.50 | 0.47 | 0.25 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 79.3

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 21.1









Intersection LOS: C

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15






















Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 12.6 s | 24 s | 9.6 s | 43.8 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 27 s | 18.4 s | 35 s |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 116 | 1400 | 156 | 108 | 1226 | 112 | 114 | 37 | 112 | 101 | 32 | 80 |
| Future Volume (vph) | 116 | 1400 | 156 | 108 | 1226 | 112 | 114 | 37 | 112 | 101 | 32 | 80 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.987 | | | 0.887 | | | 0.893 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5019 | 0 | 1770 | 1652 | 0 | 3433 | 1663 | 0 |
| Flt Permitted | 0.126 | | | 0.120 | | | 0.950 | | | 0.654 | | |
| Satd. Flow (perm) | 455 | 5085 | 1583 | 224 | 5019 | 0 | 1770 | 1652 | 0 | 2363 | 1663 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 182 | | 20 | | | 122 | | | 87 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 126 | 1522 | 170 | 117 | 1333 | 122 | 124 | 40 | 122 | 110 | 35 | 87 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 126 | 1522 | 170 | 117 | 1455 | 0 | 124 | 162 | 0 | 110 | 122 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 38.0 | 38.0 | 12.0 | 40.4 | | 16.0 | 30.5 | | 9.5 | 24.0 | |
| Total Split (%) | 10.7% | 42.2% | 42.2% | 13.3% | 44.9% | | 17.8% | 33.9% | | 10.6% | 26.7% | |
| Maximum Green (s) | 5.1 | 33.5 | 33.5 | 7.5 | 35.9 | | 11.5 | 26.0 | | 5.0 | 19.5 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 35.3 | 31.7 | 31.7 | 38.5 | 33.2 | | 10.1 | 12.0 | | 11.6 | 8.0 | |
| Actuated g/C Ratio | 0.51 | 0.46 | 0.46 | 0.56 | 0.48 | | 0.15 | 0.17 | | 0.17 | 0.12 | |
| v/c Ratio | 0.26 | 0.65 | 0.21 | 0.40 | 0.60 | | 0.48 | 0.42 | | 0.23 | 0.45 | |
| Control Delay | 9.4 | 18.3 | 3.1 | 12.2 | 15.9 | | 38.3 | 13.2 | | 21.2 | 18.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.4 | 18.3 | 3.1 | 12.2 | 15.9 | | 38.3 | 13.2 | | 21.2 | 18.9 | |
| LOS | A | B | A | B | B | | D | B | | C | B | |
| Approach Delay | | 16.2 | | | 15.6 | | | 24.0 | | | 20.0 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 11 | 205 | 0 | 22 | 178 | | 56 | 17 | | 19 | 16 | |
| Queue Length 95th (ft) | 26 | 290 | 31 | 52 | 256 | | 114 | 66 | | 37 | 64 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 476 | 2723 | 932 | 311 | 2889 | | 325 | 758 | | 482 | 578 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.26 | 0.56 | 0.18 | 0.38 | 0.50 | | 0.38 | 0.21 | | 0.23 | 0.21 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 68.8

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 16.8









Intersection LOS: B

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.5 s | 30.5 s | 12 s | 38 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 16 s | 24 s | 9.6 s | 40.4 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↗ | | ↕ | ↕↗ | |
| Traffic Volume (veh/h) | 0 | 35 | 0 | 680 | 830 | 35 |
| Future Volume (Veh/h) | 0 | 35 | 0 | 680 | 830 | 35 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 38 | 0 | 739 | 902 | 38 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.91 | | | | | |
| vC, conflicting volume | 1290 | 470 | 940 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1132 | 470 | 940 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 93 | 100 | | | |
| cM capacity (veh/h) | 180 | 540 | 725 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 38 | 370 | 370 | 601 | 339 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 38 | 0 | 0 | 0 | 38 | |
| cSH | 540 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.07 | 0.22 | 0.22 | 0.35 | 0.20 | |
| Queue Length 95th (ft) | 6 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 12.2 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 12.2 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.3 | | | | |
| Intersection Capacity Utilization | | 34.1% | | ICU Level of Service | A | |
| Analysis Period (min) | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | | |
|-----------------------------------|------|------|-------|------|------|----------------------|------|---|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↓ | | | ↗ | | |
| Traffic Volume (veh/h) | 0 | 1720 | 1409 | 44 | 0 | 37 | | |
| Future Volume (Veh/h) | 0 | 1720 | 1409 | 44 | 0 | 37 | | |
| Sign Control | | Free | Free | | Stop | | | |
| Grade | | 0% | 0% | | 0% | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | |
| Hourly flow rate (vph) | 0 | 1870 | 1532 | 48 | 0 | 40 | | |
| Pedestrians | | | | | | | | |
| Lane Width (ft) | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | |
| Percent Blockage | | | | | | | | |
| Right turn flare (veh) | | | | | | | | |
| Median type | | None | None | | | | | |
| Median storage veh | | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | | |
| pX, platoon unblocked | 0.79 | | | | 0.87 | 0.79 | | |
| vC, conflicting volume | 1580 | | | | 2179 | 535 | | |
| vC1, stage 1 conf vol | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | |
| vCu, unblocked vol | 812 | | | | 214 | 0 | | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | | |
| tC, 2 stage (s) | | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | | |
| p0 queue free % | 100 | | | | 100 | 95 | | |
| cM capacity (veh/h) | 641 | | | | 656 | 859 | | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 | |
| Volume Total | 623 | 623 | 623 | 613 | 613 | 354 | 40 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 48 | 40 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 859 | |
| Volume to Capacity | 0.37 | 0.37 | 0.37 | 0.36 | 0.36 | 0.21 | 0.05 | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.4 | |
| Lane LOS | | | | | | | A | |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 9.4 | |
| Approach LOS | | | | | | | A | |
| Intersection Summary | | | | | | | | |
| Average Delay | | | 0.1 | | | | | |
| Intersection Capacity Utilization | | | 38.2% | | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 33 | 0 | 10 | 0 | 2 | 42 | 13 | 4 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 33 | 0 | 10 | 0 | 2 | 42 | 13 | 4 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 36 | 0 | 11 | 0 | 2 | 46 | 14 | 4 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 68 | 80 | 4 | 57 | 57 | 25 | 4 | | | | 48 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 68 | 80 | 4 | 57 | 57 | 25 | 4 | | | | 48 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 96 | 100 | 99 | 100 | | | | 99 | |
| cM capacity (veh/h) | 909 | 803 | 1080 | 933 | 827 | 1051 | 1618 | | | | 1559 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 47 | 48 | 18 | | | | | | | | |
| Volume Left | 0 | 36 | 0 | 14 | | | | | | | | |
| Volume Right | 0 | 11 | 46 | 0 | | | | | | | | |
| cSH | 1700 | 959 | 1618 | 1559 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.05 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 4 | 0 | 1 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.9 | 0.0 | 5.7 | | | | | | | | |
| Lane LOS | A | A | | A | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.9 | 0.0 | 5.7 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.6 | | | | | | | | |
| Intersection Capacity Utilization | | | | 17.6% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 7 | 11 | 63 | 17 | 15 | 8 | 68 | 182 | 15 | 7 | 133 | 32 |
| Future Volume (Veh/h) | 7 | 11 | 63 | 17 | 15 | 8 | 68 | 182 | 15 | 7 | 133 | 32 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 8 | 12 | 68 | 18 | 16 | 9 | 74 | 198 | 16 | 8 | 145 | 35 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 442 | 540 | 90 | 516 | 550 | 107 | 180 | | | | 214 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 442 | 540 | 90 | 516 | 550 | 107 | 180 | | | | 214 | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 98 | 97 | 93 | 95 | 96 | 99 | 95 | | | | 99 | |
| cM capacity (veh/h) | 458 | 421 | 950 | 383 | 415 | 926 | 1393 | | | | 1353 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 88 | 43 | 74 | 132 | 82 | 8 | 97 | 83 | | | | |
| Volume Left | 8 | 18 | 74 | 0 | 0 | 8 | 0 | 0 | | | | |
| Volume Right | 68 | 9 | 0 | 0 | 16 | 0 | 0 | 35 | | | | |
| cSH | 748 | 452 | 1393 | 1700 | 1700 | 1353 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.12 | 0.10 | 0.05 | 0.08 | 0.05 | 0.01 | 0.06 | 0.05 | | | | |
| Queue Length 95th (ft) | 10 | 8 | 4 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 10.5 | 13.8 | 7.7 | 0.0 | 0.0 | 7.7 | 0.0 | 0.0 | | | | |
| Lane LOS | B | B | A | | | | A | | | | | |
| Approach Delay (s) | 10.5 | 13.8 | 2.0 | | | | 0.3 | | | | | |
| Approach LOS | B | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 3.5 | | | | | | | | |
| Intersection Capacity Utilization | | | | 25.6% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1
















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 13 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Future Volume (Veh/h) | 13 | 20 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 14 | 22 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 26 | | | 22 | | | 93 | 76 | 22 | 76 | 76 | 26 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 26 | | | 22 | | | 93 | 76 | 22 | 76 | 76 | 26 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1588 | | | 1593 | | | 870 | 807 | 1055 | 907 | 807 | 1050 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 36 | 26 | 0 | 17 | | | | | | | | |
| Volume Left | 14 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 0 | 0 | 17 | | | | | | | | |
| cSH | 1588 | 1593 | 1700 | 1050 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.00 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 1 | 0 | 0 | 1 | | | | | | | | |
| Control Delay (s) | 2.9 | 0.0 | 0.0 | 8.5 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 2.9 | 0.0 | 0.0 | 8.5 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 3.1 | | | | | | | | | |
| Intersection Capacity Utilization | | | 18.4% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 17 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 12 | 0 | 0 | 17 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 18 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 44 | 31 | 18 | 31 | 31 | 13 | 18 | | | 13 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 44 | 31 | 18 | 31 | 31 | 13 | 18 | | | 13 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 100 | 100 | 100 | 100 | 99 | 100 | | | 100 | | |
| cM capacity (veh/h) | 947 | 862 | 1061 | 977 | 862 | 1067 | 1599 | | | 1606 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 13 | 13 | 18 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 13 | 0 | 0 | | | | | | | | |
| cSH | 1700 | 1067 | 1599 | 1606 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.01 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 1 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.4 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.4 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 2.5 | | | | | | | | | | | |
| Intersection Capacity Utilization | 13.3% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023


































| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 8 | 12 | 19 | 5 | 5 | 5 |
| Future Volume (Veh/h) | 8 | 12 | 19 | 5 | 5 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 13 | 21 | 5 | 5 | 5 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 54 | 8 | 10 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 54 | 8 | 10 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 99 | 99 | | | |
| cM capacity (veh/h) | 941 | 1075 | 1610 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 22 | 26 | 10 | | | |
| Volume Left | 9 | 21 | 0 | | | |
| Volume Right | 13 | 0 | 5 | | | |
| cSH | 1016 | 1610 | 1700 | | | |
| Volume to Capacity | 0.02 | 0.01 | 0.01 | | | |
| Queue Length 95th (ft) | 2 | 1 | 0 | | | |
| Control Delay (s) | 8.6 | 5.9 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.6 | 5.9 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 5.9 | | | | |
| Intersection Capacity Utilization | | 18.0% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2028 AM PEAK HOUR BACKGROUND

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 108 | 988 | 108 | 25 | 1765 | 165 | 248 | 365 | 47 | 147 | 195 | 132 |
| Future Volume (vph) | 108 | 988 | 108 | 25 | 1765 | 165 | 248 | 365 | 47 | 147 | 195 | 132 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.092 | | | 0.232 | | | 0.618 | | | 0.361 | | |
| Satd. Flow (perm) | 171 | 5085 | 1583 | 838 | 5085 | 1583 | 2233 | 3539 | 1583 | 1305 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | | 127 | | | 127 | | | 129 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 117 | 1074 | 117 | 27 | 1918 | 179 | 270 | 397 | 51 | 160 | 212 | 143 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 117 | 1074 | 117 | 27 | 1918 | 179 | 270 | 397 | 51 | 160 | 212 | 143 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 11.0 | 46.5 | 46.5 | 9.5 | 45.0 | 45.0 | 9.6 | 24.4 | 24.4 | 9.6 | 24.4 | 24.4 |
| Total Split (%) | 12.2% | 51.7% | 51.7% | 10.6% | 50.0% | 50.0% | 10.7% | 27.1% | 27.1% | 10.7% | 27.1% | 27.1% |
| Maximum Green (s) | 6.5 | 42.0 | 42.0 | 5.0 | 40.5 | 40.5 | 5.1 | 19.9 | 19.9 | 5.1 | 19.9 | 19.9 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 45.9 | 43.5 | 43.5 | 42.5 | 38.7 | 38.7 | 20.0 | 14.8 | 14.8 | 20.0 | 14.8 | 14.8 |
| Actuated g/C Ratio | 0.57 | 0.54 | 0.54 | 0.53 | 0.48 | 0.48 | 0.25 | 0.18 | 0.18 | 0.25 | 0.18 | 0.18 |
| v/c Ratio | 0.51 | 0.39 | 0.13 | 0.04 | 0.79 | 0.22 | 0.43 | 0.61 | 0.13 | 0.35 | 0.33 | 0.36 |
| Control Delay | 19.1 | 12.4 | 2.7 | 8.0 | 21.5 | 5.7 | 25.4 | 35.7 | 0.7 | 24.2 | 31.2 | 10.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 19.1 | 12.4 | 2.7 | 8.0 | 21.5 | 5.7 | 25.4 | 35.7 | 0.7 | 24.2 | 31.2 | 10.2 |
| LOS | B | B | A | A | C | A | C | D | A | C | C | B |
| Approach Delay | | 12.1 | | | 20.0 | | | 29.3 | | | 23.2 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 24 | 94 | 0 | 2 | 299 | 14 | 57 | 104 | 0 | 32 | 52 | 6 |
| Queue Length 95th (ft) | 70 | 181 | 25 | 8 | 408 | 53 | 87 | 150 | 0 | 55 | 84 | 53 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 228 | 2937 | 968 | 605 | 2610 | 874 | 630 | 892 | 494 | 460 | 892 | 495 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.37 | 0.12 | 0.04 | 0.73 | 0.20 | 0.43 | 0.45 | 0.10 | 0.35 | 0.24 | 0.29 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 80.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 19.6









Intersection LOS: B

Intersection Capacity Utilization 69.4%

ICU Level of Service C






















Analysis Period (min) 15

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 24.4 s | 9.5 s | 46.5 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 24.4 s | 11 s | 45 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 61 | 1237 | 49 | 24 | 2068 | 43 | 30 | 4 | 13 | 9 | 26 | 3 |
| Future Volume (vph) | 61 | 1237 | 49 | 24 | 2068 | 43 | 30 | 4 | 13 | 9 | 26 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | 0.883 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5070 | 0 | 1770 | 1645 | 0 | 3433 | 1835 | 0 |
| Flt Permitted | 0.091 | | | 0.167 | | | 0.950 | | | 0.746 | | |
| Satd. Flow (perm) | 329 | 5085 | 1583 | 311 | 5070 | 0 | 1770 | 1645 | 0 | 2696 | 1835 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | 4 | | | 14 | | | 3 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 66 | 1345 | 53 | 26 | 2248 | 47 | 33 | 4 | 14 | 10 | 28 | 3 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 66 | 1345 | 53 | 26 | 2295 | 0 | 33 | 18 | 0 | 10 | 31 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 47.0 | 47.0 | 9.6 | 47.0 | | 9.6 | 23.8 | | 9.6 | 23.8 | |
| Total Split (%) | 10.7% | 52.2% | 52.2% | 10.7% | 52.2% | | 10.7% | 26.4% | | 10.7% | 26.4% | |
| Maximum Green (s) | 5.1 | 42.5 | 42.5 | 5.1 | 42.5 | | 5.1 | 19.3 | | 5.1 | 19.3 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 45.6 | 43.8 | 43.8 | 44.7 | 41.9 | | 5.3 | 8.4 | | 8.5 | 6.8 | |
| Actuated g/C Ratio | 0.69 | 0.66 | 0.66 | 0.67 | 0.63 | | 0.08 | 0.13 | | 0.13 | 0.10 | |
| v/c Ratio | 0.14 | 0.40 | 0.05 | 0.08 | 0.72 | | 0.24 | 0.08 | | 0.02 | 0.16 | |
| Control Delay | 4.6 | 7.4 | 0.1 | 4.7 | 12.0 | | 38.0 | 18.6 | | 24.7 | 31.3 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 4.6 | 7.4 | 0.1 | 4.7 | 12.0 | | 38.0 | 18.6 | | 24.7 | 31.3 | |
| LOS | A | A | A | A | B | | D | B | | C | C | |
| Approach Delay | | 7.0 | | | 11.9 | | | 31.2 | | | 29.7 | |
| Approach LOS | | A | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 2 | 45 | 0 | 2 | 205 | | 13 | 2 | | 2 | 11 | |
| Queue Length 95th (ft) | 10 | 178 | 0 | 11 | 397 | | 43 | 21 | | 8 | 38 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 472 | 3508 | 1131 | 325 | 3355 | | 140 | 503 | | 403 | 553 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.14 | 0.38 | 0.05 | 0.08 | 0.68 | | 0.24 | 0.04 | | 0.02 | 0.06 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 66.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 10.5









Intersection LOS: B

Intersection Capacity Utilization 56.7%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.6 s | 23.8 s | 9.6 s | 47 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 9.6 s | 23.8 s | 9.6 s | 47 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

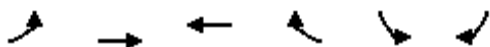
10/05/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |  | |
| Traffic Volume (veh/h) | 0 | 28 | 0 | 638 | 447 | 28 |
| Future Volume (Veh/h) | 0 | 28 | 0 | 638 | 447 | 28 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 30 | 0 | 693 | 486 | 30 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.90 | | | | | |
| vC, conflicting volume | 848 | 258 | 516 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 607 | 258 | 516 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 96 | 100 | | | |
| cM capacity (veh/h) | 385 | 741 | 1046 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 30 | 346 | 346 | 324 | 192 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 30 | 0 | 0 | 0 | 30 | |
| cSH | 741 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.04 | 0.20 | 0.20 | 0.19 | 0.11 | |
| Queue Length 95th (ft) | 3 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 10.1 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 10.1 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.2 | | | |
| Intersection Capacity Utilization | | | 23.2% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↓ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1241 | 2103 | 43 | 0 | 32 | |
| Future Volume (Veh/h) | 0 | 1241 | 2103 | 43 | 0 | 32 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 1349 | 2286 | 47 | 0 | 35 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.65 | | | | 0.72 | 0.65 | |
| vC, conflicting volume | 2333 | | | | 2759 | 786 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 1187 | | | | 793 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 95 | |
| cM capacity (veh/h) | 382 | | | | 236 | 709 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 450 | 450 | 450 | 914 | 914 | 504 | 35 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 47 | 35 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 709 |
| Volume to Capacity | 0.26 | 0.26 | 0.26 | 0.54 | 0.54 | 0.30 | 0.05 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.3 |
| Lane LOS | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 10.3 |
| Approach LOS | | | | | | | B |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.1 | | | | |
| Intersection Capacity Utilization | | | 51.6% | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 30 | 0 | 1 | 0 | 2 | 41 | 8 | 2 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 30 | 0 | 1 | 0 | 2 | 41 | 8 | 2 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 33 | 0 | 1 | 0 | 2 | 45 | 9 | 2 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 46 | 67 | 2 | 44 | 44 | 24 | 2 | | | 47 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 46 | 67 | 2 | 44 | 44 | 24 | 2 | | | 47 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 100 | 100 | 97 | 100 | 100 | 100 | | | 99 | | |
| cM capacity (veh/h) | 951 | 819 | 1082 | 953 | 842 | 1052 | 1620 | | | 1560 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 34 | 47 | 11 | | | | | | | | |
| Volume Left | 0 | 33 | 0 | 9 | | | | | | | | |
| Volume Right | 0 | 1 | 45 | 0 | | | | | | | | |
| cSH | 1700 | 956 | 1620 | 1560 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.04 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.9 | 0.0 | 6.0 | | | | | | | | |
| Lane LOS | A | A | | A | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.9 | 0.0 | 6.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 4.0 | | | | | | | | | | | |
| Intersection Capacity Utilization | 17.0% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 1 | 6 | 4 | 4 | 6 | 2 | 15 | 87 | 6 | 0 | 30 | 3 |
| Future Volume (Veh/h) | 1 | 6 | 4 | 4 | 6 | 2 | 15 | 87 | 6 | 0 | 30 | 3 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 1 | 7 | 4 | 4 | 7 | 2 | 16 | 95 | 7 | 0 | 33 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 120 | 168 | 18 | 154 | 166 | 51 | 36 | 102 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 120 | 168 | 18 | 154 | 166 | 51 | 36 | 102 | | | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 100 | 99 | 100 | 99 | 99 | 100 | 99 | 100 | | | | |
| cM capacity (veh/h) | 829 | 716 | 1056 | 782 | 718 | 1006 | 1573 | 1488 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 12 | 13 | 16 | 63 | 39 | 0 | 22 | 14 | | | | |
| Volume Left | 1 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | | | | |
| Volume Right | 4 | 2 | 0 | 0 | 7 | 0 | 0 | 3 | | | | |
| cSH | 812 | 771 | 1573 | 1700 | 1700 | 1700 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.01 | 0.02 | 0.01 | 0.04 | 0.02 | 0.00 | 0.01 | 0.01 | | | | |
| Queue Length 95th (ft) | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 9.5 | 9.7 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Lane LOS | A | A | A | | | | | | | | | |
| Approach Delay (s) | 9.5 | 9.7 | 1.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 2.0 | | | | | | | | | | | |
| Intersection Capacity Utilization | 17.5% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 4 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 7 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 4 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 9 | | | 8 | | | 29 | 25 | 8 | 25 | 25 | 9 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 9 | | | 8 | | | 29 | 25 | 8 | 25 | 25 | 9 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 100 |
| cM capacity (veh/h) | 1611 | | | 1612 | | | 975 | 866 | 1074 | 984 | 866 | 1073 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 12 | 9 | 0 | 4 | | | | | | | | |
| Volume Left | 4 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 0 | 0 | 4 | | | | | | | | |
| cSH | 1611 | 1612 | 1700 | 1073 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 2.4 | 0.0 | 0.0 | 8.4 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 2.4 | 0.0 | 0.0 | 8.4 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 2.5 | | | | | | | | |
| Intersection Capacity Utilization | | | | 13.9% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 10 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 10 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 11 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 18 | 14 | 11 | 14 | 14 | 3 | 11 | | | | 3 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 18 | 14 | 11 | 14 | 14 | 3 | 11 | | | | 3 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 100 | 100 | 100 | 100 | | | | 100 | |
| cM capacity (veh/h) | 993 | 880 | 1070 | 1002 | 880 | 1081 | 1608 | | | | 1619 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 4 | 3 | 11 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 4 | 0 | 0 | | | | | | | | |
| cSH | 1700 | 1081 | 1608 | 1619 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.3 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.3 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 1.9 | | | | | | | | |
| Intersection Capacity Utilization | | | | 13.3% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1


































10/05/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 2 | 4 | 2 | 6 | 6 | 6 |
| Future Volume (Veh/h) | 2 | 4 | 2 | 6 | 6 | 6 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 4 | 2 | 7 | 7 | 7 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 22 | 10 | 14 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 22 | 10 | 14 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 994 | 1071 | 1604 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 6 | 9 | 14 | | | |
| Volume Left | 2 | 2 | 0 | | | |
| Volume Right | 4 | 0 | 7 | | | |
| cSH | 1044 | 1604 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | | | |
| Control Delay (s) | 8.5 | 1.6 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.5 | 1.6 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 2.3 | | | |
| Intersection Capacity Utilization | | 13.3% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2028 PM PEAK HOUR BACKGROUND

Lanes, Volumes, Timings
1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 189 | 1482 | 229 | 94 | 1292 | 211 | 162 | 351 | 77 | 320 | 485 | 150 |
| Future Volume (vph) | 189 | 1482 | 229 | 94 | 1292 | 211 | 162 | 351 | 77 | 320 | 485 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.112 | | | 0.128 | | | 0.327 | | | 0.324 | | |
| Satd. Flow (perm) | 209 | 5085 | 1583 | 463 | 5085 | 1583 | 1182 | 3539 | 1583 | 1171 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 240 | | | 182 | | | 182 | | | 182 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 205 | 1611 | 249 | 102 | 1404 | 229 | 176 | 382 | 84 | 348 | 527 | 163 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 205 | 1611 | 249 | 102 | 1404 | 229 | 176 | 382 | 84 | 348 | 527 | 163 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 18.4 | 43.8 | 43.8 | 9.6 | 35.0 | 35.0 | 9.6 | 24.0 | 24.0 | 12.6 | 27.0 | 27.0 |
| Total Split (%) | 20.4% | 48.7% | 48.7% | 10.7% | 38.9% | 38.9% | 10.7% | 26.7% | 26.7% | 14.0% | 30.0% | 30.0% |
| Maximum Green (s) | 13.9 | 39.3 | 39.3 | 5.1 | 30.5 | 30.5 | 5.1 | 19.5 | 19.5 | 8.1 | 22.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 45.4 | 38.2 | 38.2 | 35.3 | 30.1 | 30.1 | 20.6 | 15.4 | 15.4 | 26.7 | 18.5 | 18.5 |
| Actuated g/C Ratio | 0.55 | 0.46 | 0.46 | 0.43 | 0.36 | 0.36 | 0.25 | 0.19 | 0.19 | 0.32 | 0.22 | 0.22 |
| v/c Ratio | 0.64 | 0.69 | 0.29 | 0.27 | 0.76 | 0.33 | 0.41 | 0.58 | 0.19 | 0.58 | 0.67 | 0.33 |
| Control Delay | 23.9 | 20.5 | 3.5 | 12.1 | 27.0 | 7.1 | 23.0 | 34.9 | 0.9 | 24.9 | 34.4 | 5.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 23.9 | 20.5 | 3.5 | 12.1 | 27.0 | 7.1 | 23.0 | 34.9 | 0.9 | 24.9 | 34.4 | 5.4 |
| LOS | C | C | A | B | C | A | C | C | A | C | C | A |
| Approach Delay | | 18.8 | | | 23.5 | | | 27.2 | | | 26.7 | |
| Approach LOS | | B | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 52 | 251 | 3 | 12 | 233 | 16 | 34 | 101 | 0 | 72 | 139 | 0 |
| Queue Length 95th (ft) | 127 | 324 | 45 | 24 | 322 | 69 | 57 | 146 | 0 | 105 | 192 | 38 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 380 | 2443 | 885 | 382 | 1961 | 722 | 434 | 843 | 515 | 600 | 973 | 567 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.54 | 0.66 | 0.28 | 0.27 | 0.72 | 0.32 | 0.41 | 0.45 | 0.16 | 0.58 | 0.54 | 0.29 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 82.8

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 22.7









Intersection LOS: C

Intersection Capacity Utilization 69.3%

ICU Level of Service C






















Analysis Period (min) 15

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 12.6 s | 24 s | 9.6 s | 43.8 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 27 s | 18.4 s | 35 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 128 | 1546 | 172 | 119 | 1354 | 124 | 126 | 41 | 124 | 112 | 35 | 88 |
| Future Volume (vph) | 128 | 1546 | 172 | 119 | 1354 | 124 | 126 | 41 | 124 | 112 | 35 | 88 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.987 | | | 0.887 | | | 0.893 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5019 | 0 | 1770 | 1652 | 0 | 3433 | 1663 | 0 |
| Flt Permitted | 0.120 | | | 0.115 | | | 0.950 | | | 0.644 | | |
| Satd. Flow (perm) | 434 | 5085 | 1583 | 214 | 5019 | 0 | 1770 | 1652 | 0 | 2327 | 1663 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 187 | | 20 | | | 135 | | | 96 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 139 | 1680 | 187 | 129 | 1472 | 135 | 137 | 45 | 135 | 122 | 38 | 96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 139 | 1680 | 187 | 129 | 1607 | 0 | 137 | 180 | 0 | 122 | 134 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 39.0 | 39.0 | 11.2 | 40.6 | | 15.0 | 30.3 | | 9.5 | 24.8 | |
| Total Split (%) | 10.7% | 43.3% | 43.3% | 12.4% | 45.1% | | 16.7% | 33.7% | | 10.6% | 27.6% | |
| Maximum Green (s) | 5.1 | 34.5 | 34.5 | 6.7 | 36.1 | | 10.5 | 25.8 | | 5.0 | 20.3 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 38.4 | 33.2 | 33.2 | 41.3 | 34.7 | | 9.7 | 14.6 | | 12.8 | 7.8 | |
| Actuated g/C Ratio | 0.51 | 0.44 | 0.44 | 0.55 | 0.46 | | 0.13 | 0.19 | | 0.17 | 0.10 | |
| v/c Ratio | 0.33 | 0.75 | 0.23 | 0.51 | 0.69 | | 0.60 | 0.42 | | 0.26 | 0.52 | |
| Control Delay | 9.8 | 20.6 | 3.2 | 16.5 | 18.2 | | 44.5 | 12.4 | | 21.8 | 19.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 9.8 | 20.6 | 3.2 | 16.5 | 18.2 | | 44.5 | 12.4 | | 21.8 | 19.9 | |
| LOS | A | C | A | B | B | | D | B | | C | B | |
| Approach Delay | | 18.2 | | | 18.0 | | | 26.3 | | | 20.8 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 12 | 232 | 0 | 24 | 206 | | 62 | 19 | | 22 | 17 | |
| Queue Length 95th (ft) | 27 | 322 | 36 | 64 | 290 | | #136 | 71 | | 40 | 67 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 425 | 2340 | 829 | 256 | 2427 | | 247 | 657 | | 468 | 520 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.33 | 0.72 | 0.23 | 0.50 | 0.66 | | 0.55 | 0.27 | | 0.26 | 0.26 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 75.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 18.9

Intersection LOS: B

Intersection Capacity Utilization 65.7%









ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.5 s | 30.3 s | 11.2 s | 39 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 15 s | 24.8 s | 9.6 s | 40.6 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023

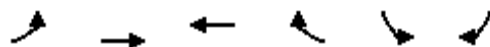


| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↗ | | ↕ | ↕↗ | |
| Traffic Volume (veh/h) | 0 | 39 | 0 | 751 | 916 | 39 |
| Future Volume (Veh/h) | 0 | 39 | 0 | 751 | 916 | 39 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 42 | 0 | 816 | 996 | 42 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.90 | | | | | |
| vC, conflicting volume | 1425 | 519 | 1038 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1260 | 519 | 1038 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 92 | 100 | | | |
| cM capacity (veh/h) | 147 | 502 | 665 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 42 | 408 | 408 | 664 | 374 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 42 | 0 | 0 | 0 | 42 | |
| cSH | 502 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.08 | 0.24 | 0.24 | 0.39 | 0.22 | |
| Queue Length 95th (ft) | 7 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 12.8 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 12.8 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.3 | | | | |
| Intersection Capacity Utilization | | 36.6% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1899 | 1556 | 49 | 0 | 41 | |
| Future Volume (Veh/h) | 0 | 1899 | 1556 | 49 | 0 | 41 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 2064 | 1691 | 53 | 0 | 45 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.76 | | | | 0.84 | 0.76 | |
| vC, conflicting volume | 1744 | | | | 2406 | 590 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 872 | | | | 78 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 95 | |
| cM capacity (veh/h) | 584 | | | | 770 | 824 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 688 | 688 | 688 | 676 | 676 | 391 | 45 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 53 | 45 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 824 |
| Volume to Capacity | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 | 0.23 | 0.05 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.6 |
| Lane LOS | | | | | | | A |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 9.6 |
| Approach LOS | | | | | | | A |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.1 | | | | |
| Intersection Capacity Utilization | | | 41.2% | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2




















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 36 | 0 | 11 | 0 | 2 | 46 | 14 | 4 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 36 | 0 | 11 | 0 | 2 | 46 | 14 | 4 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 39 | 0 | 12 | 0 | 2 | 50 | 15 | 4 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 73 | 86 | 4 | 61 | 61 | 27 | 4 | | | | 52 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 73 | 86 | 4 | 61 | 61 | 27 | 4 | | | | 52 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 96 | 100 | 99 | 100 | | | | 99 | |
| cM capacity (veh/h) | 901 | 796 | 1080 | 927 | 822 | 1048 | 1618 | | | | 1554 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 51 | 52 | 19 | | | | | | | | |
| Volume Left | 0 | 39 | 0 | 15 | | | | | | | | |
| Volume Right | 0 | 12 | 50 | 0 | | | | | | | | |
| cSH | 1700 | 953 | 1618 | 1554 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.05 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 4 | 0 | 1 | | | | | | | | |
| Control Delay (s) | 0.0 | 9.0 | 0.0 | 5.8 | | | | | | | | |
| Lane LOS | A | A | | A | | | | | | | | |
| Approach Delay (s) | 0.0 | 9.0 | 0.0 | 5.8 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.7 | | | | | | | | |
| Intersection Capacity Utilization | | | | 17.7% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















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| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  |  |
| Traffic Volume (veh/h) | 8 | 12 | 70 | 19 | 17 | 9 | 75 | 201 | 17 | 8 | 147 | 35 |
| Future Volume (Veh/h) | 8 | 12 | 70 | 19 | 17 | 9 | 75 | 201 | 17 | 8 | 147 | 35 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 13 | 76 | 21 | 18 | 10 | 82 | 218 | 18 | 9 | 160 | 38 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 340 | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 489 | 597 | 99 | 572 | 607 | 118 | 198 | | | 236 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 489 | 597 | 99 | 572 | 607 | 118 | 198 | | | 236 | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 97 | 92 | 94 | 95 | 99 | 94 | | | 99 | | |
| cM capacity (veh/h) | 418 | 387 | 937 | 343 | 382 | 912 | 1372 | | | 1328 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 98 | 49 | 82 | 145 | 91 | 9 | 107 | 91 | | | | |
| Volume Left | 9 | 21 | 82 | 0 | 0 | 9 | 0 | 0 | | | | |
| Volume Right | 76 | 10 | 0 | 0 | 18 | 0 | 0 | 38 | | | | |
| cSH | 720 | 411 | 1372 | 1700 | 1700 | 1328 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.14 | 0.12 | 0.06 | 0.09 | 0.05 | 0.01 | 0.06 | 0.05 | | | | |
| Queue Length 95th (ft) | 12 | 10 | 5 | 0 | 0 | 1 | 0 | 0 | | | | |
| Control Delay (s) | 10.8 | 14.9 | 7.8 | 0.0 | 0.0 | 7.7 | 0.0 | 0.0 | | | | |
| Lane LOS | B | B | A | | | A | | | | | | |
| Approach Delay (s) | 10.8 | 14.9 | 2.0 | | | 0.3 | | | | | | |
| Approach LOS | B | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 3.7 | | | | | | | | | |
| Intersection Capacity Utilization | | | 26.9% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















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| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 14 | 22 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Future Volume (Veh/h) | 14 | 22 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 18 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 15 | 24 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 28 | | | 24 | | | 102 | 82 | 24 | 82 | 82 | 28 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 28 | | | 24 | | | 102 | 82 | 24 | 82 | 82 | 28 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1585 | | | 1591 | | | 856 | 801 | 1052 | 899 | 801 | 1047 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 39 | 28 | 0 | 20 | | | | | | | | |
| Volume Left | 15 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 0 | 0 | 20 | | | | | | | | |
| cSH | 1585 | 1591 | 1700 | 1047 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.00 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 1 | 0 | 0 | 1 | | | | | | | | |
| Control Delay (s) | 2.8 | 0.0 | 0.0 | 8.5 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 2.8 | 0.0 | 0.0 | 8.5 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 3.2 | | | | | | | | | |
| Intersection Capacity Utilization | | | 18.6% | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 19 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 13 | 0 | 0 | 19 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 14 | 0 | 0 | 21 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 49 | 35 | 21 | 35 | 35 | 14 | 21 | | | | 14 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 49 | 35 | 21 | 35 | 35 | 14 | 21 | | | | 14 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 100 | 100 | 99 | 100 | | | | 100 | |
| cM capacity (veh/h) | 939 | 857 | 1056 | 971 | 857 | 1066 | 1595 | | | | 1604 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 14 | 14 | 21 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 14 | 0 | 0 | | | | | | | | |
| cSH | 1700 | 1066 | 1595 | 1604 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.01 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 1 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.4 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.4 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 2.4 | | | | | | | | |
| Intersection Capacity Utilization | | | | 13.3% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023


































| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 9 | 13 | 21 | 6 | 6 | 6 |
| Future Volume (Veh/h) | 9 | 13 | 21 | 6 | 6 | 6 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 10 | 14 | 23 | 7 | 7 | 7 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 64 | 10 | 14 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 64 | 10 | 14 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 99 | 99 | | | |
| cM capacity (veh/h) | 929 | 1071 | 1604 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 24 | 30 | 14 | | | |
| Volume Left | 10 | 23 | 0 | | | |
| Volume Right | 14 | 0 | 7 | | | |
| cSH | 1007 | 1604 | 1700 | | | |
| Volume to Capacity | 0.02 | 0.01 | 0.01 | | | |
| Queue Length 95th (ft) | 2 | 1 | 0 | | | |
| Control Delay (s) | 8.7 | 5.6 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.7 | 5.6 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 5.5 | | | |
| Intersection Capacity Utilization | | 18.1% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2040 AM PEAK HOUR BACKGROUND

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 137 | 1253 | 137 | 32 | 2239 | 209 | 315 | 463 | 60 | 186 | 248 | 168 |
| Future Volume (vph) | 137 | 1253 | 137 | 32 | 2239 | 209 | 315 | 463 | 60 | 186 | 248 | 168 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.084 | | | 0.147 | | | 0.520 | | | 0.242 | | |
| Satd. Flow (perm) | 156 | 5085 | 1583 | 531 | 5085 | 1583 | 1879 | 3539 | 1583 | 875 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 149 | | | 127 | | | 127 | | | 127 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 149 | 1362 | 149 | 35 | 2434 | 227 | 342 | 503 | 65 | 202 | 270 | 183 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 149 | 1362 | 149 | 35 | 2434 | 227 | 342 | 503 | 65 | 202 | 270 | 183 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 9.5 | 48.0 | 48.0 | 9.5 | 48.0 | 48.0 | 9.6 | 23.0 | 23.0 | 9.5 | 22.9 | 22.9 |
| Total Split (%) | 10.6% | 53.3% | 53.3% | 10.6% | 53.3% | 53.3% | 10.7% | 25.6% | 25.6% | 10.6% | 25.4% | 25.4% |
| Maximum Green (s) | 5.0 | 43.5 | 43.5 | 5.0 | 43.5 | 43.5 | 5.1 | 18.5 | 18.5 | 5.0 | 18.4 | 18.4 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 50.4 | 47.4 | 47.4 | 48.5 | 43.5 | 43.5 | 21.9 | 16.8 | 16.8 | 21.7 | 16.7 | 16.7 |
| Actuated g/C Ratio | 0.57 | 0.54 | 0.54 | 0.55 | 0.49 | 0.49 | 0.25 | 0.19 | 0.19 | 0.25 | 0.19 | 0.19 |
| v/c Ratio | 0.83 | 0.50 | 0.16 | 0.08 | 0.97 | 0.27 | 0.62 | 0.75 | 0.16 | 0.56 | 0.40 | 0.46 |
| Control Delay | 52.2 | 14.7 | 2.8 | 8.1 | 35.4 | 7.0 | 31.1 | 41.4 | 1.1 | 30.0 | 33.3 | 15.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 52.2 | 14.7 | 2.8 | 8.1 | 35.4 | 7.0 | 31.1 | 41.4 | 1.1 | 30.0 | 33.3 | 15.1 |
| LOS | D | B | A | A | D | A | C | D | A | C | C | B |
| Approach Delay | | 17.0 | | | 32.6 | | | 34.7 | | | 27.2 | |
| Approach LOS | | B | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 37 | 191 | 0 | 4 | 480 | 30 | 76 | 140 | 0 | 42 | 70 | 26 |
| Queue Length 95th (ft) | #148 | 234 | 30 | 9 | #623 | 72 | 112 | 194 | 3 | 69 | 107 | 86 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 180 | 2731 | 919 | 456 | 2506 | 844 | 554 | 741 | 432 | 359 | 737 | 430 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.83 | 0.50 | 0.16 | 0.08 | 0.97 | 0.27 | 0.62 | 0.68 | 0.15 | 0.56 | 0.37 | 0.43 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 88.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 84.0%









ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.























Queue shown is maximum after two cycles.

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.5 s | 23 s | 9.5 s | 48 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 22.9 s | 9.5 s | 48 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 77 | 1568 | 62 | 31 | 2623 | 55 | 38 | 6 | 17 | 11 | 34 | 4 |
| Future Volume (vph) | 77 | 1568 | 62 | 31 | 2623 | 55 | 38 | 6 | 17 | 11 | 34 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | 0.892 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5070 | 0 | 1770 | 1662 | 0 | 3433 | 1835 | 0 |
| Flt Permitted | 0.085 | | | 0.101 | | | 0.950 | | | 0.741 | | |
| Satd. Flow (perm) | 307 | 5085 | 1583 | 188 | 5070 | 0 | 1770 | 1662 | 0 | 2678 | 1835 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | 5 | | | 18 | | | 4 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 84 | 1704 | 67 | 34 | 2851 | 60 | 41 | 7 | 18 | 12 | 37 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 84 | 1704 | 67 | 34 | 2911 | 0 | 41 | 25 | 0 | 12 | 41 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.5 | 47.0 | 47.0 | 9.5 | 47.0 | | 9.5 | 24.0 | | 9.5 | 24.0 | |
| Total Split (%) | 10.6% | 52.2% | 52.2% | 10.6% | 52.2% | | 10.6% | 26.7% | | 10.6% | 26.7% | |
| Maximum Green (s) | 5.0 | 42.5 | 42.5 | 5.0 | 42.5 | | 5.0 | 19.5 | | 5.0 | 19.5 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 48.8 | 47.0 | 47.0 | 47.0 | 43.2 | | 5.1 | 10.6 | | 9.8 | 7.1 | |
| Actuated g/C Ratio | 0.68 | 0.65 | 0.65 | 0.65 | 0.60 | | 0.07 | 0.15 | | 0.14 | 0.10 | |
| v/c Ratio | 0.20 | 0.51 | 0.06 | 0.15 | 0.96 | | 0.33 | 0.10 | | 0.03 | 0.22 | |
| Control Delay | 5.5 | 9.0 | 0.4 | 6.0 | 26.1 | | 42.4 | 17.5 | | 24.0 | 32.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 5.5 | 9.0 | 0.4 | 6.0 | 26.1 | | 42.4 | 17.5 | | 24.0 | 32.9 | |
| LOS | A | A | A | A | C | | D | B | | C | C | |
| Approach Delay | | 8.6 | | | 25.9 | | | 33.0 | | | 30.9 | |
| Approach LOS | | A | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 6 | 127 | 0 | 5 | ~569 | | 19 | 3 | | 2 | 17 | |
| Queue Length 95th (ft) | 13 | 249 | 3 | 14 | #698 | | 51 | 25 | | 8 | 46 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 429 | 3324 | 1078 | 234 | 3048 | | 125 | 471 | | 418 | 508 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.20 | 0.51 | 0.06 | 0.15 | 0.96 | | 0.33 | 0.05 | | 0.03 | 0.08 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 71.9

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 19.5

Intersection LOS: B

Intersection Capacity Utilization 68.2%

ICU Level of Service C

Analysis Period (min) 15









~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.










Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.5 s | 24 s | 9.5 s | 47 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 9.5 s | 24 s | 9.5 s | 47 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |  | |
| Traffic Volume (veh/h) | 0 | 35 | 0 | 809 | 567 | 35 |
| Future Volume (Veh/h) | 0 | 35 | 0 | 809 | 567 | 35 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 38 | 0 | 879 | 616 | 38 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.87 | | | | | |
| vC, conflicting volume | 1074 | 327 | 654 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 781 | 327 | 654 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 94 | 100 | | | |
| cM capacity (veh/h) | 288 | 669 | 929 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 38 | 440 | 440 | 411 | 243 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 38 | 0 | 0 | 0 | 38 | |
| cSH | 669 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.06 | 0.26 | 0.26 | 0.24 | 0.14 | |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 10.7 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.3 | | | | |
| Intersection Capacity Utilization | | 26.8% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1574 | 2667 | 55 | 0 | 41 | |
| Future Volume (Veh/h) | 0 | 1574 | 2667 | 55 | 0 | 41 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 1711 | 2899 | 60 | 0 | 45 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.48 | | | | 0.58 | 0.48 | |
| vC, conflicting volume | 2959 | | | | 3499 | 996 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 1273 | | | | 414 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 91 | |
| cM capacity (veh/h) | 259 | | | | 328 | 518 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 570 | 570 | 570 | 1160 | 1160 | 640 | 45 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 60 | 45 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 518 |
| Volume to Capacity | 0.34 | 0.34 | 0.34 | 0.68 | 0.68 | 0.38 | 0.09 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 12.6 |
| Lane LOS | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 12.6 |
| Approach LOS | | | | | | | B |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.1 | | | | |
| Intersection Capacity Utilization | | | 62.8% | | ICU Level of Service | | B |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 38 | 0 | 1 | 0 | 3 | 52 | 10 | 3 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 38 | 0 | 1 | 0 | 3 | 52 | 10 | 3 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 41 | 0 | 1 | 0 | 3 | 57 | 11 | 3 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 58 | 85 | 3 | 56 | 56 | 32 | 3 | | | | 60 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 58 | 85 | 3 | 56 | 56 | 32 | 3 | | | | 60 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 96 | 100 | 100 | 100 | | | | 99 | |
| cM capacity (veh/h) | 933 | 799 | 1081 | 936 | 829 | 1043 | 1619 | | | | 1544 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 42 | 60 | 14 | | | | | | | | |
| Volume Left | 0 | 41 | 0 | 11 | | | | | | | | |
| Volume Right | 0 | 1 | 57 | 0 | | | | | | | | |
| cSH | 1700 | 938 | 1619 | 1544 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.04 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 4 | 0 | 1 | | | | | | | | |
| Control Delay (s) | 0.0 | 9.0 | 0.0 | 5.8 | | | | | | | | |
| Lane LOS | A | A | | A | | | | | | | | |
| Approach Delay (s) | 0.0 | 9.0 | 0.0 | 5.8 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.0 | | | | | | | | |
| Intersection Capacity Utilization | | | | 17.4% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 1 | 7 | 6 | 6 | 7 | 3 | 20 | 11 | 7 | 0 | 38 | 4 |
| Future Volume (Veh/h) | 1 | 7 | 6 | 6 | 7 | 3 | 20 | 11 | 7 | 0 | 38 | 4 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 1 | 8 | 7 | 7 | 8 | 3 | 22 | 12 | 8 | 0 | 41 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 100 | 107 | 22 | 92 | 105 | 10 | 45 | | | | 20 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 100 | 107 | 22 | 92 | 105 | 10 | 45 | | | | 20 | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 99 | 99 | 99 | 99 | 100 | 99 | | | | 100 | |
| cM capacity (veh/h) | 852 | 771 | 1049 | 861 | 773 | 1069 | 1561 | | | | 1595 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 16 | 18 | 22 | 8 | 12 | 0 | 27 | 18 | | | | |
| Volume Left | 1 | 7 | 22 | 0 | 0 | 0 | 0 | 0 | | | | |
| Volume Right | 7 | 3 | 0 | 0 | 8 | 0 | 0 | 4 | | | | |
| cSH | 878 | 846 | 1561 | 1700 | 1700 | 1700 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.02 | 0.02 | 0.01 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | | | | |
| Queue Length 95th (ft) | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 9.2 | 9.4 | 7.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | |
| Lane LOS | A | A | A | | | | | | | | | |
| Approach Delay (s) | 9.2 | 9.4 | 3.8 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 3.9 | | | | | | | | | | | |
| Intersection Capacity Utilization | 17.8% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 6 | 8 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Future Volume (Veh/h) | 6 | 8 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 7 | 9 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 11 | | | 9 | | | 41 | 34 | 9 | 34 | 34 | 11 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 11 | | | 9 | | | 41 | 34 | 9 | 34 | 34 | 11 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1608 | | | 1611 | | | 953 | 855 | 1073 | 970 | 855 | 1070 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 16 | 11 | 0 | 7 | | | | | | | | |
| Volume Left | 7 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 0 | 0 | 7 | | | | | | | | |
| cSH | 1608 | 1611 | 1700 | 1070 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 3.2 | 0.0 | 0.0 | 8.4 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 3.2 | 0.0 | 0.0 | 8.4 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 3.2 | | | | | | | | |
| Intersection Capacity Utilization | | | | 15.8% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 0 | 0 | 13 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 0 | 0 | 13 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 0 | 14 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 25 | 18 | 14 | 18 | 18 | 4 | 14 | | | | 4 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 25 | 18 | 14 | 18 | 18 | 4 | 14 | | | | 4 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 100 | 100 | 99 | 100 | | | | 100 | |
| cM capacity (veh/h) | 979 | 876 | 1066 | 996 | 876 | 1080 | 1604 | | | | 1618 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 7 | 4 | 14 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 7 | 0 | 0 | | | | | | | | |
| cSH | 1700 | 1080 | 1604 | 1618 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.01 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.4 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.4 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 2.3 | | | | | | | | |
| Intersection Capacity Utilization | | | | 13.3% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023


































| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 3 | 6 | 3 | 7 | 7 | 7 |
| Future Volume (Veh/h) | 3 | 6 | 3 | 7 | 7 | 7 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 3 | 7 | 3 | 8 | 8 | 8 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 26 | 12 | 16 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 26 | 12 | 16 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 988 | 1069 | 1602 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 10 | 11 | 16 | | | |
| Volume Left | 3 | 3 | 0 | | | |
| Volume Right | 7 | 0 | 8 | | | |
| cSH | 1043 | 1602 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 1 | 0 | 0 | | | |
| Control Delay (s) | 8.5 | 2.0 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.5 | 2.0 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 2.9 | | | |
| Intersection Capacity Utilization | | 13.3% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2040 PM PEAK HOUR BACKGROUND

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













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| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 239 | 1879 | 290 | 119 | 1638 | 267 | 206 | 445 | 98 | 406 | 615 | 190 |
| Future Volume (vph) | 239 | 1879 | 290 | 119 | 1638 | 267 | 206 | 445 | 98 | 406 | 615 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.105 | | | 0.119 | | | 0.212 | | | 0.267 | | |
| Satd. Flow (perm) | 196 | 5085 | 1583 | 430 | 5085 | 1583 | 766 | 3539 | 1583 | 965 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 237 | | | 182 | | | 182 | | | 182 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 260 | 2042 | 315 | 129 | 1780 | 290 | 224 | 484 | 107 | 441 | 668 | 207 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 260 | 2042 | 315 | 129 | 1780 | 290 | 224 | 484 | 107 | 441 | 668 | 207 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 15.0 | 43.5 | 43.5 | 9.5 | 38.0 | 38.0 | 9.6 | 25.0 | 25.0 | 12.0 | 27.4 | 27.4 |
| Total Split (%) | 16.7% | 48.3% | 48.3% | 10.6% | 42.2% | 42.2% | 10.7% | 27.8% | 27.8% | 13.3% | 30.4% | 30.4% |
| Maximum Green (s) | 10.5 | 39.0 | 39.0 | 5.0 | 33.5 | 33.5 | 5.1 | 20.5 | 20.5 | 7.5 | 22.9 | 22.9 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 48.5 | 39.0 | 39.0 | 38.5 | 33.5 | 33.5 | 24.0 | 18.9 | 18.9 | 28.8 | 21.3 | 21.3 |
| Actuated g/C Ratio | 0.55 | 0.44 | 0.44 | 0.44 | 0.38 | 0.38 | 0.27 | 0.21 | 0.21 | 0.33 | 0.24 | 0.24 |
| v/c Ratio | 0.88 | 0.91 | 0.38 | 0.36 | 0.92 | 0.41 | 0.62 | 0.64 | 0.22 | 0.84 | 0.78 | 0.40 |
| Control Delay | 51.0 | 30.9 | 6.1 | 13.6 | 36.2 | 9.7 | 28.9 | 35.9 | 1.5 | 39.2 | 38.8 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.0 | 30.9 | 6.1 | 13.6 | 36.2 | 9.7 | 28.9 | 35.9 | 1.5 | 39.2 | 38.8 | 8.6 |
| LOS | D | C | A | B | D | A | C | D | A | D | D | A |
| Approach Delay | | 29.9 | | | 31.3 | | | 29.5 | | | 34.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 95 | 390 | 26 | 17 | 352 | 41 | 44 | 130 | 0 | 93 | 184 | 11 |
| Queue Length 95th (ft) | #238 | #507 | 79 | 30 | #460 | 103 | 70 | 182 | 5 | #153 | 246 | 65 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 294 | 2244 | 831 | 357 | 1927 | 713 | 361 | 821 | 507 | 523 | 917 | 545 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.88 | 0.91 | 0.38 | 0.36 | 0.92 | 0.41 | 0.62 | 0.59 | 0.21 | 0.84 | 0.73 | 0.38 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 88.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 31.1

Intersection LOS: C

Intersection Capacity Utilization 83.8%

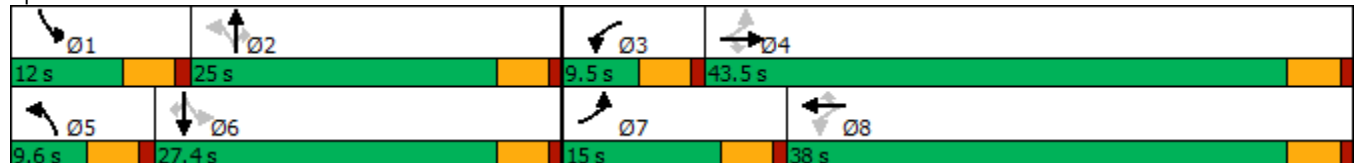
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.






















Queue shown is maximum after two cycles.

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave



Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 162 | 1960 | 218 | 151 | 1717 | 157 | 160 | 52 | 157 | 141 | 45 | 112 |
| Future Volume (vph) | 162 | 1960 | 218 | 151 | 1717 | 157 | 160 | 52 | 157 | 141 | 45 | 112 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.987 | | | 0.887 | | | 0.893 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5019 | 0 | 1770 | 1652 | 0 | 3433 | 1663 | 0 |
| Flt Permitted | 0.104 | | | 0.103 | | | 0.950 | | | 0.556 | | |
| Satd. Flow (perm) | 376 | 5085 | 1583 | 192 | 5019 | 0 | 1770 | 1652 | 0 | 2009 | 1663 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 234 | | 21 | | | 152 | | | 122 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 176 | 2130 | 237 | 164 | 1866 | 171 | 174 | 57 | 171 | 153 | 49 | 122 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 176 | 2130 | 237 | 164 | 2037 | 0 | 174 | 228 | 0 | 153 | 171 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 43.0 | 43.0 | 9.9 | 43.3 | | 14.0 | 27.5 | | 9.6 | 23.1 | |
| Total Split (%) | 10.7% | 47.8% | 47.8% | 11.0% | 48.1% | | 15.6% | 30.6% | | 10.7% | 25.7% | |
| Maximum Green (s) | 5.1 | 38.5 | 38.5 | 5.4 | 38.8 | | 9.5 | 23.0 | | 5.1 | 18.6 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 43.7 | 38.6 | 38.6 | 44.3 | 38.9 | | 9.5 | 12.9 | | 13.6 | 8.5 | |
| Actuated g/C Ratio | 0.55 | 0.48 | 0.48 | 0.55 | 0.49 | | 0.12 | 0.16 | | 0.17 | 0.11 | |
| v/c Ratio | 0.44 | 0.87 | 0.27 | 0.77 | 0.83 | | 0.83 | 0.58 | | 0.35 | 0.60 | |
| Control Delay | 11.0 | 24.1 | 2.9 | 38.4 | 22.0 | | 67.6 | 17.6 | | 24.2 | 21.0 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 11.0 | 24.1 | 2.9 | 38.4 | 22.0 | | 67.6 | 17.6 | | 24.2 | 21.0 | |
| LOS | B | C | A | D | C | | E | B | | C | C | |
| Approach Delay | | 21.2 | | | 23.2 | | | 39.2 | | | 22.5 | |
| Approach LOS | | C | | | C | | | D | | | C | |
| Queue Length 50th (ft) | 16 | 324 | 1 | 31 | 297 | | 86 | 34 | | 29 | 23 | |
| Queue Length 95th (ft) | 34 | #500 | 39 | #143 | 420 | | #209 | 99 | | 51 | 80 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 400 | 2451 | 884 | 212 | 2449 | | 210 | 584 | | 432 | 480 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.44 | 0.87 | 0.27 | 0.77 | 0.83 | | 0.83 | 0.39 | | 0.35 | 0.36 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 80

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 23.4

Intersection LOS: C

Intersection Capacity Utilization 79.4%









ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 27.5 s | 9.9 s | 43 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 14 s | 23.1 s | 9.6 s | 43.3 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023

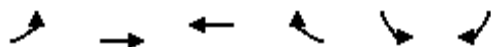


| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↗ | | ↕ | ↕↗ | |
| Traffic Volume (veh/h) | 0 | 49 | 0 | 952 | 1162 | 49 |
| Future Volume (Veh/h) | 0 | 49 | 0 | 952 | 1162 | 49 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 53 | 0 | 1035 | 1263 | 53 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.88 | | | | | |
| vC, conflicting volume | 1807 | 658 | 1316 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1641 | 658 | 1316 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 87 | 100 | | | |
| cM capacity (veh/h) | 80 | 407 | 521 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 53 | 518 | 518 | 842 | 474 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 53 | 0 | 0 | 0 | 53 | |
| cSH | 407 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.13 | 0.30 | 0.30 | 0.50 | 0.28 | |
| Queue Length 95th (ft) | 11 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 15.2 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | C | | | | | |
| Approach Delay (s) | 15.2 | 0.0 | | 0.0 | | |
| Approach LOS | C | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.3 | | | | |
| Intersection Capacity Utilization | | 43.7% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 2408 | 1973 | 62 | 0 | 52 | |
| Future Volume (Veh/h) | 0 | 2408 | 1973 | 62 | 0 | 52 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 2617 | 2145 | 67 | 0 | 57 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.65 | | | | 0.80 | 0.65 | |
| vC, conflicting volume | 2212 | | | | 3051 | 748 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 962 | | | | 0 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 92 | |
| cM capacity (veh/h) | 460 | | | | 814 | 701 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 872 | 872 | 872 | 858 | 858 | 496 | 57 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 67 | 57 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 701 |
| Volume to Capacity | 0.51 | 0.51 | 0.51 | 0.50 | 0.50 | 0.29 | 0.08 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.6 |
| Lane LOS | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 10.6 |
| Approach LOS | | | | | | | B |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.1 | | | | |
| Intersection Capacity Utilization | | | 49.9% | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2


















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 46 | 0 | 14 | 0 | 3 | 59 | 18 | 6 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 46 | 0 | 14 | 0 | 3 | 59 | 18 | 6 | 0 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 50 | 0 | 15 | 0 | 3 | 64 | 20 | 7 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 97 | 114 | 7 | 82 | 82 | 35 | 7 | | | | 67 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 97 | 114 | 7 | 82 | 82 | 35 | 7 | | | | 67 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 100 | 100 | 94 | 100 | 99 | 100 | | | | 99 | |
| cM capacity (veh/h) | 864 | 766 | 1075 | 896 | 798 | 1038 | 1614 | | | | 1535 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 65 | 67 | 27 | | | | | | | | |
| Volume Left | 0 | 50 | 0 | 20 | | | | | | | | |
| Volume Right | 0 | 15 | 64 | 0 | | | | | | | | |
| cSH | 1700 | 926 | 1614 | 1535 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.07 | 0.00 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 6 | 0 | 1 | | | | | | | | |
| Control Delay (s) | 0.0 | 9.2 | 0.0 | 5.5 | | | | | | | | |
| Lane LOS | A | A | | A | | | | | | | | |
| Approach Delay (s) | 0.0 | 9.2 | 0.0 | 5.5 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.7 | | | | | | | | |
| Intersection Capacity Utilization | | | | 18.0% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|------|
| |  |  |  |  |  |  |  |  |  |  |  |  | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations | |  | | |  | |  |  | |  | | | |
| Traffic Volume (veh/h) | 10 | 15 | 88 | 24 | 21 | 11 | 95 | 255 | 21 | 10 | 186 | 45 | |
| Future Volume (Veh/h) | 10 | 15 | 88 | 24 | 21 | 11 | 95 | 255 | 21 | 10 | 186 | 45 | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 11 | 16 | 96 | 26 | 23 | 12 | 103 | 277 | 23 | 11 | 202 | 49 | |
| Pedestrians | | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | | | None |
| Median storage veh | | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 340 | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | | |
| vC, conflicting volume | 616 | 754 | 126 | 722 | 768 | 150 | 251 | | | | | | 300 |
| vC1, stage 1 conf vol | | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | | |
| vCu, unblocked vol | 616 | 754 | 126 | 722 | 768 | 150 | 251 | | | | | | 300 |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | | | | 4.1 |
| tC, 2 stage (s) | | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | | | 2.2 |
| p0 queue free % | 97 | 95 | 89 | 90 | 92 | 99 | 92 | | | | | | 99 |
| cM capacity (veh/h) | 325 | 307 | 902 | 252 | 302 | 870 | 1311 | | | | | | 1258 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | | |
| Volume Total | 123 | 61 | 103 | 185 | 115 | 11 | 135 | 116 | | | | | |
| Volume Left | 11 | 26 | 103 | 0 | 0 | 11 | 0 | 0 | | | | | |
| Volume Right | 96 | 12 | 0 | 0 | 23 | 0 | 0 | 49 | | | | | |
| cSH | 639 | 316 | 1311 | 1700 | 1700 | 1258 | 1700 | 1700 | | | | | |
| Volume to Capacity | 0.19 | 0.19 | 0.08 | 0.11 | 0.07 | 0.01 | 0.08 | 0.07 | | | | | |
| Queue Length 95th (ft) | 18 | 18 | 6 | 0 | 0 | 1 | 0 | 0 | | | | | |
| Control Delay (s) | 12.0 | 19.1 | 8.0 | 0.0 | 0.0 | 7.9 | 0.0 | 0.0 | | | | | |
| Lane LOS | B | C | A | | | | | A | | | | | |
| Approach Delay (s) | 12.0 | 19.1 | 2.0 | | | | | 0.3 | | | | | |
| Approach LOS | B | C | | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | | |
| Average Delay | | | 4.2 | | | | | | | | | | |
| Intersection Capacity Utilization | | | 31.3% | ICU Level of Service | | | | A | | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 18 | 28 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Future Volume (Veh/h) | 18 | 28 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 22 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 20 | 30 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 37 | | | 30 | | | 131 | 107 | 30 | 107 | 107 | 37 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 37 | | | 30 | | | 131 | 107 | 30 | 107 | 107 | 37 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 100 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1574 | | | 1583 | | | 814 | 773 | 1044 | 864 | 773 | 1035 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 50 | 37 | 0 | 24 | | | | | | | | |
| Volume Left | 20 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 0 | 0 | 24 | | | | | | | | |
| cSH | 1574 | 1583 | 1700 | 1035 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.00 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 1 | 0 | 0 | 2 | | | | | | | | |
| Control Delay (s) | 3.0 | 0.0 | 0.0 | 8.6 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 3.0 | 0.0 | 0.0 | 8.6 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 3.2 | | | | | | | | |
| Intersection Capacity Utilization | | | | 19.1% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3

10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 24 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 17 | 0 | 0 | 24 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 0 | 0 | 26 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 62 | 44 | 26 | 44 | 44 | 18 | 26 | | | 18 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 62 | 44 | 26 | 44 | 44 | 18 | 26 | | | 18 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 100 | 100 | 100 | 100 | 98 | 100 | | | 100 | | |
| cM capacity (veh/h) | 917 | 848 | 1050 | 958 | 848 | 1061 | 1588 | | | 1599 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 0 | 18 | 18 | 26 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 0 | 18 | 0 | 0 | | | | | | | | |
| cSH | 1700 | 1061 | 1588 | 1599 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.02 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 1 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 0.0 | 8.5 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 0.0 | 8.5 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 2.5 | | | | | | | | | | | |
| Intersection Capacity Utilization | 13.3% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023




































| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | W | | | W | W | |
| Traffic Volume (veh/h) | 11 | 17 | 27 | 7 | 7 | 7 |
| Future Volume (Veh/h) | 11 | 17 | 27 | 7 | 7 | 7 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 12 | 18 | 29 | 8 | 8 | 8 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 78 | 12 | 16 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 78 | 12 | 16 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 98 | 98 | | | |
| cM capacity (veh/h) | 908 | 1069 | 1602 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 30 | 37 | 16 | | | |
| Volume Left | 12 | 29 | 0 | | | |
| Volume Right | 18 | 0 | 8 | | | |
| cSH | 998 | 1602 | 1700 | | | |
| Volume to Capacity | 0.03 | 0.02 | 0.01 | | | |
| Queue Length 95th (ft) | 2 | 1 | 0 | | | |
| Control Delay (s) | 8.7 | 5.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.7 | 5.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 5.7 | | | |
| Intersection Capacity Utilization | | | 18.5% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2023 AM PEAK HOUR BUILD-OUT

Lanes, Volumes, Timings
1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 99 | 877 | 93 | 23 | 1620 | 149 | 233 | 331 | 43 | 177 | 189 | 120 |
| Future Volume (vph) | 99 | 877 | 93 | 23 | 1620 | 149 | 233 | 331 | 43 | 177 | 189 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.094 | | | 0.284 | | | 0.614 | | | 0.407 | | |
| Satd. Flow (perm) | 175 | 5085 | 1583 | 1026 | 5085 | 1583 | 2219 | 3539 | 1583 | 1471 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | | 127 | | | 127 | | | 130 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 108 | 953 | 101 | 25 | 1761 | 162 | 253 | 360 | 47 | 192 | 205 | 130 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 108 | 953 | 101 | 25 | 1761 | 162 | 253 | 360 | 47 | 192 | 205 | 130 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 12.8 | 46.9 | 46.9 | 9.5 | 43.6 | 43.6 | 9.8 | 24.0 | 24.0 | 9.6 | 23.8 | 23.8 |
| Total Split (%) | 14.2% | 52.1% | 52.1% | 10.6% | 48.4% | 48.4% | 10.9% | 26.7% | 26.7% | 10.7% | 26.4% | 26.4% |
| Maximum Green (s) | 8.3 | 42.4 | 42.4 | 5.0 | 39.1 | 39.1 | 5.3 | 19.5 | 19.5 | 5.1 | 19.3 | 19.3 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 45.6 | 42.6 | 42.6 | 40.2 | 36.5 | 36.5 | 19.2 | 13.7 | 13.7 | 18.8 | 13.5 | 13.5 |
| Actuated g/C Ratio | 0.58 | 0.54 | 0.54 | 0.51 | 0.46 | 0.46 | 0.24 | 0.17 | 0.17 | 0.24 | 0.17 | 0.17 |
| v/c Ratio | 0.41 | 0.35 | 0.11 | 0.04 | 0.75 | 0.20 | 0.41 | 0.59 | 0.12 | 0.40 | 0.34 | 0.34 |
| Control Delay | 13.8 | 11.5 | 1.9 | 7.7 | 20.8 | 5.3 | 25.4 | 35.6 | 0.7 | 25.4 | 32.1 | 8.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 13.8 | 11.5 | 1.9 | 7.7 | 20.8 | 5.3 | 25.4 | 35.6 | 0.7 | 25.4 | 32.1 | 8.8 |
| LOS | B | B | A | A | C | A | C | D | A | C | C | A |
| Approach Delay | | 10.9 | | | 19.3 | | | 29.2 | | | 23.9 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 21 | 78 | 0 | 2 | 267 | 10 | 53 | 94 | 0 | 40 | 51 | 0 |
| Queue Length 95th (ft) | 56 | 154 | 17 | 7 | 365 | 47 | 83 | 137 | 0 | 65 | 83 | 45 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 274 | 3065 | 1004 | 680 | 2612 | 875 | 623 | 906 | 500 | 480 | 897 | 498 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.39 | 0.31 | 0.10 | 0.04 | 0.67 | 0.19 | 0.41 | 0.40 | 0.09 | 0.40 | 0.23 | 0.26 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 79

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 19.1









Intersection LOS: B

Intersection Capacity Utilization 66.0%

ICU Level of Service C






















Analysis Period (min) 15

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 24 s | 9.5 s | 46.9 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.8 s | 23.8 s | 12.8 s | 43.6 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 119 | 1071 | 44 | 22 | 1860 | 39 | 27 | 6 | 12 | 35 | 27 | 29 |
| Future Volume (vph) | 119 | 1071 | 44 | 22 | 1860 | 39 | 27 | 6 | 12 | 35 | 27 | 29 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | 0.902 | | | 0.921 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5070 | 0 | 1770 | 1680 | 0 | 3433 | 1716 | 0 |
| Flt Permitted | 0.092 | | | 0.215 | | | 0.950 | | | 0.667 | | |
| Satd. Flow (perm) | 332 | 5085 | 1583 | 400 | 5070 | 0 | 1770 | 1680 | 0 | 2410 | 1716 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | 4 | | | 13 | | | 32 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 129 | 1164 | 48 | 24 | 2022 | 42 | 29 | 7 | 13 | 38 | 29 | 32 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 129 | 1164 | 48 | 24 | 2064 | 0 | 29 | 20 | 0 | 38 | 61 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 46.0 | 46.0 | 9.6 | 46.0 | | 9.8 | 24.8 | | 9.6 | 24.6 | |
| Total Split (%) | 10.7% | 51.1% | 51.1% | 10.7% | 51.1% | | 10.9% | 27.6% | | 10.7% | 27.3% | |
| Maximum Green (s) | 5.1 | 41.5 | 41.5 | 5.1 | 41.5 | | 5.3 | 20.3 | | 5.1 | 20.1 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 45.2 | 43.4 | 43.4 | 43.4 | 39.6 | | 5.5 | 7.0 | | 10.4 | 8.7 | |
| Actuated g/C Ratio | 0.66 | 0.64 | 0.64 | 0.64 | 0.58 | | 0.08 | 0.10 | | 0.15 | 0.13 | |
| v/c Ratio | 0.28 | 0.36 | 0.05 | 0.07 | 0.70 | | 0.20 | 0.11 | | 0.08 | 0.25 | |
| Control Delay | 6.2 | 7.9 | 0.1 | 5.3 | 13.4 | | 37.8 | 21.7 | | 24.2 | 20.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 6.2 | 7.9 | 0.1 | 5.3 | 13.4 | | 37.8 | 21.7 | | 24.2 | 20.9 | |
| LOS | A | A | A | A | B | | D | C | | C | C | |
| Approach Delay | | 7.5 | | | 13.3 | | | 31.2 | | | 22.1 | |
| Approach LOS | | A | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 8 | 70 | 0 | 3 | 247 | | 13 | 3 | | 7 | 11 | |
| Queue Length 95th (ft) | 19 | 155 | 0 | 11 | 344 | | 40 | 23 | | 19 | 47 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 461 | 3460 | 1117 | 361 | 3219 | | 143 | 530 | | 448 | 549 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.28 | 0.34 | 0.04 | 0.07 | 0.64 | | 0.20 | 0.04 | | 0.08 | 0.11 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 68.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 11.6









Intersection LOS: B

Intersection Capacity Utilization 60.4%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.6 s | 24.8 s | 9.6 s | 46 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 9.8 s | 24.6 s | 9.6 s | 46 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Site Access 3

10/05/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |  | |
| Traffic Volume (veh/h) | 0 | 81 | 0 | 560 | 405 | 31 |
| Future Volume (Veh/h) | 0 | 81 | 0 | 560 | 405 | 31 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 88 | 0 | 609 | 440 | 34 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.91 | | | | | |
| vC, conflicting volume | 762 | 237 | 474 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 544 | 237 | 474 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 88 | 100 | | | |
| cM capacity (veh/h) | 427 | 764 | 1084 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 88 | 304 | 304 | 293 | 181 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 88 | 0 | 0 | 0 | 34 | |
| cSH | 764 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.12 | 0.18 | 0.18 | 0.17 | 0.11 | |
| Queue Length 95th (ft) | 10 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 10.3 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 10.3 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.8 | | | |
| Intersection Capacity Utilization | | | 23.9% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | | |
|-----------------------------------|------|------|-------|------|------|----------------------|------|---|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | | |
| Traffic Volume (veh/h) | 0 | 1102 | 1811 | 162 | 0 | 110 | | |
| Future Volume (Veh/h) | 0 | 1102 | 1811 | 162 | 0 | 110 | | |
| Sign Control | | Free | Free | | Stop | | | |
| Grade | | 0% | 0% | | 0% | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | |
| Hourly flow rate (vph) | 0 | 1198 | 1968 | 176 | 0 | 120 | | |
| Pedestrians | | | | | | | | |
| Lane Width (ft) | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | |
| Percent Blockage | | | | | | | | |
| Right turn flare (veh) | | | | | | | | |
| Median type | | None | None | | | | | |
| Median storage veh | | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | | |
| pX, platoon unblocked | 0.69 | | | | 0.75 | 0.69 | | |
| vC, conflicting volume | 2144 | | | | 2455 | 744 | | |
| vC1, stage 1 conf vol | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | |
| vCu, unblocked vol | 1097 | | | | 725 | 0 | | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | | |
| tC, 2 stage (s) | | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | | |
| p0 queue free % | 100 | | | | 100 | 84 | | |
| cM capacity (veh/h) | 437 | | | | 270 | 751 | | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 | |
| Volume Total | 399 | 399 | 399 | 787 | 787 | 570 | 120 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 176 | 120 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 751 | |
| Volume to Capacity | 0.23 | 0.23 | 0.23 | 0.46 | 0.46 | 0.34 | 0.16 | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.7 | |
| Lane LOS | | | | | | | B | |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 10.7 | |
| Approach LOS | | | | | | | B | |
| Intersection Summary | | | | | | | | |
| Average Delay | | | 0.4 | | | | | |
| Intersection Capacity Utilization | | | 52.1% | | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 13 | 0 | 61 | 27 | 0 | 1 | 123 | 2 | 37 | 7 | 22 | 0 |
| Future Volume (Veh/h) | 13 | 0 | 61 | 27 | 0 | 1 | 123 | 2 | 37 | 7 | 22 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 14 | 0 | 66 | 29 | 0 | 1 | 134 | 2 | 40 | 8 | 24 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 331 | 350 | 24 | 396 | 330 | 22 | 24 | | | 42 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 331 | 350 | 24 | 396 | 330 | 22 | 24 | | | 42 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 100 | 94 | 94 | 100 | 100 | 92 | | | 99 | | |
| cM capacity (veh/h) | 579 | 523 | 1052 | 493 | 537 | 1055 | 1591 | | | 1567 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 80 | 30 | 176 | 32 | | | | | | | | |
| Volume Left | 14 | 29 | 134 | 8 | | | | | | | | |
| Volume Right | 66 | 1 | 40 | 0 | | | | | | | | |
| cSH | 921 | 501 | 1591 | 1567 | | | | | | | | |
| Volume to Capacity | 0.09 | 0.06 | 0.08 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 7 | 5 | 7 | 0 | | | | | | | | |
| Control Delay (s) | 9.3 | 12.6 | 5.8 | 1.9 | | | | | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.3 | 12.6 | 5.8 | 1.9 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 28.7% | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 1 | 5 | 4 | 60 | 5 | 6 | 14 | 79 | 71 | 2 | 27 | 3 |
| Future Volume (Veh/h) | 1 | 5 | 4 | 60 | 5 | 6 | 14 | 79 | 71 | 2 | 27 | 3 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 1 | 5 | 4 | 65 | 5 | 7 | 15 | 86 | 77 | 2 | 29 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 117 | 228 | 16 | 180 | 190 | 82 | 32 | | | | 163 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 117 | 228 | 16 | 180 | 190 | 82 | 32 | | | | 163 | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 99 | 100 | 91 | 99 | 99 | 99 | | | | 100 | |
| cM capacity (veh/h) | 829 | 663 | 1059 | 752 | 696 | 962 | 1579 | | | | 1413 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 10 | 77 | 15 | 57 | 106 | 2 | 19 | 13 | | | | |
| Volume Left | 1 | 65 | 15 | 0 | 0 | 2 | 0 | 0 | | | | |
| Volume Right | 4 | 7 | 0 | 0 | 77 | 0 | 0 | 3 | | | | |
| cSH | 799 | 763 | 1579 | 1700 | 1700 | 1413 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.01 | 0.10 | 0.01 | 0.03 | 0.06 | 0.00 | 0.01 | 0.01 | | | | |
| Queue Length 95th (ft) | 1 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 9.6 | 10.2 | 7.3 | 0.0 | 0.0 | 7.6 | 0.0 | 0.0 | | | | |
| Lane LOS | A | B | A | | | | A | | | | | |
| Approach Delay (s) | 9.6 | 10.2 | 0.6 | | | | 0.4 | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 3.4 | | | | | | | | | | | |
| Intersection Capacity Utilization | 24.7% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1
















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 4 | 6 | 68 | 0 | 7 | 0 | 60 | 0 | 0 | 0 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 6 | 68 | 0 | 7 | 0 | 60 | 0 | 0 | 0 | 0 | 4 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 4 | 7 | 74 | 0 | 8 | 0 | 65 | 0 | 0 | 0 | 0 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 8 | | | 81 | | | 64 | 60 | 44 | 60 | 97 | 8 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 8 | | | 81 | | | 64 | 60 | 44 | 60 | 97 | 8 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 93 | 100 | 100 | 100 | 100 | 100 |
| cM capacity (veh/h) | 1612 | | | 1517 | | | 925 | 829 | 1026 | 934 | 791 | 1074 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 85 | 8 | 65 | 4 | | | | | | | | |
| Volume Left | 4 | 0 | 65 | 0 | | | | | | | | |
| Volume Right | 74 | 0 | 0 | 4 | | | | | | | | |
| cSH | 1612 | 1517 | 925 | 1074 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.07 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 6 | 0 | | | | | | | | |
| Control Delay (s) | 0.4 | 0.0 | 9.2 | 8.4 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 0.4 | 0.0 | 9.2 | 8.4 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.1 | | | | | | | | |
| Intersection Capacity Utilization | | | | 24.9% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 20 | 43 | 20 | 0 | 26 | 4 | 0 | 3 | 13 | 0 | 9 | 0 |
| Future Volume (Veh/h) | 20 | 43 | 20 | 0 | 26 | 4 | 0 | 3 | 13 | 0 | 9 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 47 | 22 | 0 | 28 | 4 | 0 | 3 | 14 | 0 | 10 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 38 | 27 | 10 | 66 | 20 | 10 | 10 | 17 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 38 | 27 | 10 | 66 | 20 | 10 | 10 | 17 | | | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 98 | 95 | 98 | 100 | 97 | 100 | 100 | 100 | | | | |
| cM capacity (veh/h) | 940 | 866 | 1071 | 871 | 874 | 1071 | 1610 | 1600 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 91 | 32 | 17 | 10 | | | | | | | | |
| Volume Left | 22 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 22 | 4 | 14 | 0 | | | | | | | | |
| cSH | 927 | 894 | 1610 | 1600 | | | | | | | | |
| Volume to Capacity | 0.10 | 0.04 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 8 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 9.3 | 9.2 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 9.3 | 9.2 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 7.6 | | | | | | | | | | | |
| Intersection Capacity Utilization | 21.3% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023

























| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 2 | 4 | 2 | 25 | 5 | 5 |
| Future Volume (Veh/h) | 2 | 4 | 2 | 25 | 5 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 4 | 2 | 27 | 5 | 5 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 38 | 8 | 10 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 38 | 8 | 10 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 972 | 1075 | 1610 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 6 | 29 | 10 | | | |
| Volume Left | 2 | 2 | 0 | | | |
| Volume Right | 4 | 0 | 5 | | | |
| cSH | 1038 | 1610 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | | | |
| Control Delay (s) | 8.5 | 0.5 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.5 | 0.5 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.5 | | | |
| Intersection Capacity Utilization | | 13.3% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2023 PM PEAK HOUR BUILD-OUT

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 172 | 1328 | 202 | 85 | 1189 | 191 | 154 | 318 | 70 | 327 | 448 | 136 |
| Future Volume (vph) | 172 | 1328 | 202 | 85 | 1189 | 191 | 154 | 318 | 70 | 327 | 448 | 136 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.120 | | | 0.139 | | | 0.393 | | | 0.349 | | |
| Satd. Flow (perm) | 224 | 5085 | 1583 | 502 | 5085 | 1583 | 1420 | 3539 | 1583 | 1261 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 220 | | | 182 | | | 182 | | | 182 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 187 | 1443 | 220 | 92 | 1292 | 208 | 167 | 346 | 76 | 355 | 487 | 148 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 187 | 1443 | 220 | 92 | 1292 | 208 | 167 | 346 | 76 | 355 | 487 | 148 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 18.0 | 42.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.6 | 25.0 | 25.0 | 13.0 | 28.4 | 28.4 |
| Total Split (%) | 20.0% | 47.2% | 47.2% | 10.6% | 37.8% | 37.8% | 10.7% | 27.8% | 27.8% | 14.4% | 31.6% | 31.6% |
| Maximum Green (s) | 13.5 | 38.0 | 38.0 | 5.0 | 29.5 | 29.5 | 5.1 | 20.5 | 20.5 | 8.5 | 23.9 | 23.9 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 42.2 | 35.1 | 35.1 | 32.7 | 27.6 | 27.6 | 19.3 | 14.1 | 14.1 | 26.1 | 17.5 | 17.5 |
| Actuated g/C Ratio | 0.54 | 0.45 | 0.45 | 0.41 | 0.35 | 0.35 | 0.24 | 0.18 | 0.18 | 0.33 | 0.22 | 0.22 |
| v/c Ratio | 0.58 | 0.64 | 0.27 | 0.23 | 0.73 | 0.31 | 0.35 | 0.55 | 0.18 | 0.54 | 0.62 | 0.30 |
| Control Delay | 20.1 | 19.4 | 3.3 | 11.7 | 25.7 | 6.2 | 21.1 | 33.4 | 0.9 | 22.9 | 31.9 | 4.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.1 | 19.4 | 3.3 | 11.7 | 25.7 | 6.2 | 21.1 | 33.4 | 0.9 | 22.9 | 31.9 | 4.1 |
| LOS | C | B | A | B | C | A | C | C | A | C | C | A |
| Approach Delay | | 17.6 | | | 22.3 | | | 25.7 | | | 24.5 | |
| Approach LOS | | B | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 44 | 202 | 0 | 10 | 196 | 8 | 30 | 85 | 0 | 68 | 118 | 0 |
| Queue Length 95th (ft) | 110 | 286 | 40 | 23 | 294 | 58 | 53 | 131 | 0 | 104 | 173 | 29 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 389 | 2491 | 887 | 397 | 1969 | 724 | 479 | 935 | 552 | 656 | 1090 | 613 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.58 | 0.25 | 0.23 | 0.66 | 0.29 | 0.35 | 0.37 | 0.14 | 0.54 | 0.45 | 0.24 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 78.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 21.4









Intersection LOS: C

Intersection Capacity Utilization 65.6%

ICU Level of Service C























Analysis Period (min) 15

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 13 s | 25 s | 9.5 s | 42.5 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 28.4 s | 18 s | 34 s |













Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 171 | 1359 | 156 | 108 | 1218 | 112 | 114 | 38 | 112 | 124 | 33 | 99 |
| Future Volume (vph) | 171 | 1359 | 156 | 108 | 1218 | 112 | 114 | 38 | 112 | 124 | 33 | 99 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.987 | | | 0.888 | | | 0.887 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5019 | 0 | 1770 | 1654 | 0 | 3433 | 1652 | 0 |
| Flt Permitted | 0.122 | | | 0.123 | | | 0.950 | | | 0.654 | | |
| Satd. Flow (perm) | 441 | 5085 | 1583 | 229 | 5019 | 0 | 1770 | 1654 | 0 | 2363 | 1652 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 182 | | 19 | | | 122 | | | 108 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 186 | 1477 | 170 | 117 | 1324 | 122 | 124 | 41 | 122 | 135 | 36 | 108 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 186 | 1477 | 170 | 117 | 1446 | 0 | 124 | 163 | 0 | 135 | 144 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 10.0 | 37.0 | 37.0 | 12.0 | 39.0 | | 16.0 | 31.4 | | 9.6 | 25.0 | |
| Total Split (%) | 11.1% | 41.1% | 41.1% | 13.3% | 43.3% | | 17.8% | 34.9% | | 10.7% | 27.8% | |
| Maximum Green (s) | 5.5 | 32.5 | 32.5 | 7.5 | 34.5 | | 11.5 | 26.9 | | 5.1 | 20.5 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 37.0 | 32.9 | 32.9 | 38.3 | 31.2 | | 9.8 | 11.9 | | 11.6 | 7.9 | |
| Actuated g/C Ratio | 0.53 | 0.47 | 0.47 | 0.55 | 0.45 | | 0.14 | 0.17 | | 0.17 | 0.11 | |
| v/c Ratio | 0.39 | 0.62 | 0.20 | 0.41 | 0.64 | | 0.50 | 0.43 | | 0.28 | 0.51 | |
| Control Delay | 10.6 | 18.1 | 3.1 | 12.8 | 17.4 | | 38.8 | 13.1 | | 21.2 | 18.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 10.6 | 18.1 | 3.1 | 12.8 | 17.4 | | 38.8 | 13.1 | | 21.2 | 18.5 | |
| LOS | B | B | A | B | B | | D | B | | C | B | |
| Approach Delay | | 15.9 | | | 17.0 | | | 24.2 | | | 19.8 | |
| Approach LOS | | B | | | B | | | C | | | B | |
| Queue Length 50th (ft) | 18 | 197 | 0 | 22 | 179 | | 55 | 17 | | 23 | 16 | |
| Queue Length 95th (ft) | 37 | 282 | 32 | 52 | 260 | | 113 | 66 | | 43 | 68 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 478 | 2464 | 860 | 300 | 2591 | | 303 | 736 | | 474 | 580 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.39 | 0.60 | 0.20 | 0.39 | 0.56 | | 0.41 | 0.22 | | 0.28 | 0.25 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 70

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 17.2









Intersection LOS: B

Intersection Capacity Utilization 61.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.6 s | 31.4 s | 12 s | 37 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 16 s | 25 s | 10 s | 39 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023

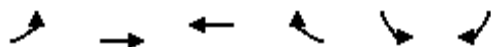


| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations | | ↗ | | ↑↑ | ↑↑↗ | |
| Traffic Volume (veh/h) | 0 | 81 | 0 | 687 | 830 | 55 |
| Future Volume (Veh/h) | 0 | 81 | 0 | 687 | 830 | 55 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 88 | 0 | 747 | 902 | 60 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.92 | | | | | |
| vC, conflicting volume | 1306 | 481 | 962 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1148 | 481 | 962 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 83 | 100 | | | |
| cM capacity (veh/h) | 176 | 531 | 711 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 88 | 374 | 374 | 601 | 361 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 88 | 0 | 0 | 0 | 60 | |
| cSH | 531 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.17 | 0.22 | 0.22 | 0.35 | 0.21 | |
| Queue Length 95th (ft) | 15 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 13.1 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | | | | | | |
| Approach Delay (s) | 13.1 | 0.0 | | 0.0 | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.6 | | | |
| Intersection Capacity Utilization | | | 36.4% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1702 | 1332 | 147 | 0 | 106 | |
| Future Volume (Veh/h) | 0 | 1702 | 1332 | 147 | 0 | 106 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 1850 | 1448 | 160 | 0 | 115 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.78 | | | | 0.89 | 0.78 | |
| vC, conflicting volume | 1608 | | | | 2145 | 563 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 812 | | | | 199 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 86 | |
| cM capacity (veh/h) | 635 | | | | 683 | 850 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 617 | 617 | 617 | 579 | 579 | 450 | 115 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 160 | 115 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 850 |
| Volume to Capacity | 0.36 | 0.36 | 0.36 | 0.34 | 0.34 | 0.26 | 0.14 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 9.9 |
| Lane LOS | | | | | | | A |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 9.9 |
| Approach LOS | | | | | | | A |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.3 | | | | |
| Intersection Capacity Utilization | | | 42.2% | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 12 | 0 | 52 | 33 | 0 | 10 | 103 | 2 | 42 | 13 | 21 | 0 |
| Future Volume (Veh/h) | 12 | 0 | 52 | 33 | 0 | 10 | 103 | 2 | 42 | 13 | 21 | 0 |
| Sign Control | Stop | | | | Stop | | | | Free | | | |
| Grade | 0% | | | | 0% | | | | 0% | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 13 | 0 | 57 | 36 | 0 | 11 | 112 | 2 | 46 | 14 | 23 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 311 | 323 | 23 | 357 | 300 | 25 | 23 | | | | 48 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 311 | 323 | 23 | 357 | 300 | 25 | 23 | | | | 48 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 98 | 100 | 95 | 93 | 100 | 99 | 93 | | | | 99 | |
| cM capacity (veh/h) | 597 | 548 | 1054 | 532 | 564 | 1051 | 1592 | | | | 1559 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 70 | 47 | 160 | 37 | | | | | | | | |
| Volume Left | 13 | 36 | 112 | 14 | | | | | | | | |
| Volume Right | 57 | 11 | 46 | 0 | | | | | | | | |
| cSH | 923 | 601 | 1592 | 1559 | | | | | | | | |
| Volume to Capacity | 0.08 | 0.08 | 0.07 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 6 | 6 | 6 | 1 | | | | | | | | |
| Control Delay (s) | 9.2 | 11.5 | 5.4 | 2.8 | | | | | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.2 | 11.5 | 5.4 | 2.8 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 29.1% | ICU Level of Service | | | | A | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 7 | 11 | 63 | 60 | 15 | 12 | 68 | 182 | 71 | 10 | 133 | 32 |
| Future Volume (Veh/h) | 7 | 11 | 63 | 60 | 15 | 12 | 68 | 182 | 71 | 10 | 133 | 32 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 8 | 12 | 68 | 65 | 16 | 13 | 74 | 198 | 77 | 11 | 145 | 35 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | 340 | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 452 | 608 | 90 | 553 | 586 | 138 | 180 | | | 275 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 452 | 608 | 90 | 553 | 586 | 138 | 180 | | | 275 | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 97 | 93 | 82 | 96 | 99 | 95 | | | 99 | | |
| cM capacity (veh/h) | 447 | 384 | 950 | 359 | 395 | 886 | 1393 | | | 1285 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 88 | 94 | 74 | 132 | 143 | 11 | 97 | 83 | | | | |
| Volume Left | 8 | 65 | 74 | 0 | 0 | 11 | 0 | 0 | | | | |
| Volume Right | 68 | 13 | 0 | 0 | 77 | 0 | 0 | 35 | | | | |
| cSH | 729 | 398 | 1393 | 1700 | 1700 | 1285 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.12 | 0.24 | 0.05 | 0.08 | 0.08 | 0.01 | 0.06 | 0.05 | | | | |
| Queue Length 95th (ft) | 10 | 23 | 4 | 0 | 0 | 1 | 0 | 0 | | | | |
| Control Delay (s) | 10.6 | 16.8 | 7.7 | 0.0 | 0.0 | 7.8 | 0.0 | 0.0 | | | | |
| Lane LOS | B | C | A | | | A | | | | | | |
| Approach Delay (s) | 10.6 | 16.8 | 1.6 | | | 0.5 | | | | | | |
| Approach LOS | B | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 4.4 | | | | | | | | | |
| Intersection Capacity Utilization | | | 32.1% | | | ICU Level of Service | | | | A | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis
















12: Site Access 1 & Internal Road 1

10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 13 | 20 | 59 | 0 | 24 | 0 | 47 | 0 | 0 | 0 | 0 | 16 |
| Future Volume (Veh/h) | 13 | 20 | 59 | 0 | 24 | 0 | 47 | 0 | 0 | 0 | 0 | 16 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 14 | 22 | 64 | 0 | 26 | 0 | 51 | 0 | 0 | 0 | 0 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 26 | | | 86 | | | 125 | 108 | 54 | 108 | 140 | 26 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 26 | | | 86 | | | 125 | 108 | 54 | 108 | 140 | 26 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 94 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1588 | | | 1510 | | | 830 | 775 | 1013 | 865 | 744 | 1050 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 100 | 26 | 51 | 17 | | | | | | | | |
| Volume Left | 14 | 0 | 51 | 0 | | | | | | | | |
| Volume Right | 64 | 0 | 0 | 17 | | | | | | | | |
| cSH | 1588 | 1510 | 830 | 1050 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.06 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 1 | 0 | 5 | 1 | | | | | | | | |
| Control Delay (s) | 1.1 | 0.0 | 9.6 | 8.5 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 1.1 | 0.0 | 9.6 | 8.5 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 3.8 | | | | | | | | |
| Intersection Capacity Utilization | | | | 28.0% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis 17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 20 | 34 | 17 | 0 | 20 | 12 | 0 | 12 | 12 | 0 | 17 | 0 |
| Future Volume (Veh/h) | 20 | 34 | 17 | 0 | 20 | 12 | 0 | 12 | 12 | 0 | 17 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 37 | 18 | 0 | 22 | 13 | 0 | 13 | 13 | 0 | 18 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 62 | 44 | 18 | 74 | 38 | 20 | 18 | | | 26 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 62 | 44 | 18 | 74 | 38 | 20 | 18 | | | 26 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 96 | 98 | 100 | 97 | 99 | 100 | | | 100 | | |
| cM capacity (veh/h) | 904 | 848 | 1061 | 871 | 855 | 1058 | 1599 | | | 1588 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 77 | 35 | 26 | 18 | | | | | | | | |
| Volume Left | 22 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 18 | 13 | 13 | 0 | | | | | | | | |
| cSH | 906 | 921 | 1599 | 1588 | | | | | | | | |
| Volume to Capacity | 0.08 | 0.04 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 7 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 9.3 | 9.1 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 9.3 | 9.1 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.6 | | | | | | | | | |
| Intersection Capacity Utilization | | | 20.6% | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023


































| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 8 | 12 | 19 | 25 | 5 | 5 |
| Future Volume (Veh/h) | 8 | 12 | 19 | 25 | 5 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 13 | 21 | 27 | 5 | 5 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 76 | 8 | 10 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 76 | 8 | 10 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 99 | 99 | | | |
| cM capacity (veh/h) | 915 | 1075 | 1610 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 22 | 48 | 10 | | | |
| Volume Left | 9 | 21 | 0 | | | |
| Volume Right | 13 | 0 | 5 | | | |
| cSH | 1003 | 1610 | 1700 | | | |
| Volume to Capacity | 0.02 | 0.01 | 0.01 | | | |
| Queue Length 95th (ft) | 2 | 1 | 0 | | | |
| Control Delay (s) | 8.7 | 3.2 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.7 | 3.2 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 4.3 | | | |
| Intersection Capacity Utilization | | 19.0% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2028 AM PEAK HOUR BUILD-OUT

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 109 | 970 | 103 | 25 | 1786 | 165 | 256 | 365 | 47 | 191 | 207 | 132 |
| Future Volume (vph) | 109 | 970 | 103 | 25 | 1786 | 165 | 256 | 365 | 47 | 191 | 207 | 132 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.089 | | | 0.239 | | | 0.595 | | | 0.356 | | |
| Satd. Flow (perm) | 166 | 5085 | 1583 | 864 | 5085 | 1583 | 2150 | 3539 | 1583 | 1286 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | | 127 | | | 127 | | | 127 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 118 | 1054 | 112 | 27 | 1941 | 179 | 278 | 397 | 51 | 208 | 225 | 143 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 118 | 1054 | 112 | 27 | 1941 | 179 | 278 | 397 | 51 | 208 | 225 | 143 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 11.0 | 46.5 | 46.5 | 9.5 | 45.0 | 45.0 | 9.6 | 24.4 | 24.4 | 9.6 | 24.4 | 24.4 |
| Total Split (%) | 12.2% | 51.7% | 51.7% | 10.6% | 50.0% | 50.0% | 10.7% | 27.1% | 27.1% | 10.7% | 27.1% | 27.1% |
| Maximum Green (s) | 6.5 | 42.0 | 42.0 | 5.0 | 40.5 | 40.5 | 5.1 | 19.9 | 19.9 | 5.1 | 19.9 | 19.9 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 47.1 | 44.7 | 44.7 | 43.6 | 39.8 | 39.8 | 20.1 | 14.9 | 14.9 | 20.1 | 14.9 | 14.9 |
| Actuated g/C Ratio | 0.57 | 0.55 | 0.55 | 0.53 | 0.49 | 0.49 | 0.25 | 0.18 | 0.18 | 0.25 | 0.18 | 0.18 |
| v/c Ratio | 0.53 | 0.38 | 0.12 | 0.04 | 0.79 | 0.21 | 0.46 | 0.62 | 0.13 | 0.46 | 0.35 | 0.37 |
| Control Delay | 20.0 | 12.2 | 2.5 | 8.0 | 21.5 | 5.7 | 26.0 | 36.0 | 0.7 | 26.1 | 31.6 | 10.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.0 | 12.2 | 2.5 | 8.0 | 21.5 | 5.7 | 26.0 | 36.0 | 0.7 | 26.1 | 31.6 | 10.4 |
| LOS | C | B | A | A | C | A | C | D | A | C | C | B |
| Approach Delay | | 12.1 | | | 20.0 | | | 29.7 | | | 24.3 | |
| Approach LOS | | B | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 24 | 91 | 0 | 2 | 304 | 14 | 59 | 104 | 0 | 43 | 56 | 7 |
| Queue Length 95th (ft) | #74 | 177 | 22 | 8 | 415 | 53 | 89 | 150 | 0 | 69 | 88 | 54 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 224 | 2872 | 949 | 618 | 2547 | 856 | 607 | 871 | 485 | 450 | 871 | 485 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.53 | 0.37 | 0.12 | 0.04 | 0.76 | 0.21 | 0.46 | 0.46 | 0.11 | 0.46 | 0.26 | 0.29 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 82

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 19.9

Intersection LOS: B

Intersection Capacity Utilization 71.1%









ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.






















Queue shown is maximum after two cycles.

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 24.4 s | 9.5 s | 46.5 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 24.4 s | 11 s | 45 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 125 | 1188 | 49 | 24 | 2055 | 43 | 30 | 6 | 13 | 36 | 29 | 29 |
| Future Volume (vph) | 125 | 1188 | 49 | 24 | 2055 | 43 | 30 | 6 | 13 | 36 | 29 | 29 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | 0.900 | | | 0.925 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5070 | 0 | 1770 | 1676 | 0 | 3433 | 1723 | 0 |
| Flt Permitted | 0.082 | | | 0.188 | | | 0.950 | | | 0.659 | | |
| Satd. Flow (perm) | 296 | 5085 | 1583 | 350 | 5070 | 0 | 1770 | 1676 | 0 | 2381 | 1723 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | 5 | | | 14 | | | 32 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 136 | 1291 | 53 | 26 | 2234 | 47 | 33 | 7 | 14 | 39 | 32 | 32 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 136 | 1291 | 53 | 26 | 2281 | 0 | 33 | 21 | 0 | 39 | 64 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 47.0 | 47.0 | 9.6 | 47.0 | | 9.6 | 23.8 | | 9.6 | 23.8 | |
| Total Split (%) | 10.7% | 52.2% | 52.2% | 10.7% | 52.2% | | 10.7% | 26.4% | | 10.7% | 26.4% | |
| Maximum Green (s) | 5.1 | 42.5 | 42.5 | 5.1 | 42.5 | | 5.1 | 19.3 | | 5.1 | 19.3 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 50.4 | 48.5 | 48.5 | 47.5 | 42.4 | | 5.1 | 6.9 | | 10.6 | 8.8 | |
| Actuated g/C Ratio | 0.69 | 0.66 | 0.66 | 0.65 | 0.58 | | 0.07 | 0.09 | | 0.14 | 0.12 | |
| v/c Ratio | 0.32 | 0.38 | 0.05 | 0.08 | 0.78 | | 0.27 | 0.12 | | 0.09 | 0.27 | |
| Control Delay | 6.6 | 7.9 | 0.1 | 5.3 | 15.4 | | 40.7 | 21.6 | | 24.9 | 21.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 6.6 | 7.9 | 0.1 | 5.3 | 15.4 | | 40.7 | 21.6 | | 24.9 | 21.9 | |
| LOS | A | A | A | A | B | | D | C | | C | C | |
| Approach Delay | | 7.5 | | | 15.3 | | | 33.3 | | | 23.1 | |
| Approach LOS | | A | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 9 | 81 | 0 | 3 | 295 | | 15 | 3 | | 7 | 13 | |
| Queue Length 95th (ft) | 20 | 176 | 0 | 12 | 410 | | 44 | 23 | | 19 | 50 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 422 | 3359 | 1089 | 326 | 2962 | | 124 | 454 | | 418 | 480 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.32 | 0.38 | 0.05 | 0.08 | 0.77 | | 0.27 | 0.05 | | 0.09 | 0.13 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 73.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 12.8









Intersection LOS: B

Intersection Capacity Utilization 64.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave




| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.6 s | 23.8 s | 9.6 s | 47 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 9.6 s | 23.8 s | 9.6 s | 47 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|---|------|---|---|------|
| Lane Configurations | |  | |  |  | |
| Traffic Volume (veh/h) | 0 | 84 | 0 | 649 | 447 | 54 |
| Future Volume (Veh/h) | 0 | 84 | 0 | 649 | 447 | 54 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 91 | 0 | 705 | 486 | 59 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.90 | | | | | |
| vC, conflicting volume | 868 | 272 | 545 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 629 | 272 | 545 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 87 | 100 | | | |
| cM capacity (veh/h) | 373 | 725 | 1020 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 91 | 352 | 352 | 324 | 221 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 91 | 0 | 0 | 0 | 59 | |
| cSH | 725 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.13 | 0.21 | 0.21 | 0.19 | 0.13 | |
| Queue Length 95th (ft) | 11 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 10.7 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 10.7 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | 0.7 | | | | |
| Intersection Capacity Utilization | | 25.9% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1219 | 2009 | 166 | 0 | 113 | |
| Future Volume (Veh/h) | 0 | 1219 | 2009 | 166 | 0 | 113 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 1325 | 2184 | 180 | 0 | 123 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.65 | | | | 0.71 | 0.65 | |
| vC, conflicting volume | 2364 | | | | 2716 | 818 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 1208 | | | | 785 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 83 | |
| cM capacity (veh/h) | 372 | | | | 235 | 704 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 442 | 442 | 442 | 874 | 874 | 617 | 123 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 180 | 123 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 704 |
| Volume to Capacity | 0.26 | 0.26 | 0.26 | 0.51 | 0.51 | 0.36 | 0.17 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 16 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.2 |
| Lane LOS | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 11.2 |
| Approach LOS | | | | | | | B |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.4 | | | | |
| Intersection Capacity Utilization | | | 56.2% | | ICU Level of Service | | B |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2




















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 13 | 0 | 61 | 30 | 0 | 1 | 123 | 2 | 41 | 8 | 22 | 0 |
| Future Volume (Veh/h) | 13 | 0 | 61 | 30 | 0 | 1 | 123 | 2 | 41 | 8 | 22 | 0 |
| Sign Control | Stop | | | | Stop | | | | Free | | | |
| Grade | 0% | | | | 0% | | | | 0% | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 14 | 0 | 66 | 33 | 0 | 1 | 134 | 2 | 45 | 9 | 24 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 336 | 357 | 24 | 400 | 334 | 24 | 24 | | | | 47 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 336 | 357 | 24 | 400 | 334 | 24 | 24 | | | | 47 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 98 | 100 | 94 | 93 | 100 | 100 | 92 | | | | 99 | |
| cM capacity (veh/h) | 575 | 518 | 1052 | 489 | 533 | 1052 | 1591 | | | | 1560 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 80 | 34 | 181 | 33 | | | | | | | | |
| Volume Left | 14 | 33 | 134 | 9 | | | | | | | | |
| Volume Right | 66 | 1 | 45 | 0 | | | | | | | | |
| cSH | 919 | 497 | 1591 | 1560 | | | | | | | | |
| Volume to Capacity | 0.09 | 0.07 | 0.08 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 7 | 5 | 7 | 0 | | | | | | | | |
| Control Delay (s) | 9.3 | 12.8 | 5.7 | 2.0 | | | | | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.3 | 12.8 | 5.7 | 2.0 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 29.7% | ICU Level of Service | | | | A | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  |  |
| Traffic Volume (veh/h) | 1 | 6 | 4 | 60 | 6 | 6 | 15 | 87 | 72 | 2 | 30 | 3 |
| Future Volume (Veh/h) | 1 | 6 | 4 | 60 | 6 | 6 | 15 | 87 | 72 | 2 | 30 | 3 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 1 | 7 | 4 | 65 | 7 | 7 | 16 | 95 | 78 | 2 | 33 | 3 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 128 | 244 | 18 | 194 | 206 | 86 | 36 | 173 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 128 | 244 | 18 | 194 | 206 | 86 | 36 | 173 | | | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 100 | 99 | 100 | 91 | 99 | 99 | 99 | 100 | | | | |
| cM capacity (veh/h) | 812 | 650 | 1056 | 732 | 682 | 955 | 1573 | 1401 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 12 | 79 | 16 | 63 | 110 | 2 | 22 | 14 | | | | |
| Volume Left | 1 | 65 | 16 | 0 | 0 | 2 | 0 | 0 | | | | |
| Volume Right | 4 | 7 | 0 | 0 | 78 | 0 | 0 | 3 | | | | |
| cSH | 760 | 743 | 1573 | 1700 | 1700 | 1401 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.02 | 0.11 | 0.01 | 0.04 | 0.06 | 0.00 | 0.01 | 0.01 | | | | |
| Queue Length 95th (ft) | 1 | 9 | 1 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 9.8 | 10.4 | 7.3 | 0.0 | 0.0 | 7.6 | 0.0 | 0.0 | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.8 | 10.4 | 0.6 | 0.4 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 3.4 | | | | | | | | | | | |
| Intersection Capacity Utilization | 24.8% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 4 | 7 | 68 | 0 | 8 | 0 | 60 | 0 | 0 | 0 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 7 | 68 | 0 | 8 | 0 | 60 | 0 | 0 | 0 | 0 | 4 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 4 | 8 | 74 | 0 | 9 | 0 | 65 | 0 | 0 | 0 | 0 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 9 | | | 82 | | | 66 | 62 | 45 | 62 | 99 | 9 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 9 | | | 82 | | | 66 | 62 | 45 | 62 | 99 | 9 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 93 | 100 | 100 | 100 | 100 | 100 |
| cM capacity (veh/h) | 1611 | | | 1515 | | | 922 | 827 | 1025 | 931 | 789 | 1073 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 86 | 9 | 65 | 4 | | | | | | | | |
| Volume Left | 4 | 0 | 65 | 0 | | | | | | | | |
| Volume Right | 74 | 0 | 0 | 4 | | | | | | | | |
| cSH | 1611 | 1515 | 922 | 1073 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.07 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 6 | 0 | | | | | | | | |
| Control Delay (s) | 0.4 | 0.0 | 9.2 | 8.4 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 0.4 | 0.0 | 9.2 | 8.4 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.0 | | | | | | | | |
| Intersection Capacity Utilization | | | | 24.9% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3

10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 20 | 43 | 20 | 0 | 26 | 4 | 0 | 3 | 13 | 0 | 10 | 0 |
| Future Volume (Veh/h) | 20 | 43 | 20 | 0 | 26 | 4 | 0 | 3 | 13 | 0 | 10 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 47 | 22 | 0 | 28 | 4 | 0 | 3 | 14 | 0 | 11 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 39 | 28 | 11 | 66 | 21 | 10 | 11 | | | 17 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 39 | 28 | 11 | 66 | 21 | 10 | 11 | | | 17 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 95 | 98 | 100 | 97 | 100 | 100 | | | 100 | | |
| cM capacity (veh/h) | 938 | 865 | 1070 | 870 | 873 | 1071 | 1608 | | | 1600 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 91 | 32 | 17 | 11 | | | | | | | | |
| Volume Left | 22 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 22 | 4 | 14 | 0 | | | | | | | | |
| cSH | 925 | 893 | 1608 | 1600 | | | | | | | | |
| Volume to Capacity | 0.10 | 0.04 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 8 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 9.3 | 9.2 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 9.3 | 9.2 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 7.6 | | | | | | | | | |
| Intersection Capacity Utilization | | | 21.3% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023




































| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 2 | 4 | 2 | 26 | 6 | 6 |
| Future Volume (Veh/h) | 2 | 4 | 2 | 26 | 6 | 6 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 4 | 2 | 28 | 7 | 7 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 42 | 10 | 14 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 42 | 10 | 14 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 967 | 1071 | 1604 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 6 | 30 | 14 | | | |
| Volume Left | 2 | 2 | 0 | | | |
| Volume Right | 4 | 0 | 7 | | | |
| cSH | 1034 | 1604 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 0 | 0 | 0 | | | |
| Control Delay (s) | 8.5 | 0.5 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.5 | 0.5 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.3 | | | |
| Intersection Capacity Utilization | | | 13.3% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2028 PM PEAK HOUR BUILD-OUT

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 190 | 1468 | 224 | 94 | 1311 | 211 | 169 | 351 | 77 | 357 | 494 | 150 |
| Future Volume (vph) | 190 | 1468 | 224 | 94 | 1311 | 211 | 169 | 351 | 77 | 357 | 494 | 150 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.113 | | | 0.130 | | | 0.321 | | | 0.329 | | |
| Satd. Flow (perm) | 210 | 5085 | 1583 | 470 | 5085 | 1583 | 1160 | 3539 | 1583 | 1189 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 230 | | | 182 | | | 182 | | | 182 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 207 | 1596 | 243 | 102 | 1425 | 229 | 184 | 382 | 84 | 388 | 537 | 163 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 207 | 1596 | 243 | 102 | 1425 | 229 | 184 | 382 | 84 | 388 | 537 | 163 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 17.0 | 42.5 | 42.5 | 9.5 | 35.0 | 35.0 | 10.0 | 25.0 | 25.0 | 13.0 | 28.0 | 28.0 |
| Total Split (%) | 18.9% | 47.2% | 47.2% | 10.6% | 38.9% | 38.9% | 11.1% | 27.8% | 27.8% | 14.4% | 31.1% | 31.1% |
| Maximum Green (s) | 12.5 | 38.0 | 38.0 | 5.0 | 30.5 | 30.5 | 5.5 | 20.5 | 20.5 | 8.5 | 23.5 | 23.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 44.7 | 37.5 | 37.5 | 34.8 | 29.7 | 29.7 | 21.3 | 15.7 | 15.7 | 27.3 | 18.8 | 18.8 |
| Actuated g/C Ratio | 0.54 | 0.45 | 0.45 | 0.42 | 0.36 | 0.36 | 0.26 | 0.19 | 0.19 | 0.33 | 0.23 | 0.23 |
| v/c Ratio | 0.67 | 0.69 | 0.29 | 0.27 | 0.78 | 0.33 | 0.41 | 0.57 | 0.19 | 0.62 | 0.67 | 0.33 |
| Control Delay | 25.6 | 21.1 | 3.8 | 12.4 | 27.8 | 7.2 | 22.2 | 34.2 | 0.9 | 25.1 | 34.0 | 5.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.6 | 21.1 | 3.8 | 12.4 | 27.8 | 7.2 | 22.2 | 34.2 | 0.9 | 25.1 | 34.0 | 5.3 |
| LOS | C | C | A | B | C | A | C | C | A | C | C | A |
| Approach Delay | | 19.5 | | | 24.3 | | | 26.5 | | | 26.5 | |
| Approach LOS | | B | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 53 | 250 | 4 | 12 | 241 | 16 | 35 | 99 | 0 | 78 | 140 | 0 |
| Queue Length 95th (ft) | 132 | 329 | 47 | 25 | 328 | 69 | 57 | 143 | 0 | 114 | 192 | 37 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 351 | 2360 | 857 | 378 | 1930 | 713 | 451 | 886 | 532 | 625 | 1015 | 583 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.68 | 0.28 | 0.27 | 0.74 | 0.32 | 0.41 | 0.43 | 0.16 | 0.62 | 0.53 | 0.28 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 82.7

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 23.2










Intersection LOS: C

Intersection Capacity Utilization 70.7%

ICU Level of Service C






















Analysis Period (min) 15

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 | Ø7 | Ø8 | |
| 13 s | 25 s | 9.5 s | 42.5 s | 10 s | 28 s | 17 s | 35 s | |













Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 183 | 1505 | 172 | 119 | 1346 | 124 | 126 | 42 | 124 | 135 | 36 | 107 |
| Future Volume (vph) | 183 | 1505 | 172 | 119 | 1346 | 124 | 126 | 42 | 124 | 135 | 36 | 107 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.987 | | | 0.888 | | | 0.888 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5019 | 0 | 1770 | 1654 | 0 | 3433 | 1654 | 0 |
| Flt Permitted | 0.122 | | | 0.118 | | | 0.950 | | | 0.643 | | |
| Satd. Flow (perm) | 441 | 5085 | 1583 | 220 | 5019 | 0 | 1770 | 1654 | 0 | 2324 | 1654 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 187 | | 20 | | | 135 | | | 116 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 199 | 1636 | 187 | 129 | 1463 | 135 | 137 | 46 | 135 | 147 | 39 | 116 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 199 | 1636 | 187 | 129 | 1598 | 0 | 137 | 181 | 0 | 147 | 155 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 10.0 | 39.0 | 39.0 | 11.2 | 40.2 | | 15.0 | 30.2 | | 9.6 | 24.8 | |
| Total Split (%) | 11.1% | 43.3% | 43.3% | 12.4% | 44.7% | | 16.7% | 33.6% | | 10.7% | 27.6% | |
| Maximum Green (s) | 5.5 | 34.5 | 34.5 | 6.7 | 35.7 | | 10.5 | 25.7 | | 5.1 | 20.3 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 38.4 | 32.9 | 32.9 | 40.6 | 33.9 | | 9.7 | 12.5 | | 13.1 | 8.0 | |
| Actuated g/C Ratio | 0.51 | 0.44 | 0.44 | 0.54 | 0.45 | | 0.13 | 0.17 | | 0.17 | 0.11 | |
| v/c Ratio | 0.45 | 0.74 | 0.23 | 0.51 | 0.70 | | 0.60 | 0.47 | | 0.31 | 0.56 | |
| Control Delay | 11.2 | 20.4 | 3.3 | 16.4 | 18.8 | | 44.6 | 13.5 | | 22.2 | 19.2 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 11.2 | 20.4 | 3.3 | 16.4 | 18.8 | | 44.6 | 13.5 | | 22.2 | 19.2 | |
| LOS | B | C | A | B | B | | D | B | | C | B | |
| Approach Delay | | 17.9 | | | 18.6 | | | 26.9 | | | 20.7 | |
| Approach LOS | | B | | | B | | | C | | | C | |
| Queue Length 50th (ft) | 19 | 224 | 0 | 24 | 207 | | 62 | 19 | | 26 | 18 | |
| Queue Length 95th (ft) | 38 | 314 | 36 | 63 | 294 | | #137 | 72 | | 47 | 71 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 445 | 2350 | 832 | 258 | 2410 | | 248 | 657 | | 480 | 534 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.45 | 0.70 | 0.22 | 0.50 | 0.66 | | 0.55 | 0.28 | | 0.31 | 0.29 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 75.3

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 19.0

Intersection LOS: B

Intersection Capacity Utilization 66.1%









ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.










Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 30.2 s | 11.2 s | 39 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 15 s | 24.8 s | 10 s | 40.2 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

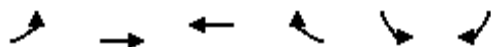
10/05/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | |  | |  |  | |
| Traffic Volume (veh/h) | 0 | 85 | 0 | 758 | 916 | 59 |
| Future Volume (Veh/h) | 0 | 85 | 0 | 758 | 916 | 59 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 92 | 0 | 824 | 996 | 64 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.91 | | | | | |
| vC, conflicting volume | 1440 | 530 | 1060 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1277 | 530 | 1060 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 81 | 100 | | | |
| cM capacity (veh/h) | 143 | 493 | 653 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 92 | 412 | 412 | 664 | 396 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 92 | 0 | 0 | 0 | 64 | |
| cSH | 493 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.19 | 0.24 | 0.24 | 0.39 | 0.23 | |
| Queue Length 95th (ft) | 17 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 14.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 14.0 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.6 | | | |
| Intersection Capacity Utilization | | | 39.1% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↓ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1881 | 1479 | 152 | 0 | 110 | |
| Future Volume (Veh/h) | 0 | 1881 | 1479 | 152 | 0 | 110 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 2045 | 1608 | 165 | 0 | 120 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.75 | | | | 0.86 | 0.75 | |
| vC, conflicting volume | 1773 | | | | 2372 | 618 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 866 | | | | 51 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 85 | |
| cM capacity (veh/h) | 580 | | | | 815 | 814 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 682 | 682 | 682 | 643 | 643 | 487 | 120 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 165 | 120 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 814 |
| Volume to Capacity | 0.40 | 0.40 | 0.40 | 0.38 | 0.38 | 0.29 | 0.15 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.2 |
| Lane LOS | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 10.2 |
| Approach LOS | | | | | | | B |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.3 | | | | |
| Intersection Capacity Utilization | | | 45.4% | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 12 | 0 | 52 | 36 | 0 | 11 | 103 | 2 | 46 | 14 | 21 | 0 |
| Future Volume (Veh/h) | 12 | 0 | 52 | 36 | 0 | 11 | 103 | 2 | 46 | 14 | 21 | 0 |
| Sign Control | Stop | | | | Stop | | | | Free | | Free | |
| Grade | 0% | | | | 0% | | | | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 13 | 0 | 57 | 39 | 0 | 12 | 112 | 2 | 50 | 15 | 23 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 316 | 329 | 23 | 361 | 304 | 27 | 23 | | | | 52 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 316 | 329 | 23 | 361 | 304 | 27 | 23 | | | | 52 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 98 | 100 | 95 | 93 | 100 | 99 | 93 | | | | 99 | |
| cM capacity (veh/h) | 591 | 543 | 1054 | 528 | 561 | 1048 | 1592 | | | | 1554 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 70 | 51 | 164 | 38 | | | | | | | | |
| Volume Left | 13 | 39 | 112 | 15 | | | | | | | | |
| Volume Right | 57 | 12 | 50 | 0 | | | | | | | | |
| cSH | 920 | 598 | 1592 | 1554 | | | | | | | | |
| Volume to Capacity | 0.08 | 0.09 | 0.07 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 6 | 7 | 6 | 1 | | | | | | | | |
| Control Delay (s) | 9.2 | 11.6 | 5.2 | 2.9 | | | | | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.2 | 11.6 | 5.2 | 2.9 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 29.5% | ICU Level of Service | | | | A | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 8 | 12 | 70 | 62 | 17 | 13 | 75 | 201 | 73 | 11 | 147 | 35 |
| Future Volume (Veh/h) | 8 | 12 | 70 | 62 | 17 | 13 | 75 | 201 | 73 | 11 | 147 | 35 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 9 | 13 | 76 | 67 | 18 | 14 | 82 | 218 | 79 | 12 | 160 | 38 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 499 | 664 | 99 | 608 | 644 | 148 | 198 | 297 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 499 | 664 | 99 | 608 | 644 | 148 | 198 | 297 | | | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 98 | 96 | 92 | 79 | 95 | 98 | 94 | 99 | | | | |
| cM capacity (veh/h) | 408 | 353 | 937 | 321 | 363 | 871 | 1372 | 1261 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 98 | 99 | 82 | 145 | 152 | 12 | 107 | 91 | | | | |
| Volume Left | 9 | 67 | 82 | 0 | 0 | 12 | 0 | 0 | | | | |
| Volume Right | 76 | 14 | 0 | 0 | 79 | 0 | 0 | 38 | | | | |
| cSH | 700 | 361 | 1372 | 1700 | 1700 | 1261 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.14 | 0.27 | 0.06 | 0.09 | 0.09 | 0.01 | 0.06 | 0.05 | | | | |
| Queue Length 95th (ft) | 12 | 27 | 5 | 0 | 0 | 1 | 0 | 0 | | | | |
| Control Delay (s) | 11.0 | 18.7 | 7.8 | 0.0 | 0.0 | 7.9 | 0.0 | 0.0 | | | | |
| Lane LOS | B | C | A | A | | | | | | | | |
| Approach Delay (s) | 11.0 | 18.7 | 1.7 | 0.5 | | | | | | | | |
| Approach LOS | B | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 4.7 | | | | | | | | | | | |
| Intersection Capacity Utilization | 33.0% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 14 | 22 | 59 | 0 | 26 | 0 | 47 | 0 | 0 | 0 | 0 | 18 |
| Future Volume (Veh/h) | 14 | 22 | 59 | 0 | 26 | 0 | 47 | 0 | 0 | 0 | 0 | 18 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 15 | 24 | 64 | 0 | 28 | 0 | 51 | 0 | 0 | 0 | 0 | 20 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 28 | | | 88 | | | 134 | 114 | 56 | 114 | 146 | 28 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 28 | | | 88 | | | 134 | 114 | 56 | 114 | 146 | 28 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 94 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1585 | | | 1508 | | | 816 | 769 | 1011 | 857 | 738 | 1047 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 103 | 28 | 51 | 20 | | | | | | | | |
| Volume Left | 15 | 0 | 51 | 0 | | | | | | | | |
| Volume Right | 64 | 0 | 0 | 20 | | | | | | | | |
| cSH | 1585 | 1508 | 816 | 1047 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.06 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 1 | 0 | 5 | 1 | | | | | | | | |
| Control Delay (s) | 1.1 | 0.0 | 9.7 | 8.5 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 1.1 | 0.0 | 9.7 | 8.5 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 3.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 28.2% | ICU Level of Service | | | | A | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Site Access 3/Internal Road 3










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 20 | 34 | 17 | 0 | 20 | 13 | 0 | 13 | 12 | 0 | 19 | 0 |
| Future Volume (Veh/h) | 20 | 34 | 17 | 0 | 20 | 13 | 0 | 13 | 12 | 0 | 19 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 37 | 18 | 0 | 22 | 14 | 0 | 14 | 13 | 0 | 21 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 66 | 48 | 21 | 78 | 42 | 20 | 21 | 27 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 66 | 48 | 21 | 78 | 42 | 20 | 21 | 27 | | | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 98 | 96 | 98 | 100 | 97 | 99 | 100 | 100 | | | | |
| cM capacity (veh/h) | 896 | 844 | 1056 | 865 | 850 | 1057 | 1595 | 1587 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 77 | 36 | 27 | 21 | | | | | | | | |
| Volume Left | 22 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 18 | 14 | 13 | 0 | | | | | | | | |
| cSH | 901 | 920 | 1595 | 1587 | | | | | | | | |
| Volume to Capacity | 0.09 | 0.04 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 7 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 9.4 | 9.1 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 9.4 | 9.1 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 6.5 | | | | | | | | | | | |
| Intersection Capacity Utilization | 20.6% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2 & Internal Road 1

10/05/2023


































| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 9 | 13 | 21 | 26 | 6 | 6 |
| Future Volume (Veh/h) | 9 | 13 | 21 | 26 | 6 | 6 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 10 | 14 | 23 | 28 | 7 | 7 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 84 | 10 | 14 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 84 | 10 | 14 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 99 | 99 | | | |
| cM capacity (veh/h) | 904 | 1071 | 1604 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 24 | 51 | 14 | | | |
| Volume Left | 10 | 23 | 0 | | | |
| Volume Right | 14 | 0 | 7 | | | |
| cSH | 994 | 1604 | 1700 | | | |
| Volume to Capacity | 0.02 | 0.01 | 0.01 | | | |
| Queue Length 95th (ft) | 2 | 1 | 0 | | | |
| Control Delay (s) | 8.7 | 3.3 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.7 | 3.3 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 4.3 | | | |
| Intersection Capacity Utilization | | 19.2% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2040 AM PEAK HOUR BUILD-OUT

Lanes, Volumes, Timings













1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|--|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 138 | 1235 | 132 | 32 | 2260 | 209 | 323 | 463 | 60 | 230 | 260 | 168 |
| Future Volume (vph) | 138 | 1235 | 132 | 32 | 2260 | 209 | 323 | 463 | 60 | 230 | 260 | 168 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.086 | | | 0.150 | | | 0.509 | | | 0.249 | | |
| Satd. Flow (perm) | 160 | 5085 | 1583 | 542 | 5085 | 1583 | 1839 | 3539 | 1583 | 900 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | | 127 | | | 127 | | | 127 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 150 | 1342 | 143 | 35 | 2457 | 227 | 351 | 503 | 65 | 250 | 283 | 183 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 150 | 1342 | 143 | 35 | 2457 | 227 | 351 | 503 | 65 | 250 | 283 | 183 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 9.5 | 47.0 | 47.0 | 9.5 | 47.0 | 47.0 | 9.6 | 23.9 | 23.9 | 9.6 | 23.9 | 23.9 |
| Total Split (%) | 10.6% | 52.2% | 52.2% | 10.6% | 52.2% | 52.2% | 10.7% | 26.6% | 26.6% | 10.7% | 26.6% | 26.6% |
| Maximum Green (s) | 5.0 | 42.5 | 42.5 | 5.0 | 42.5 | 42.5 | 5.1 | 19.4 | 19.4 | 5.1 | 19.4 | 19.4 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings
1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 49.4 | 46.5 | 46.5 | 47.5 | 42.5 | 42.5 | 22.2 | 17.1 | 17.1 | 22.2 | 17.1 | 17.1 |
| Actuated g/C Ratio | 0.56 | 0.53 | 0.53 | 0.54 | 0.48 | 0.48 | 0.25 | 0.19 | 0.19 | 0.25 | 0.19 | 0.19 |
| v/c Ratio | 0.83 | 0.50 | 0.16 | 0.08 | 1.00 | 0.27 | 0.63 | 0.73 | 0.16 | 0.67 | 0.41 | 0.45 |
| Control Delay | 51.6 | 15.1 | 2.9 | 8.5 | 41.2 | 7.2 | 30.9 | 40.0 | 1.1 | 33.3 | 32.7 | 14.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.6 | 15.1 | 2.9 | 8.5 | 41.2 | 7.2 | 30.9 | 40.0 | 1.1 | 33.3 | 32.7 | 14.6 |
| LOS | D | B | A | A | D | A | C | D | A | C | C | B |
| Approach Delay | | 17.4 | | | 38.0 | | | 33.8 | | | 28.3 | |
| Approach LOS | | B | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 37 | 189 | 0 | 4 | ~505 | 30 | 76 | 138 | 0 | 53 | 72 | 26 |
| Queue Length 95th (ft) | #149 | 235 | 30 | 10 | #645 | 74 | 112 | 192 | 3 | 82 | 110 | 84 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 181 | 2694 | 906 | 458 | 2466 | 832 | 557 | 783 | 449 | 374 | 783 | 449 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.83 | 0.50 | 0.16 | 0.08 | 1.00 | 0.27 | 0.63 | 0.64 | 0.14 | 0.67 | 0.36 | 0.41 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 87.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 30.5

Intersection LOS: C

Intersection Capacity Utilization 85.7%

ICU Level of Service E

Analysis Period (min) 15









~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.






















Queue shown is maximum after two cycles.

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 9.6 s | 23.9 s | 9.5 s | 47 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 9.6 s | 23.9 s | 9.5 s | 47 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 141 | 1519 | 62 | 31 | 2610 | 55 | 38 | 8 | 17 | 38 | 37 | 30 |
| Future Volume (vph) | 141 | 1519 | 62 | 31 | 2610 | 55 | 38 | 8 | 17 | 38 | 37 | 30 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.997 | | | 0.900 | | | 0.932 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5070 | 0 | 1770 | 1676 | 0 | 3433 | 1736 | 0 |
| Flt Permitted | 0.082 | | | 0.115 | | | 0.950 | | | 0.740 | | |
| Satd. Flow (perm) | 296 | 5085 | 1583 | 214 | 5070 | 0 | 1770 | 1676 | 0 | 2674 | 1736 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 127 | | 5 | | | 18 | | | 33 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 153 | 1651 | 67 | 34 | 2837 | 60 | 41 | 9 | 18 | 41 | 40 | 33 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 153 | 1651 | 67 | 34 | 2897 | 0 | 41 | 27 | 0 | 41 | 73 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.5 | 46.9 | 46.9 | 9.6 | 47.0 | | 9.5 | 24.0 | | 9.5 | 24.0 | |
| Total Split (%) | 10.6% | 52.1% | 52.1% | 10.7% | 52.2% | | 10.6% | 26.7% | | 10.6% | 26.7% | |
| Maximum Green (s) | 5.0 | 42.4 | 42.4 | 5.1 | 42.5 | | 5.0 | 19.5 | | 5.0 | 19.5 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 50.7 | 48.8 | 48.8 | 47.9 | 42.8 | | 5.0 | 7.4 | | 10.2 | 7.4 | |
| Actuated g/C Ratio | 0.68 | 0.66 | 0.66 | 0.65 | 0.58 | | 0.07 | 0.10 | | 0.14 | 0.10 | |
| v/c Ratio | 0.37 | 0.49 | 0.06 | 0.14 | 0.99 | | 0.34 | 0.15 | | 0.10 | 0.36 | |
| Control Delay | 7.4 | 9.1 | 0.4 | 6.1 | 32.8 | | 43.6 | 20.6 | | 24.7 | 25.7 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 7.4 | 9.1 | 0.4 | 6.1 | 32.8 | | 43.6 | 20.6 | | 24.7 | 25.7 | |
| LOS | A | A | A | A | C | | D | C | | C | C | |
| Approach Delay | | 8.6 | | | 32.5 | | | 34.4 | | | 25.3 | |
| Approach LOS | | A | | | C | | | C | | | C | |
| Queue Length 50th (ft) | 11 | 122 | 0 | 5 | ~567 | | 20 | 4 | | 8 | 18 | |
| Queue Length 95th (ft) | 23 | 248 | 3 | 15 | #711 | | 51 | 27 | | 20 | 56 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 415 | 3345 | 1084 | 246 | 2927 | | 120 | 457 | | 419 | 483 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.37 | 0.49 | 0.06 | 0.14 | 0.99 | | 0.34 | 0.06 | | 0.10 | 0.15 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 74.2

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 23.4

Intersection LOS: C

Intersection Capacity Utilization 75.8%

ICU Level of Service D

Analysis Period (min) 15









~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave




| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.5 s | 24 s | 9.6 s | 46.9 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 9.5 s | 24 s | 9.5 s | 47 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Internal Road 3

10/05/2023



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|---|-------|---|---|------|
| Lane Configurations | |  | |  |  | |
| Traffic Volume (veh/h) | 0 | 91 | 0 | 820 | 567 | 61 |
| Future Volume (Veh/h) | 0 | 91 | 0 | 820 | 567 | 61 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 99 | 0 | 891 | 616 | 66 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.87 | | | | | |
| vC, conflicting volume | 1094 | 341 | 682 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 806 | 341 | 682 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 85 | 100 | | | |
| cM capacity (veh/h) | 278 | 655 | 907 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 99 | 446 | 446 | 411 | 271 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 99 | 0 | 0 | 0 | 66 | |
| cSH | 655 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.15 | 0.26 | 0.26 | 0.24 | 0.16 | |
| Queue Length 95th (ft) | 13 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 11.5 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | B | | | | | |
| Approach Delay (s) | 11.5 | 0.0 | | 0.0 | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 29.9% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Internal Road 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | |
|-----------------------------------|------|------|-------|------|----------------------|------|------|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | |
| Traffic Volume (veh/h) | 0 | 1552 | 2573 | 178 | 0 | 122 | |
| Future Volume (Veh/h) | 0 | 1552 | 2573 | 178 | 0 | 122 | |
| Sign Control | | Free | Free | | Stop | | |
| Grade | | 0% | 0% | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | |
| Hourly flow rate (vph) | 0 | 1687 | 2797 | 193 | 0 | 133 | |
| Pedestrians | | | | | | | |
| Lane Width (ft) | | | | | | | |
| Walking Speed (ft/s) | | | | | | | |
| Percent Blockage | | | | | | | |
| Right turn flare (veh) | | | | | | | |
| Median type | | None | None | | | | |
| Median storage veh | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | |
| pX, platoon unblocked | 0.46 | | | | 0.56 | 0.46 | |
| vC, conflicting volume | 2990 | | | | 3456 | 1029 | |
| vC1, stage 1 conf vol | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | |
| vCu, unblocked vol | 1249 | | | | 398 | 0 | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | |
| tC, 2 stage (s) | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | |
| p0 queue free % | 100 | | | | 100 | 74 | |
| cM capacity (veh/h) | 257 | | | | 322 | 504 | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 |
| Volume Total | 562 | 562 | 562 | 1119 | 1119 | 752 | 133 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 193 | 133 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 504 |
| Volume to Capacity | 0.33 | 0.33 | 0.33 | 0.66 | 0.66 | 0.44 | 0.26 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.7 |
| Lane LOS | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 14.7 |
| Approach LOS | | | | | | | B |
| Intersection Summary | | | | | | | |
| Average Delay | | | 0.4 | | | | |
| Intersection Capacity Utilization | | | 67.9% | | ICU Level of Service | | C |
| Analysis Period (min) | | | 15 | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Internal Road 2 & Site Access 2



















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 13 | 0 | 61 | 38 | 0 | 1 | 123 | 3 | 52 | 10 | 23 | 0 |
| Future Volume (Veh/h) | 13 | 0 | 61 | 38 | 0 | 1 | 123 | 3 | 52 | 10 | 23 | 0 |
| Sign Control | Stop | | | | Stop | | | | Free | | | |
| Grade | 0% | | | | 0% | | | | 0% | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 14 | 0 | 66 | 41 | 0 | 1 | 134 | 3 | 57 | 11 | 25 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 348 | 375 | 25 | 412 | 346 | 32 | 25 | | | | 60 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 348 | 375 | 25 | 412 | 346 | 32 | 25 | | | | 60 | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 98 | 100 | 94 | 91 | 100 | 100 | 92 | | | | 99 | |
| cM capacity (veh/h) | 564 | 505 | 1051 | 480 | 524 | 1043 | 1589 | | | | 1544 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 80 | 42 | 194 | 36 | | | | | | | | |
| Volume Left | 14 | 41 | 134 | 11 | | | | | | | | |
| Volume Right | 66 | 1 | 57 | 0 | | | | | | | | |
| cSH | 913 | 486 | 1589 | 1544 | | | | | | | | |
| Volume to Capacity | 0.09 | 0.09 | 0.08 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 7 | 7 | 7 | 1 | | | | | | | | |
| Control Delay (s) | 9.3 | 13.1 | 5.4 | 2.3 | | | | | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.3 | 13.1 | 5.4 | 2.3 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 32.2% | ICU Level of Service | | | | A | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 1 | 7 | 6 | 62 | 7 | 7 | 20 | 111 | 73 | 2 | 38 | 4 |
| Future Volume (Veh/h) | 1 | 7 | 6 | 62 | 7 | 7 | 20 | 111 | 73 | 2 | 38 | 4 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 1 | 8 | 7 | 67 | 8 | 8 | 22 | 121 | 79 | 2 | 41 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 164 | 291 | 22 | 240 | 254 | 100 | 45 | | | | 200 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 164 | 291 | 22 | 240 | 254 | 100 | 45 | | | | 200 | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 100 | 99 | 99 | 90 | 99 | 99 | 99 | | | | 100 | |
| cM capacity (veh/h) | 762 | 609 | 1049 | 674 | 639 | 936 | 1561 | | | | 1370 | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 16 | 83 | 22 | 81 | 119 | 2 | 27 | 18 | | | | |
| Volume Left | 1 | 67 | 22 | 0 | 0 | 2 | 0 | 0 | | | | |
| Volume Right | 7 | 8 | 0 | 0 | 79 | 0 | 0 | 4 | | | | |
| cSH | 757 | 689 | 1561 | 1700 | 1700 | 1370 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.02 | 0.12 | 0.01 | 0.05 | 0.07 | 0.00 | 0.02 | 0.01 | | | | |
| Queue Length 95th (ft) | 2 | 10 | 1 | 0 | 0 | 0 | 0 | 0 | | | | |
| Control Delay (s) | 9.9 | 10.9 | 7.3 | 0.0 | 0.0 | 7.6 | 0.0 | 0.0 | | | | |
| Lane LOS | A | B | A | | | | A | | | | | |
| Approach Delay (s) | 9.9 | 10.9 | 0.7 | | | | 0.3 | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 3.4 | | | | | | | | |
| Intersection Capacity Utilization | | | | 25.3% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1 & Internal Road 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 6 | 8 | 68 | 0 | 10 | 0 | 60 | 0 | 0 | 0 | 0 | 6 |
| Future Volume (Veh/h) | 6 | 8 | 68 | 0 | 10 | 0 | 60 | 0 | 0 | 0 | 0 | 6 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 7 | 9 | 74 | 0 | 11 | 0 | 65 | 0 | 0 | 0 | 0 | 7 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 11 | | | 83 | | | 78 | 71 | 46 | 71 | 108 | 11 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 11 | | | 83 | | | 78 | 71 | 46 | 71 | 108 | 11 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 93 | 100 | 100 | 100 | 100 | 99 |
| cM capacity (veh/h) | 1608 | | | 1514 | | | 902 | 816 | 1023 | 917 | 779 | 1070 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 90 | 11 | 65 | 7 | | | | | | | | |
| Volume Left | 7 | 0 | 65 | 0 | | | | | | | | |
| Volume Right | 74 | 0 | 0 | 7 | | | | | | | | |
| cSH | 1608 | 1514 | 902 | 1070 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.00 | 0.07 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 6 | 0 | | | | | | | | |
| Control Delay (s) | 0.6 | 0.0 | 9.3 | 8.4 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 0.6 | 0.0 | 9.3 | 8.4 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 4.1 | | | | | | | | |
| Intersection Capacity Utilization | | | | 26.9% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17: Internal Road 2 & Internal Road 3

10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 20 | 43 | 20 | 0 | 26 | 4 | 0 | 4 | 13 | 0 | 13 | 0 |
| Future Volume (Veh/h) | 20 | 43 | 20 | 0 | 26 | 4 | 0 | 4 | 13 | 0 | 13 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 47 | 22 | 0 | 28 | 4 | 0 | 4 | 14 | 0 | 14 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 43 | 32 | 14 | 70 | 25 | 11 | 14 | 18 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 43 | 32 | 14 | 70 | 25 | 11 | 14 | 18 | | | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 98 | 95 | 98 | 100 | 97 | 100 | 100 | 100 | | | | |
| cM capacity (veh/h) | 933 | 861 | 1066 | 864 | 868 | 1070 | 1604 | 1599 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 91 | 32 | 18 | 14 | | | | | | | | |
| Volume Left | 22 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 22 | 4 | 14 | 0 | | | | | | | | |
| cSH | 921 | 889 | 1604 | 1599 | | | | | | | | |
| Volume to Capacity | 0.10 | 0.04 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 8 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 9.3 | 9.2 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 9.3 | 9.2 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 7.4 | | | | | | | | | | | |
| Intersection Capacity Utilization | 21.3% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25: Internal Road 2/North/South Internal Road & Internal Road 1

10/05/2023




































| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|-------|------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 3 | 6 | 3 | 27 | 7 | 7 |
| Future Volume (Veh/h) | 3 | 6 | 3 | 27 | 7 | 7 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 3 | 7 | 3 | 29 | 8 | 8 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 47 | 12 | 16 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 47 | 12 | 16 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 99 | 100 | | | |
| cM capacity (veh/h) | 961 | 1069 | 1602 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 10 | 32 | 16 | | | |
| Volume Left | 3 | 3 | 0 | | | |
| Volume Right | 7 | 0 | 8 | | | |
| cSH | 1034 | 1602 | 1700 | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 1 | 0 | 0 | | | |
| Control Delay (s) | 8.5 | 0.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.5 | 0.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.9 | | | |
| Intersection Capacity Utilization | | 13.9% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

2040 PM PEAK HOUR BUILD-OUT

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 240 | 1865 | 285 | 119 | 1657 | 267 | 213 | 445 | 98 | 443 | 624 | 190 |
| Future Volume (vph) | 240 | 1865 | 285 | 119 | 1657 | 267 | 213 | 445 | 98 | 443 | 624 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 5085 | 1583 | 3433 | 5085 | 1583 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.105 | | | 0.119 | | | 0.220 | | | 0.249 | | |
| Satd. Flow (perm) | 196 | 5085 | 1583 | 430 | 5085 | 1583 | 795 | 3539 | 1583 | 900 | 3539 | 1583 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 236 | | | 182 | | | 182 | | | 182 |
| Link Speed (mph) | | 40 | | | 40 | | | 35 | | | 35 | |
| Link Distance (ft) | | 280 | | | 250 | | | 250 | | | 250 | |
| Travel Time (s) | | 4.8 | | | 4.3 | | | 4.9 | | | 4.9 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 261 | 2027 | 310 | 129 | 1801 | 290 | 232 | 484 | 107 | 482 | 678 | 207 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 261 | 2027 | 310 | 129 | 1801 | 290 | 232 | 484 | 107 | 482 | 678 | 207 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 15.0 | 43.5 | 43.5 | 9.5 | 38.0 | 38.0 | 10.0 | 24.0 | 24.0 | 13.0 | 27.0 | 27.0 |
| Total Split (%) | 16.7% | 48.3% | 48.3% | 10.6% | 42.2% | 42.2% | 11.1% | 26.7% | 26.7% | 14.4% | 30.0% | 30.0% |
| Maximum Green (s) | 10.5 | 39.0 | 39.0 | 5.0 | 33.5 | 33.5 | 5.5 | 19.5 | 19.5 | 8.5 | 22.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | Min | Min | None | Min | Min |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 |

Lanes, Volumes, Timings

1: S. Sable Boulevard & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | | 11.0 | 11.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 48.5 | 39.0 | 39.0 | 38.5 | 33.5 | 33.5 | 23.7 | 18.2 | 18.2 | 29.7 | 21.2 | 21.2 |
| Actuated g/C Ratio | 0.55 | 0.44 | 0.44 | 0.43 | 0.38 | 0.38 | 0.27 | 0.21 | 0.21 | 0.33 | 0.24 | 0.24 |
| v/c Ratio | 0.89 | 0.91 | 0.37 | 0.36 | 0.94 | 0.41 | 0.62 | 0.67 | 0.23 | 0.89 | 0.80 | 0.40 |
| Control Delay | 52.3 | 30.7 | 5.9 | 13.7 | 37.9 | 9.8 | 28.5 | 37.5 | 1.6 | 43.3 | 40.0 | 8.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 52.3 | 30.7 | 5.9 | 13.7 | 37.9 | 9.8 | 28.5 | 37.5 | 1.6 | 43.3 | 40.0 | 8.7 |
| LOS | D | C | A | B | D | A | C | D | A | D | D | A |
| Approach Delay | | 29.9 | | | 32.8 | | | 30.3 | | | 36.4 | |
| Approach LOS | | C | | | C | | | C | | | D | |
| Queue Length 50th (ft) | 96 | 386 | 24 | 17 | 357 | 41 | 45 | 132 | 0 | 103 | 188 | 11 |
| Queue Length 95th (ft) | #239 | #476 | 77 | 30 | #469 | 103 | 72 | 185 | 5 | #152 | 253 | 65 |
| Internal Link Dist (ft) | | 200 | | | 170 | | | 170 | | | 170 | |
| Turn Bay Length (ft) | 160 | | 175 | 175 | | 100 | 275 | | 275 | 150 | | 150 |
| Base Capacity (vph) | 293 | 2236 | 828 | 355 | 1921 | 711 | 376 | 778 | 489 | 544 | 897 | 537 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.89 | 0.91 | 0.37 | 0.36 | 0.94 | 0.41 | 0.62 | 0.62 | 0.22 | 0.89 | 0.76 | 0.39 |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 88.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 32.2

Intersection LOS: C

Intersection Capacity Utilization 85.3%









ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.






















Queue shown is maximum after two cycles.

Splits and Phases: 1: S. Sable Boulevard & E. Alameda Ave

| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 | Ø3 | Ø4 |
| 13 s | 24 s | 9.5 s | 43.5 s |
|  |  |  |  |
| Ø5 | Ø6 | Ø7 | Ø8 |
| 10 s | 27 s | 15 s | 38 s |

Lanes, Volumes, Timings
9: S. Crystal Street & E. Alameda Ave













10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 217 | 1919 | 218 | 151 | 1709 | 157 | 160 | 53 | 157 | 164 | 46 | 131 |
| Future Volume (vph) | 217 | 1919 | 218 | 151 | 1709 | 157 | 160 | 53 | 157 | 164 | 46 | 131 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 150 | | 0 | 0 | | 0 | 150 | | 0 |
| Storage Lanes | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.987 | | | 0.888 | | | 0.889 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 1770 | 5019 | 0 | 1770 | 1654 | 0 | 3433 | 1656 | 0 |
| Flt Permitted | 0.105 | | | 0.104 | | | 0.950 | | | 0.579 | | |
| Satd. Flow (perm) | 379 | 5085 | 1583 | 194 | 5019 | 0 | 1770 | 1654 | 0 | 2092 | 1656 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 236 | | 21 | | | 149 | | | 132 | |
| Link Speed (mph) | | 40 | | | 40 | | | 25 | | | 25 | |
| Link Distance (ft) | | 250 | | | 340 | | | 250 | | | 340 | |
| Travel Time (s) | | 4.3 | | | 5.8 | | | 6.8 | | | 9.3 | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 236 | 2086 | 237 | 164 | 1858 | 171 | 174 | 58 | 171 | 178 | 50 | 142 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 236 | 2086 | 237 | 164 | 2029 | 0 | 174 | 229 | 0 | 178 | 192 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | Prot | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 9.6 | 42.4 | 42.4 | 10.2 | 43.0 | | 14.3 | 27.8 | | 9.6 | 23.1 | |
| Total Split (%) | 10.7% | 47.1% | 47.1% | 11.3% | 47.8% | | 15.9% | 30.9% | | 10.7% | 25.7% | |
| Maximum Green (s) | 5.1 | 37.9 | 37.9 | 5.7 | 38.5 | | 9.8 | 23.3 | | 5.1 | 18.6 | |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |

Lanes, Volumes, Timings

9: S. Crystal Street & E. Alameda Ave

10/05/2023

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Flash Dont Walk (s) | | 11.0 | 11.0 | | 11.0 | | | 11.0 | | | 11.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 43.1 | 38.0 | 38.0 | 44.3 | 38.6 | | 9.8 | 13.8 | | 14.2 | 9.1 | |
| Actuated g/C Ratio | 0.53 | 0.47 | 0.47 | 0.55 | 0.48 | | 0.12 | 0.17 | | 0.18 | 0.11 | |
| v/c Ratio | 0.60 | 0.87 | 0.27 | 0.75 | 0.84 | | 0.81 | 0.56 | | 0.39 | 0.63 | |
| Control Delay | 15.6 | 25.0 | 3.0 | 36.1 | 23.0 | | 64.8 | 17.2 | | 24.4 | 22.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 15.6 | 25.0 | 3.0 | 36.1 | 23.0 | | 64.8 | 17.2 | | 24.4 | 22.1 | |
| LOS | B | C | A | D | C | | E | B | | C | C | |
| Approach Delay | | 22.1 | | | 24.0 | | | 37.7 | | | 23.2 | |
| Approach LOS | | C | | | C | | | D | | | C | |
| Queue Length 50th (ft) | 23 | 324 | 0 | 32 | 303 | | 86 | 36 | | 34 | 28 | |
| Queue Length 95th (ft) | 50 | #501 | 40 | #142 | #434 | | #209 | 100 | | 57 | 90 | |
| Internal Link Dist (ft) | | 170 | | | 260 | | | 170 | | | 260 | |
| Turn Bay Length (ft) | 150 | | | 150 | | | | | | 150 | | |
| Base Capacity (vph) | 396 | 2395 | 870 | 218 | 2412 | | 215 | 584 | | 453 | 484 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.60 | 0.87 | 0.27 | 0.75 | 0.84 | | 0.81 | 0.39 | | 0.39 | 0.40 | |

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 80.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 24.0

Intersection LOS: C

Intersection Capacity Utilization 79.8%









ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 9: S. Crystal Street & E. Alameda Ave

| | | | |
|--|--|--|--|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |
| 9.6 s | 27.8 s | 10.2 s | 42.4 s |
|  Ø5 |  Ø6 |  Ø7 |  Ø8 |
| 14.3 s | 23.1 s | 9.6 s | 43 s |

HCM Unsignalized Intersection Capacity Analysis

2: S. Sable Boulevard & Site Access 3

10/05/2023



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | ↗ | | ↑↑ | ↑↑↗ | |
| Traffic Volume (veh/h) | 0 | 95 | 0 | 959 | 1162 | 69 |
| Future Volume (Veh/h) | 0 | 95 | 0 | 959 | 1162 | 69 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 103 | 0 | 1042 | 1263 | 75 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | 250 | | |
| pX, platoon unblocked | 0.88 | | | | | |
| vC, conflicting volume | 1822 | 669 | 1338 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1656 | 669 | 1338 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 74 | 100 | | | |
| cM capacity (veh/h) | 78 | 400 | 511 | | | |
| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 | |
| Volume Total | 103 | 521 | 521 | 842 | 496 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 103 | 0 | 0 | 0 | 75 | |
| cSH | 400 | 1700 | 1700 | 1700 | 1700 | |
| Volume to Capacity | 0.26 | 0.31 | 0.31 | 0.50 | 0.29 | |
| Queue Length 95th (ft) | 25 | 0 | 0 | 0 | 0 | |
| Control Delay (s) | 17.1 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Lane LOS | C | | | | | |
| Approach Delay (s) | 17.1 | 0.0 | | 0.0 | | |
| Approach LOS | C | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.7 | | | |
| Intersection Capacity Utilization | | | 46.9% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

5: E. Alameda Ave & Site Access 2

10/05/2023



















| Movement | EBL | EBT | WBT | WBR | SBL | SBR | | |
|-----------------------------------|------|------|-------|------|------|----------------------|------|---|
| Lane Configurations | | ↑↑↑↑ | ↑↑↑↑ | | | ↗ | | |
| Traffic Volume (veh/h) | 0 | 2390 | 1896 | 165 | 0 | 121 | | |
| Future Volume (Veh/h) | 0 | 2390 | 1896 | 165 | 0 | 121 | | |
| Sign Control | | Free | Free | | Stop | | | |
| Grade | | 0% | 0% | | 0% | | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | | |
| Hourly flow rate (vph) | 0 | 2598 | 2061 | 179 | 0 | 132 | | |
| Pedestrians | | | | | | | | |
| Lane Width (ft) | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | |
| Percent Blockage | | | | | | | | |
| Right turn flare (veh) | | | | | | | | |
| Median type | | None | None | | | | | |
| Median storage veh | | | | | | | | |
| Upstream signal (ft) | | 340 | 280 | | | | | |
| pX, platoon unblocked | 0.64 | | | | 0.81 | 0.64 | | |
| vC, conflicting volume | 2240 | | | | 3016 | 776 | | |
| vC1, stage 1 conf vol | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | |
| vCu, unblocked vol | 951 | | | | 0 | 0 | | |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 | | |
| tC, 2 stage (s) | | | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 | | |
| p0 queue free % | 100 | | | | 100 | 81 | | |
| cM capacity (veh/h) | 457 | | | | 825 | 690 | | |
| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | SB 1 | |
| Volume Total | 866 | 866 | 866 | 824 | 824 | 591 | 132 | |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 179 | 132 | |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 690 | |
| Volume to Capacity | 0.51 | 0.51 | 0.51 | 0.48 | 0.48 | 0.35 | 0.19 | |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 18 | |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.4 | |
| Lane LOS | | | | | | | B | |
| Approach Delay (s) | 0.0 | | | 0.0 | | | 11.4 | |
| Approach LOS | | | | | | | B | |
| Intersection Summary | | | | | | | | |
| Average Delay | | | 0.3 | | | | | |
| Intersection Capacity Utilization | | | 54.5% | | | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis

8: Site Access 2



















10/05/2023

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|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 12 | 0 | 52 | 46 | 0 | 14 | 103 | 3 | 59 | 18 | 23 | 0 |
| Future Volume (Veh/h) | 12 | 0 | 52 | 46 | 0 | 14 | 103 | 3 | 59 | 18 | 23 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 13 | 0 | 57 | 50 | 0 | 15 | 112 | 3 | 64 | 20 | 25 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 339 | 356 | 25 | 381 | 324 | 35 | 25 | | | 67 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 339 | 356 | 25 | 381 | 324 | 35 | 25 | | | 67 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 98 | 100 | 95 | 90 | 100 | 99 | 93 | | | 99 | | |
| cM capacity (veh/h) | 568 | 523 | 1051 | 511 | 545 | 1038 | 1589 | | | 1535 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 70 | 65 | 179 | 45 | | | | | | | | |
| Volume Left | 13 | 50 | 112 | 20 | | | | | | | | |
| Volume Right | 57 | 15 | 64 | 0 | | | | | | | | |
| cSH | 908 | 579 | 1589 | 1535 | | | | | | | | |
| Volume to Capacity | 0.08 | 0.11 | 0.07 | 0.01 | | | | | | | | |
| Queue Length 95th (ft) | 6 | 9 | 6 | 1 | | | | | | | | |
| Control Delay (s) | 9.3 | 12.0 | 4.9 | 3.3 | | | | | | | | |
| Lane LOS | A | B | A | A | | | | | | | | |
| Approach Delay (s) | 9.3 | 12.0 | 4.9 | 3.3 | | | | | | | | |
| Approach LOS | A | B | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 6.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 30.9% | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: S. Crystal Street & Site Access 1

















10/05/2023

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|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (veh/h) | 10 | 15 | 88 | 67 | 21 | 15 | 95 | 255 | 77 | 13 | 186 | 45 |
| Future Volume (Veh/h) | 10 | 15 | 88 | 67 | 21 | 15 | 95 | 255 | 77 | 13 | 186 | 45 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 11 | 16 | 96 | 73 | 23 | 16 | 103 | 277 | 84 | 14 | 202 | 49 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | 340 | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 626 | 822 | 126 | 758 | 804 | 180 | 251 | 361 | | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 626 | 822 | 126 | 758 | 804 | 180 | 251 | 361 | | | | |
| tC, single (s) | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 | 4.1 | 4.1 | | | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | 2.2 | | | | |
| p0 queue free % | 97 | 94 | 89 | 69 | 92 | 98 | 92 | 99 | | | | |
| cM capacity (veh/h) | 316 | 280 | 902 | 236 | 287 | 831 | 1311 | 1194 | | | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | | | | |
| Volume Total | 123 | 112 | 103 | 185 | 176 | 14 | 135 | 116 | | | | |
| Volume Left | 11 | 73 | 103 | 0 | 0 | 14 | 0 | 0 | | | | |
| Volume Right | 96 | 16 | 0 | 0 | 84 | 0 | 0 | 49 | | | | |
| cSH | 620 | 274 | 1311 | 1700 | 1700 | 1194 | 1700 | 1700 | | | | |
| Volume to Capacity | 0.20 | 0.41 | 0.08 | 0.11 | 0.10 | 0.01 | 0.08 | 0.07 | | | | |
| Queue Length 95th (ft) | 18 | 47 | 6 | 0 | 0 | 1 | 0 | 0 | | | | |
| Control Delay (s) | 12.2 | 27.0 | 8.0 | 0.0 | 0.0 | 8.1 | 0.0 | 0.0 | | | | |
| Lane LOS | B | D | A | A | | | | | | | | |
| Approach Delay (s) | 12.2 | 27.0 | 1.8 | 0.4 | | | | | | | | |
| Approach LOS | B | D | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 5.7 | | | | | | | | | | | |
| Intersection Capacity Utilization | 35.2% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

12: Site Access 1

















10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 18 | 28 | 59 | 0 | 34 | 0 | 47 | 0 | 0 | 0 | 0 | 22 |
| Future Volume (Veh/h) | 18 | 28 | 59 | 0 | 34 | 0 | 47 | 0 | 0 | 0 | 0 | 22 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 20 | 30 | 64 | 0 | 37 | 0 | 51 | 0 | 0 | 0 | 0 | 24 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 37 | | | 94 | | | 163 | 139 | 62 | 139 | 171 | 37 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 37 | | | 94 | | | 163 | 139 | 62 | 139 | 171 | 37 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 93 | 100 | 100 | 100 | 100 | 98 |
| cM capacity (veh/h) | 1574 | | | 1500 | | | 776 | 742 | 1003 | 823 | 713 | 1035 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 114 | 37 | 51 | 24 | | | | | | | | |
| Volume Left | 20 | 0 | 51 | 0 | | | | | | | | |
| Volume Right | 64 | 0 | 0 | 24 | | | | | | | | |
| cSH | 1574 | 1500 | 776 | 1035 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.00 | 0.07 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 1 | 0 | 5 | 2 | | | | | | | | |
| Control Delay (s) | 1.4 | 0.0 | 10.0 | 8.6 | | | | | | | | |
| Lane LOS | A | | A | A | | | | | | | | |
| Approach Delay (s) | 1.4 | 0.0 | 10.0 | 8.6 | | | | | | | | |
| Approach LOS | | | A | A | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | | 3.8 | | | | | | | | |
| Intersection Capacity Utilization | | | | 28.7% | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | | 15 | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

17:










10/05/2023

| | | | | | | | | | | | | |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | | |  | |
| Traffic Volume (veh/h) | 20 | 34 | 17 | 0 | 20 | 17 | 0 | 17 | 12 | 0 | 24 | 0 |
| Future Volume (Veh/h) | 20 | 34 | 17 | 0 | 20 | 17 | 0 | 17 | 12 | 0 | 24 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 22 | 37 | 18 | 0 | 22 | 18 | 0 | 18 | 13 | 0 | 26 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | | | | | | None | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 80 | 57 | 26 | 87 | 50 | 24 | 26 | | | 31 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 80 | 57 | 26 | 87 | 50 | 24 | 26 | | | 31 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 97 | 96 | 98 | 100 | 97 | 98 | 100 | | | 100 | | |
| cM capacity (veh/h) | 875 | 834 | 1050 | 853 | 841 | 1052 | 1588 | | | 1582 | | |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 77 | 40 | 31 | 26 | | | | | | | | |
| Volume Left | 22 | 0 | 0 | 0 | | | | | | | | |
| Volume Right | 18 | 18 | 13 | 0 | | | | | | | | |
| cSH | 889 | 924 | 1588 | 1582 | | | | | | | | |
| Volume to Capacity | 0.09 | 0.04 | 0.00 | 0.00 | | | | | | | | |
| Queue Length 95th (ft) | 7 | 3 | 0 | 0 | | | | | | | | |
| Control Delay (s) | 9.4 | 9.1 | 0.0 | 0.0 | | | | | | | | |
| Lane LOS | A | A | | | | | | | | | | |
| Approach Delay (s) | 9.4 | 9.1 | 0.0 | 0.0 | | | | | | | | |
| Approach LOS | A | A | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 6.3 | | | | | | | | | | | |
| Intersection Capacity Utilization | 20.6% | | | ICU Level of Service | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

25:

10/05/2023

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 11 | 17 | 27 | 27 | 7 | 7 |
| Future Volume (Veh/h) | 11 | 17 | 27 | 27 | 7 | 7 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 12 | 18 | 29 | 29 | 8 | 8 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 99 | 12 | 16 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 99 | 12 | 16 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 98 | 98 | | | |
| cM capacity (veh/h) | 884 | 1069 | 1602 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 30 | 58 | 16 | | | |
| Volume Left | 12 | 29 | 0 | | | |
| Volume Right | 18 | 0 | 8 | | | |
| cSH | 986 | 1602 | 1700 | | | |
| Volume to Capacity | 0.03 | 0.02 | 0.01 | | | |
| Queue Length 95th (ft) | 2 | 1 | 0 | | | |
| Control Delay (s) | 8.8 | 3.7 | 0.0 | | | |
| Lane LOS | A | A | | | | |
| Approach Delay (s) | 8.8 | 3.7 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 4.6 | | | |
| Intersection Capacity Utilization | | 19.6% | | ICU Level of Service | | A |
| Analysis Period (min) | | 15 | | | | |

REFERENCED TIS



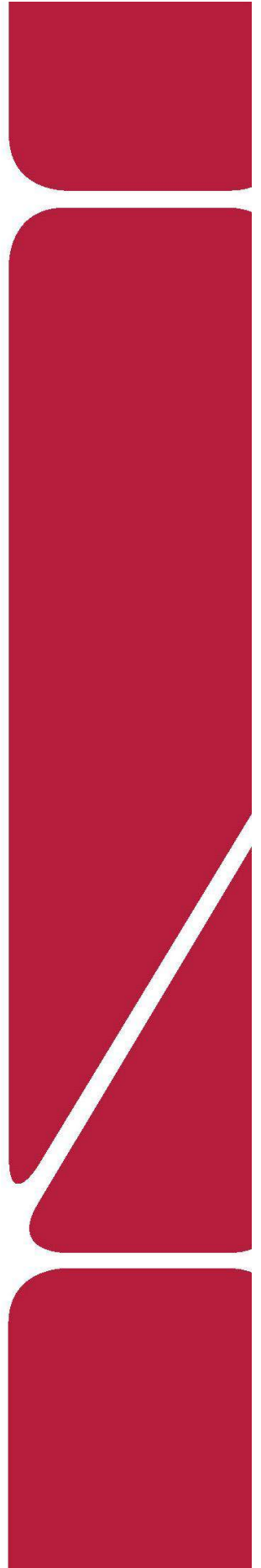
Traffic Impact Study

Fieldhouse at Aurora Town Center Aurora, Colorado

Prepared for:

Nelson

Kimley»Horn



T R A F F I C I M P A C T S T U D Y

Fieldhouse at Aurora Town Center

Aurora, Colorado

**Prepared for
Nelson**
311 Elm Street
Suite 600
Cincinnati, OH 45202

**Prepared by
Kimley-Horn and Associates, Inc.**
4582 South Ulster Street
Suite 1500
Denver, Colorado 80237
(303) 228-2300

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1.0 EXECUTIVE SUMMARY

Fieldhouse at Aurora Town Center is proposed to be located within the existing Town Center at Aurora Mall located on the southwest corner of Alameda Avenue and Sable Boulevard intersection in Aurora, Colorado. The Fieldhouse is anticipated to occupy the previous Sears store within the northern portion of the mall. The approximate 91,960 square feet of building space for the Fieldhouse is proposed to include eight volleyball/basketball courts, a fitness facility, a sports training facility, and an adventure park. The hours of operation for the Aurora Fieldhouse will be Monday through Friday 2:00 PM to 9:00PM, Saturday 9:00 AM to 9:00 PM and Sunday 1:00 PM to 6:00 PM. Weekday peak traffic at the facility is expected to occur between 4:45 PM and 9:30 PM when activities are typically booked on hour or half-hour increments. Therefore, trip generation and traffic analysis were only conducted for the typical weekday afternoon peak hour. It is expected that the project construction will be completed within the next year; therefore, analysis will be conducted for the 2021 short term build out horizon as well as the 2040 long-term horizon.

The purpose of this study is to identify project traffic generation characteristics, to identify potential project traffic related impacts on the local street system, and to develop mitigation measures required for identified impacts. The following intersections were incorporated into this traffic study in accordance with the City of Aurora standards and requirements:

- West Mall Entrance and Abilene Street
- Alameda Avenue and Abilene Street
- Alameda Avenue and Crystal Street
- Alameda Avenue and Sable Boulevard
- Centrepoint Drive and Sable Boulevard
- West Mall Entrance and Mall Ring Road
- Mall Ring Road and Crystal Street
- Centrepoint Drive and Mall Ring Road

Regional access to the project will be provided by Interstate 225 (I-225) while primary access will be provided by Alameda Parkway, Sable Boulevard, Abilene Street, and Centrepoint Drive. Direct access to the site will be provided by the following existing intersections: West Mall Entrance/Mall Ring Road, Mall Ring Road/Crystal Street, and Centrepoint Drive/Mall Ring Road.

Based on the most applicable ITE Land Use Code, the approximate 91,960 square foot Fieldhouse at Aurora Town Center is anticipated to generate approximately 2,628 daily weekday trips with 211 trips occurring during the afternoon peak hour. Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, anticipated surrounding development areas, and the proposed access system for the project. Assignment of project traffic was based upon the trip generation described previously and the distributions developed.

Based on the analysis presented in this report, Kimley-Horn believes the proposed Fieldhouse at Aurora Town Center project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network and the proposed project development with expected traffic volumes resulted in the following recommendations:

- The eastbound left-turn movement at the intersection of Crystal Street and Mall Ring Road operates with a LOS E without project traffic and at a LOS F with project traffic with the existing intersection traffic control of incoming traffic having free flow movements. Therefore, it is recommended that the intersection be considered for All-Way Stop Control (AWSC) or a roundabout. With the AWSC improvement, a R1-1 "STOP" sign is recommended to be installed on the southbound Crystal Street approach. When this occurs, it is recommended that the "INCOMING TRAFFIC DOES NOT STOP" signs underneath the existing "STOP" signs for the eastbound and westbound Mall Ring Road approaches be removed. It is recommended that all three "STOP" signs include R1-4 "ALL WAY" plaques under the "STOP" signs. In addition, orange flags should be affixed to the top of the new "STOP" sign on the southbound Crystal Street approach.
- The continuous northbound approach for the through/right turn movement at Alameda Avenue and Crystal Street may have queues of approximately 200 feet to 225 feet, which exceed the 160-feet available back to the internal Ring Road intersection with the existing signal timing. If this occurs, timing modifications to maximize the green time for the Crystal Street northbound approach may be needed to allocate an additional 12 seconds of green time for the northbound minor phase bringing the anticipated queue length down to 172 feet, which is close to being met by the existing 160-foot length available. This should be monitored to determine if timing modifications for max-green need to be changed in the controller with the In-N-Out Burger and Fieldhouse projects traffic added.

- Any on-site and off-site roadway improvements should be incorporated into the Civil Drawings, and conform to the City of Aurora Standards, Institute of Transportation Engineers (ITE), and the Manual on Traffic Control Devices (MUTCD) – 2009 Edition.

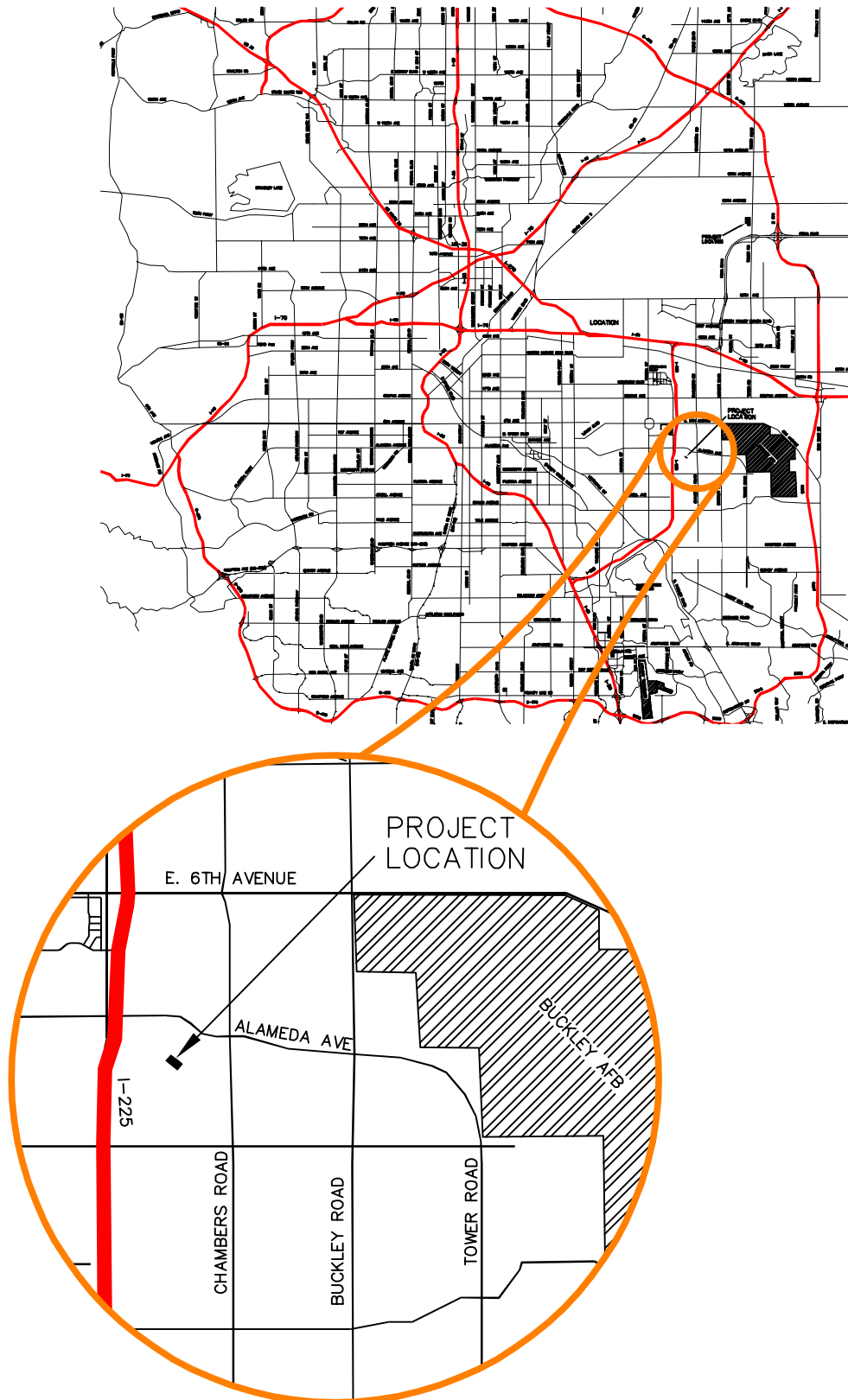
2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-Horn) has prepared this report to document the results of a Traffic Impact Study of future traffic conditions associated with the proposed Fieldhouse at Aurora Town Center development to be located within the existing Town Center at Aurora Mall located on the southwest corner of Alameda Avenue and Sable Boulevard intersection in Aurora, Colorado. A vicinity map illustrating the project location with respect to the surrounding area is shown in **Figure 1**.

The Fieldhouse is anticipated to occupy the previous Sears store within the northern portion of the mall. The approximate 91,960 square feet of building space for the Fieldhouse is proposed to include eight volleyball/basketball courts, a fitness facility, a sports training facility, and an adventure park. A conceptual site plan of the proposed development is provided in **Appendix F**. It is expected that the project construction will be completed within the next year; therefore, analysis will be conducted for the 2021 short term build out horizon as well as the 2040 long-term horizon.

The purpose of this study is to identify project traffic generation characteristics, to identify potential project traffic related impacts on the local street system, and to develop mitigation measures required for identified impacts. The following intersections were incorporated into this traffic study in accordance with the City of Aurora standards and requirements:

- West Mall Entrance and Abilene Street
- Alameda Avenue and Abilene Street
- Alameda Avenue and Crystal Street
- Alameda Avenue and Sable Boulevard
- Centrepoint Drive and Sable Boulevard
- West Mall Entrance and Mall Ring Road
- Mall Ring Road and Crystal Street
- Centrepoint Drive and Mall Ring Road



AURORA FIELDHOUSE
VICINITY MAP

FIGURE 1

The hours of operation for the Aurora Fieldhouse will be Monday through Friday 2:00 PM to 9:00PM, Saturday 9:00 AM to 9:00 PM and Sunday 1:00 PM to 6:00 PM. Weekday peak traffic at the facility is expected to occur between 4:45 PM and 9:30 PM when activities are typically booked on hour or half-hour increments. Therefore, trip generation and traffic analysis were only conducted for the typical weekday afternoon peak hour.

Regional access to the project will be provided by I-225 while primary access will be provided by Alameda Parkway, Sable Boulevard, Abilene Street, and Centrepont Drive. Direct access to the site will be provided by the following existing intersections: West Mall Entrance/Mall Ring Road, Mall Ring Road/Crystal Street, and Centrepont Drive/Mall Ring Road.

3.0 EXISTING CONDITIONS

3.1 Existing Study Area

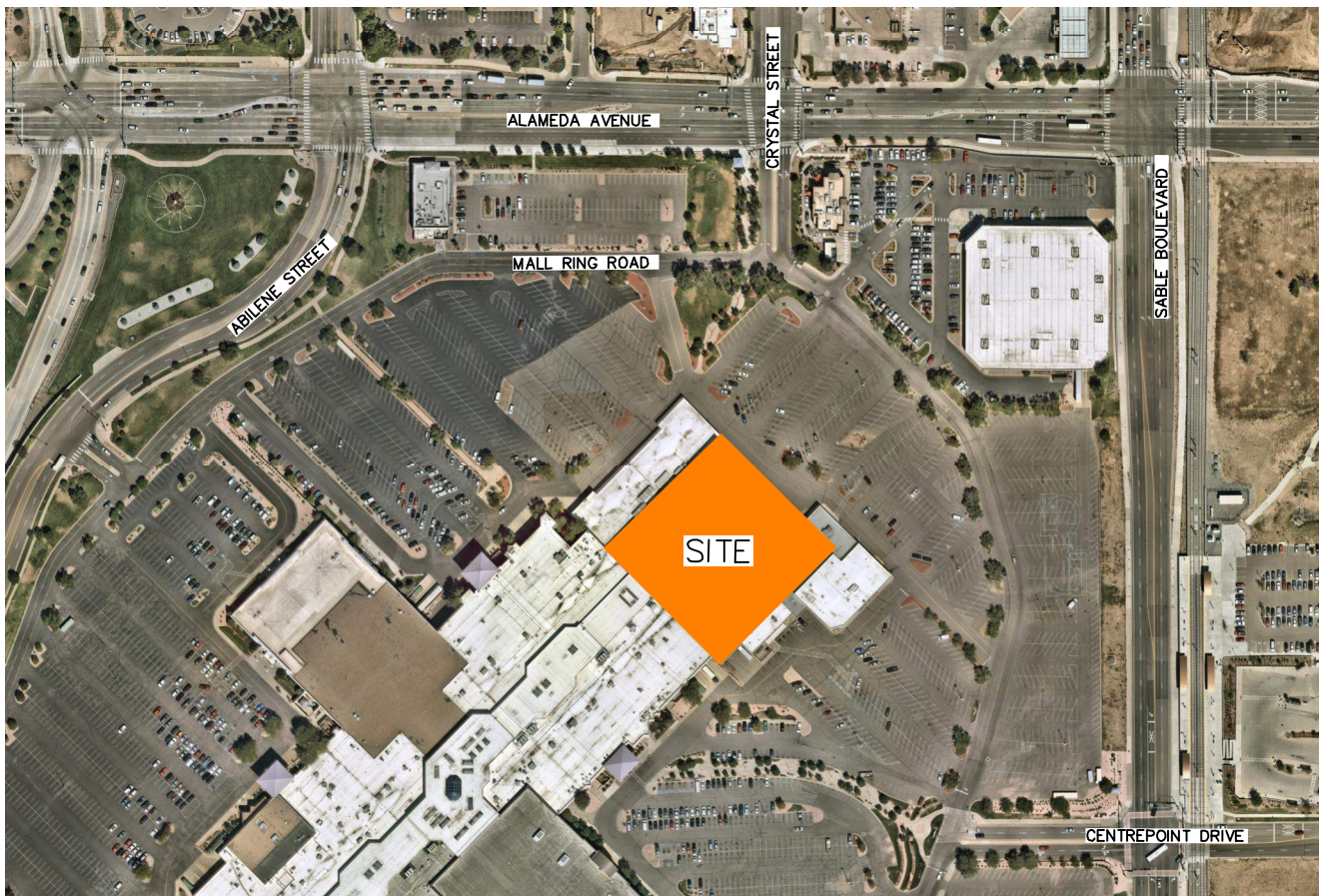
The existing project site is an unoccupied, vacant space at the existing Town Center at Aurora shopping center. This space was previously a Sears retail store. The extended surrounding area north and south of the site consists of retail and restaurants. The area east of the existing Town Center at Aurora site mainly consists of undeveloped land parcels. West of the site, across I-225, are single family homes. The land uses and roadway network surrounding the site within the study area are shown in the aerial of **Figure 2**.

3.2 Existing Roadway Network

Alameda Avenue extends east-west with three through lanes in each direction, a raised median and a posted speed limit of 40 miles per hour. Abilene Street extends north-south with two through lanes in each direction, a raised median and striped median providing left turn lanes at major intersections with a posted speed limit of 30 miles per hour. Crystal Street extends north-south for approximately a quarter-mile with two lanes in each direction and no observed posted speed limit. Sable Boulevard extends north-south with two through lanes in each direction and a posted speed limit of 35 miles per hour. Centrepont Drive extends east-west for approximately half-mile with two lanes in each direction of travel, a center two-way left turn lane (TWLTL) or designated left turn lanes and a posted speed limit of 30 miles per hour. Mall Ring Road loops around Aurora Town Center shopping center with one through lane in each direction, a center TWLTL and a posted speed limit of 25 miles per hour.

The intersection of West Mall Access and Abilene Street is signalized with protected-permitted left-turn phasing in the southbound approach. The westbound approach provides a left-turn lane and a right-turn lane. The northbound approach provides a through lane and a shared through/right-turn lane. The southbound approach provides of a left-turn lane and two through lanes.

The intersection of Alameda Avenue and Abilene Street is signalized with protected only left-turn phasing on all four approaches. The eastbound and westbound approaches provide dual left-turn lanes, three through lanes and a right turn lane. The northbound approach provides dual left-turn lanes, a through lane, and a right-turn lane. The southbound approach provides a left-turn lane, two through lanes, and a right-turn lane.



AURORA FIELDHOUSE
SITE AREA

FIGURE 2

The intersection of Alameda Avenue and Crystal Street is signalized with protected-permitted left turn phasing in the eastbound and westbound approaches and permitted left-turn phasing in the northbound and southbound approaches. The eastbound approach provides dual left-turn lanes, three through lanes, and a continuous right-turn lane. The westbound approach provides a left-turn lane, two through lanes, and a shared through/right-turn lane. The northbound approach provides of a left-turn lane and a shared through/right-turn lane. The southbound approach provides dual left-turn lanes and a shared through/right-turn lane.

The intersection of Alameda Avenue and Sable Boulevard is signalized with protected-permitted left-turn phasing on all approaches. RTD Lightrail railroad tracks run north-south on the east leg of the intersection, therefore the signalized intersection operates with railroad pre-emption. The eastbound approach provides a left-turn lane, three trough lanes, and a right-turn lane. The westbound approach provides dual left-turn lanes, three through lanes, and a right-turn lane. The northbound and southbound approaches provide dual left-turn lanes, two through lanes, and a right-turn lane.

The intersection of Centrepont Drive and Sable Boulevard is signalized with protected-permitted left-turn phasing on the westbound, northbound, and southbound approaches and protected only left-turn phasing on the eastbound approach. The RTD Lightrail railroad tracks run north-south on the east leg of this intersection too, therefore the signalized intersection operates with railroad pre-emption. The eastbound approach provides a left-turn lane and a shared through/right-turn lane. The westbound approach provides a left-turn lane, a through lane, and a shared through/right-turn lane. The northbound approach provides a left-turn lane, two through lanes and a right-turn lane. The southbound approach provides a left-turn lane, a through lane, and a shared through/right-turn lane.

The intersection of West Mall Access and the Mall Ring Road operates with stop control in the northbound and southbound Mall Ring Road approaches. The eastbound entrance approach provides a left-turn lane and a right-turn lane and free flow movements. The northbound approach consists of a left-turn lane and a through lane. The southbound approach consists of a shared through/right-turn lane.

The intersection of Mall Ring Road and Crystal Street operates with stop control in the eastbound and westbound Mall Ring Road approaches. The eastbound approach consists of a left turn lane and a through lane. The westbound approach consists of a shared through/right-turn lane. The southbound entrance approach consists of a left-turn lane and a right-turn lane operating with free movements.

The intersection of Centrepoint Drive and Mall Ring Road operates with all-way stop control. The westbound approach consists of a left-turn lane and a right-turn lane. The northbound approach consists of a shared through/right-turn lane. The southbound approach consists of a left-turn lane and a through lane. The existing intersection lane configurations and control for the study area are shown in **Figure 3**.

3.3 Existing Traffic Volumes

Existing peak hour turning movement counts were conducted on Thursday, January 16, 2020 at the following key study area intersections during the afternoon peak hours:

- Alameda Avenue and Sable Boulevard
- Centrepoint Drive and Sable Boulevard
- Centrepoint Drive and Mall Ring Road

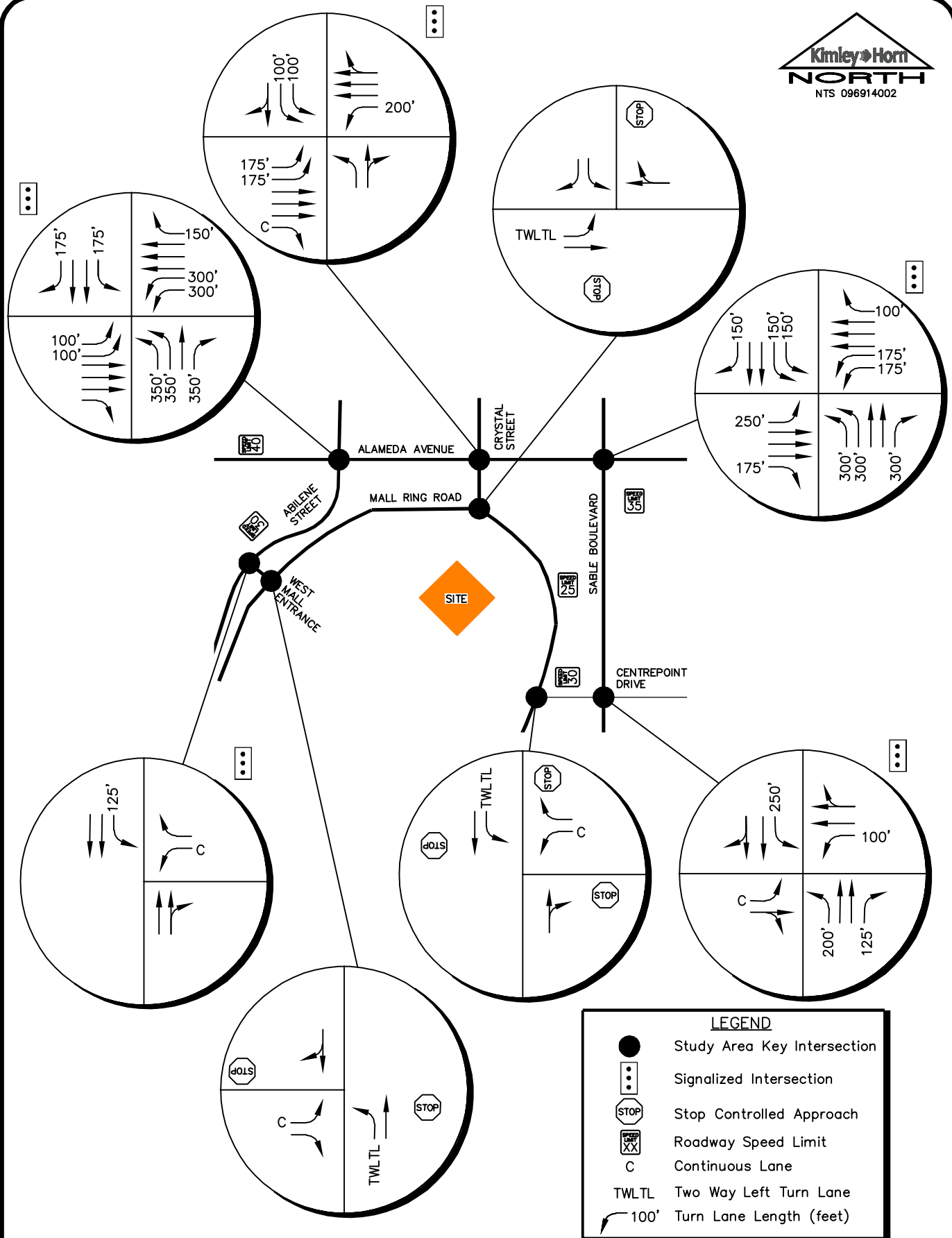
Turning movement counts were conducted on Thursday, September 5, 2019 at the following key study area intersections during the afternoon peak hours:

- West Mall Entrance and Abilene Street

Turning movement counts were conducted on Wednesday, August 28, 2019 at the following key study area intersections during the afternoon peak hours:

- Alameda Avenue and Abilene Street
- Alameda Avenue and Crystal Street
- West Mall Entrance and Mall Ring Road
- Mall Ring Road and Crystal Street

Based on all traffic counts being collected within a span of less than a half year and the mall not having any significant changes in occupancy during this time, it is anticipated that traffic patterns have remained consistent.



AURORA FIELDHOUSE
EXISTING LANE CONFIGURATIONS

FIGURE 3

The counts were obtained in 15-minute intervals during the afternoon peak hours of adjacent street traffic from 4:00 PM to 7:00 PM. Counts conducted in 2019 were grown by the two percent (2%) growth factor per year set forth by the City of Aurora *Traffic Impact Study* guidelines to reflect current 2020 traffic conditions.

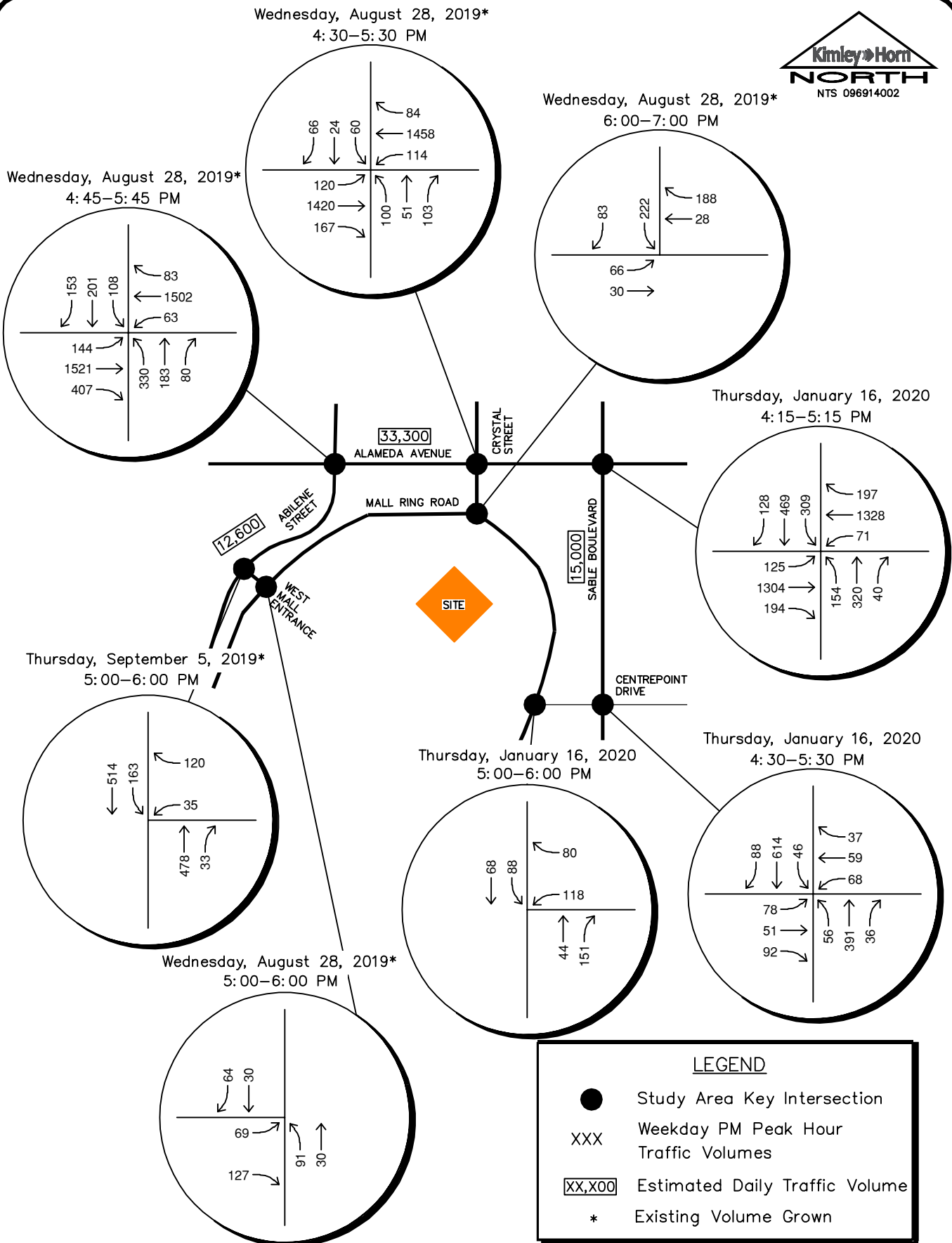
The turning movement counts are shown in **Figure 4** with count sheets provided in **Appendix A**. In addition, daily traffic volumes were estimated along the study area roadways and are shown on **Figure 4** based on the rule of thumb approach that the daily volume equals ten times the afternoon peak hour volume on each roadway segment.

3.4 Unspecified Development Traffic Growth

To be consistent with the City of Aurora Traffic Impact Study Guidelines, a two percent annual growth rate was used to estimate future traffic volume conditions. This annual growth rate of two percent was used to estimate short term 2021 and long term 2040 traffic volumes for all movements along the major arterials. Likewise, site traffic generated by the redevelopment of the parcel on the southwest corner of the Alameda Avenue and Crystal Street intersection has been submitted as a traffic impact study (*Aurora Drive-Thru Fast Food*, November 2019) and approved by the City of Aurora has been included as background traffic in this study. Excerpts from the studies will be included in **Appendix B**.

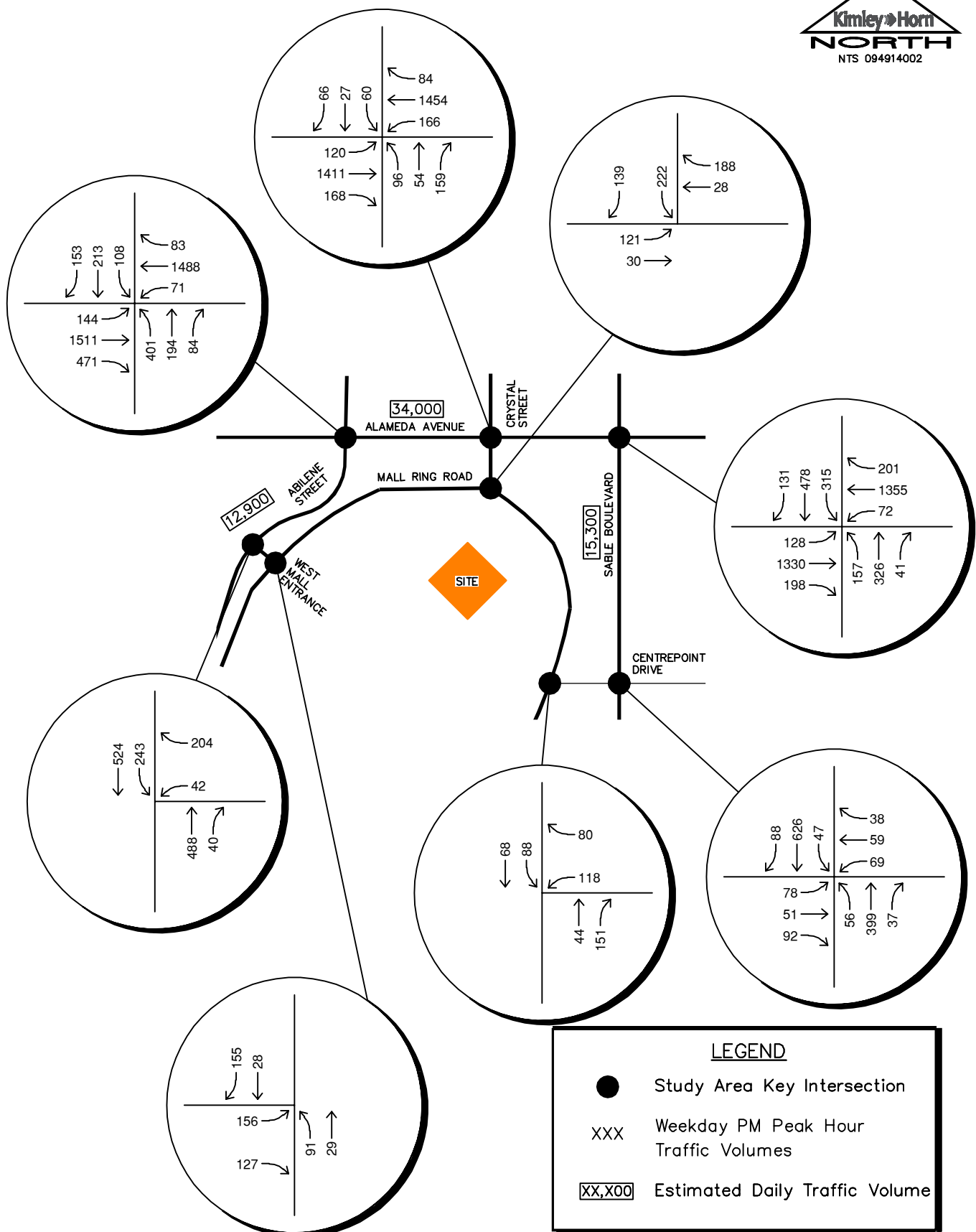
The *Aurora Drive-Thru Fast Food* building will redevelop an existing sit-down restaurant at a northern outparcel to the Town Center at Aurora. The development is expected to be built-out by 2021 and will generate approximately 3,637 weekday daily trips with 403 trips occurring during the morning peak hour and 325 trips occurring during the afternoon peak hour. The total future traffic provided in Figure 6-1 and Figure 6-2 of the *Aurora Drive-Thru Fast Food Traffic Impact Study* was incorporated into the roadway network and study intersections for the background traffic of each horizon year, respectively.

Background traffic volumes for 2021 and 2040 are shown in **Figure 5** and **Figure 6**, respectively.



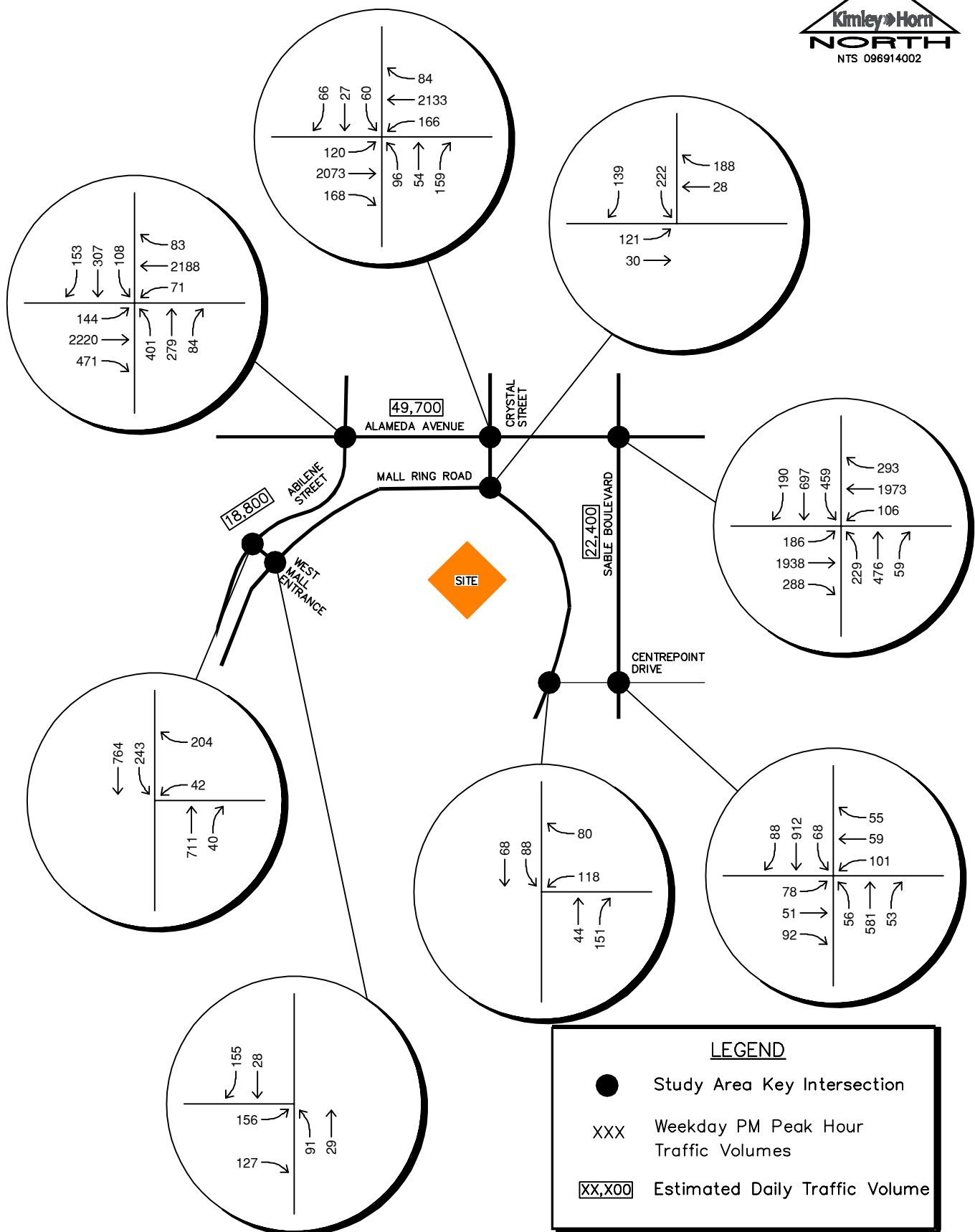
AURORA FIELDHOUSE
EXISTING TRAFFIC VOLUMES

FIGURE 4



AURORA FIELDHOUSE
2021 BACKGROUND TRAFFIC VOLUMES

FIGURE 5



AURORA FIELDHOUSE
2040 BACKGROUND TRAFFIC VOLUMES

FIGURE 6

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rate that apply to Recreational Community Center (ITE Land Use Code 495) for traffic associated with the development.

ITE Land Use Code 495 for Recreational Community Center was used for this development since it is most closely matching the description for the Aurora Fieldhouse provided by the client. In correspondence with the client, the Aurora Fieldhouse was described to provide volleyball courts, basketball courts, fitness facilities, sports training facilities, and an adventure park. Additionally, the weekday hours for the facility are 2:00 PM to 9:00 PM on Monday through Friday. The client described that historically, weekday traffic peaks between 4:45 PM to 9:30 PM. Therefore, the trip generation was only calculated for the PM peak hour.

Based on the most applicable ITE Land Use Code, the approximate 91,960 square foot Fieldhouse at Aurora Town Center is anticipated to generate approximately 2,628 daily weekday trips with 211 trips occurring during the afternoon peak hour. This number of entering trips is believed to be conservative for the overall facility trip generation. **Table 1** summarizes the estimated traffic generation for the proposed development. The trip generation worksheet is included in **Appendix C**. These calculations illustrate the rates used, directional distribution of trips, and number of daily trips based on the published ITE *Trip Generation Report*.

Table 1 – Fieldhouse at Aurora Town Center Traffic Generation

| Land Use | Size | Vehicles Trips | | | |
|----------------------|-----------|----------------|----------------------|-----|-------|
| | | Daily | Weekday PM Peak Hour | | |
| | | | In | Out | Total |
| Fieldhouse (ITE 495) | 91,960 SF | 2,628 | 120 | 91 | 211 |

¹ Institute of Transportation Engineers, *Trip Generation Manual: An Information Report*, Tenth Edition, Washington DC, 2017.

For reference, the previous Sears retail store would be considered to generate approximately 2,106 weekday daily trips with 179 of these trips occurring during the weekday afternoon peak hour based on ITE average rate equations for the Department Store (875) code use, which is very similar to the traffic anticipated to be generated by this project (an 18 percent increase during the afternoon peak hour is expected).

4.2 Trip Distribution

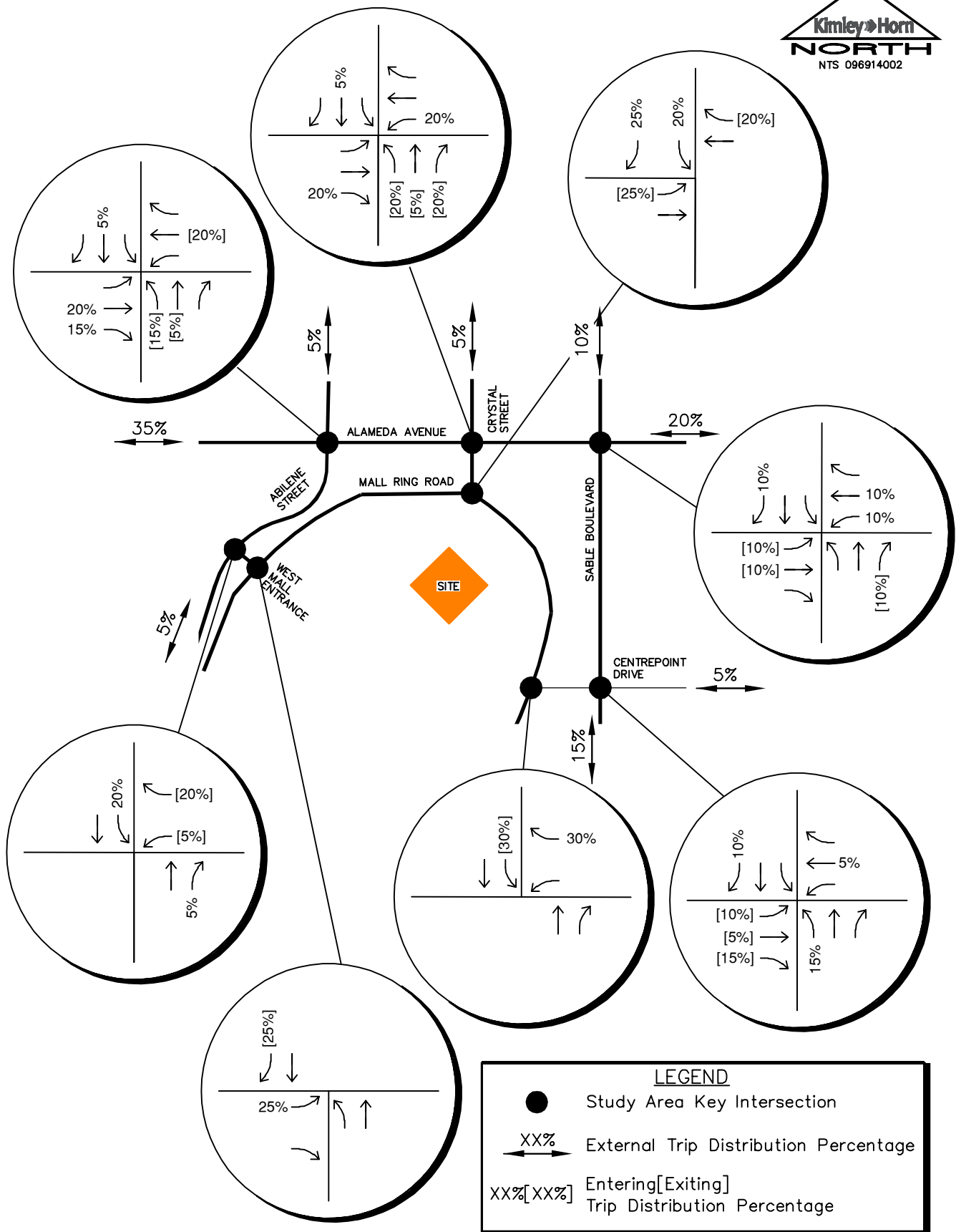
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns and volumes, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source direction. Existing traffic patterns were used as a basis for trip distribution; however, the existing Aurora Town Center is a regional attraction, whereas this facility is a more localized use to account for arrival and departure patterns from surrounding demographic areas. As such, a higher trip distribution was assigned to and from the west due to a higher number of households being located to the west and the proximity to I-25. A higher density of households are located to the east and to the south compared to the north. **Figure 7** illustrates the expected trip distribution for the project.

4.3 Traffic Assignment

Traffic assignment was obtained by applying the distributions of **Figure 7** to the estimated traffic generation of the project shown in **Table 1**. The Fieldhouse at Aurora Town Center traffic assignment is shown in **Figure 8**.

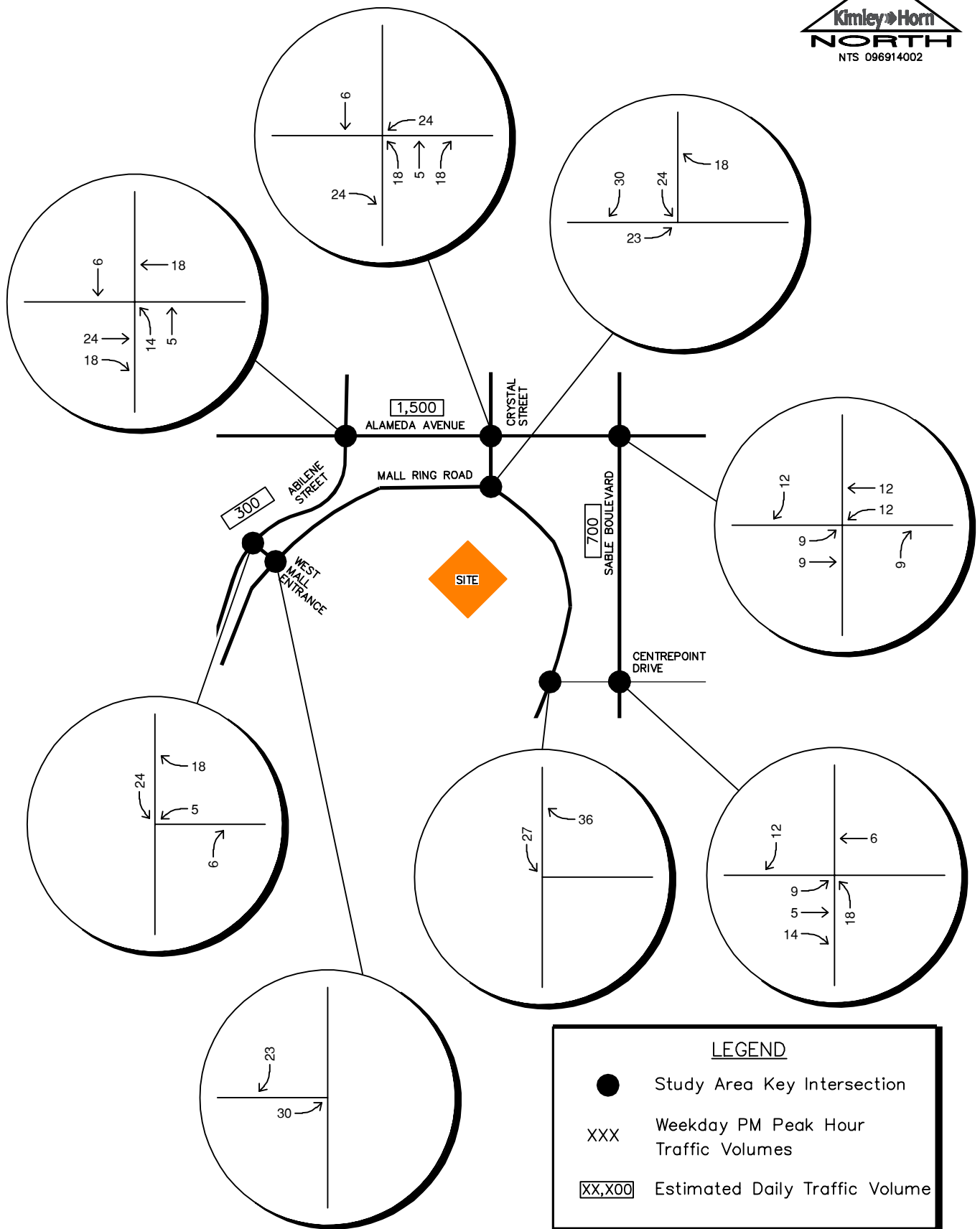
4.4 Total (Background Plus Project) Traffic

Project traffic volumes were added to the background volumes to represent estimated traffic conditions for the 2021 build out horizon and long term 2040 horizon. These background plus project traffic volumes for the project are illustrated for the 2020 and 2040 horizon years in **Figures 9** and **10**, respectively.



AURORA FIELDHOUSE
TRIP DISTRIBUTION

FIGURE 7

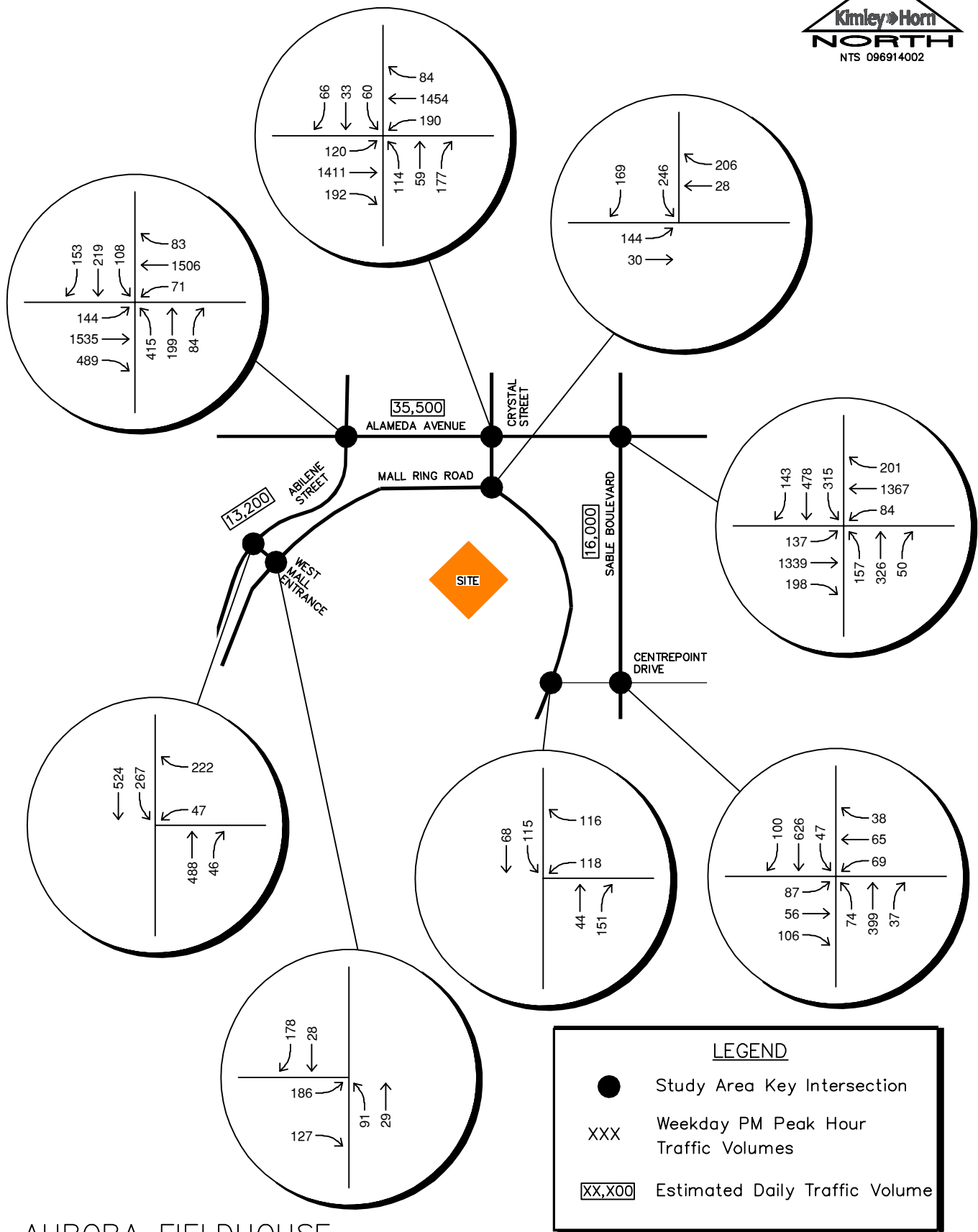


LEGEND

- Study Area Key Intersection
- XXX Weekday PM Peak Hour Traffic Volumes
- XX,X00 Estimated Daily Traffic Volume

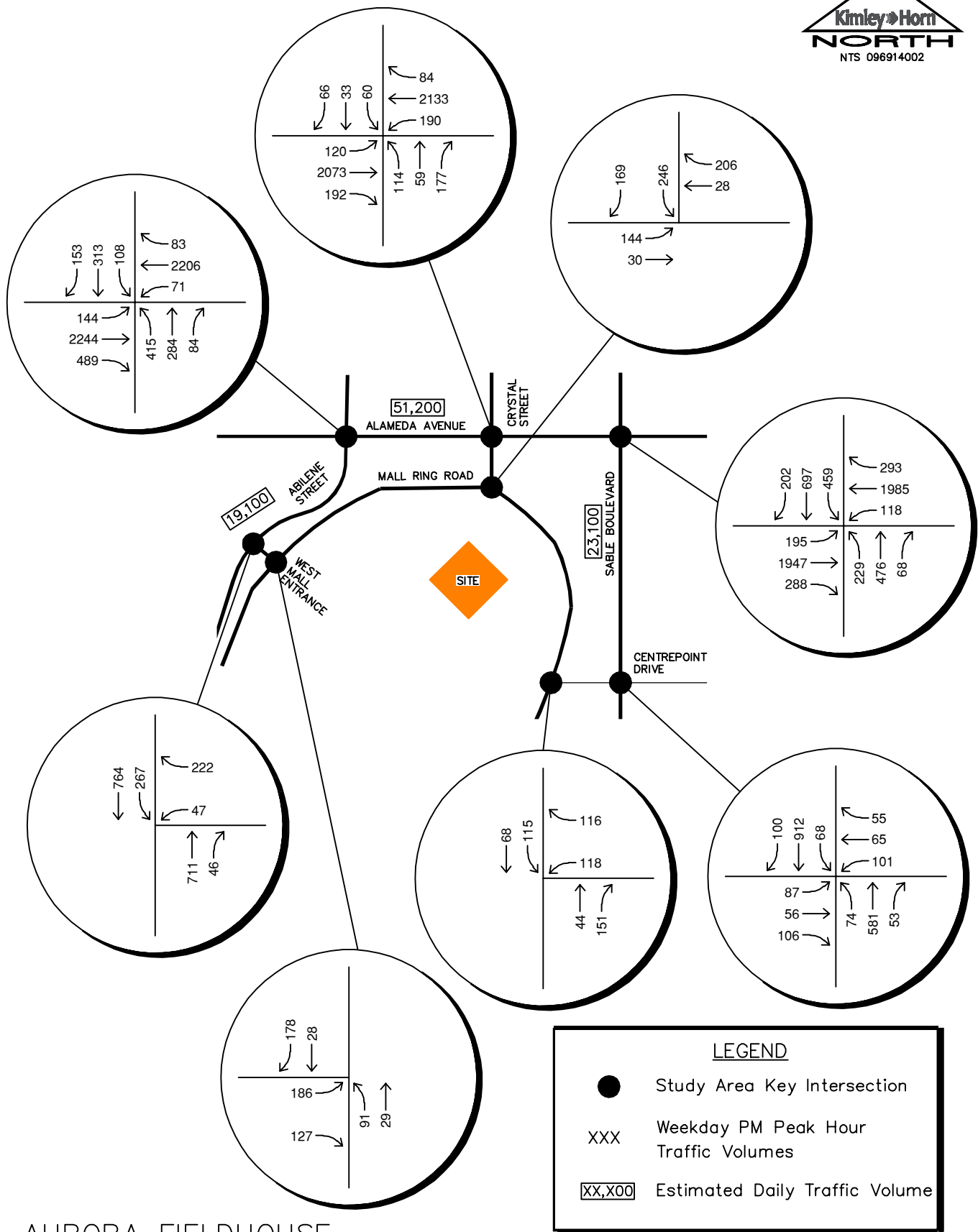
AURORA FIELDHOUSE
 TRAFFIC ASSIGNMENT

FIGURE 8



AURORA FIELDHOUSE
 2021 BACKGROUND PLUS
 PROJECT TRAFFIC VOLUMES

FIGURE 9



AURORA FIELDHOUSE
2040 BACKGROUND PLUS
PROJECT TRAFFIC VOLUMES

FIGURE 10

5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2021 and 2040 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the *Highway Capacity Manual*².

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). City of Aurora and typical traffic study practice identifies LOS D or better for acceptable operations of movements, approaches, and for the overall intersection. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

| Level of Service | Signalized Intersection Average Total Delay (sec/veh) | Unsignalized Intersection Average Total Delay (sec/veh) |
|------------------|---|---|
| A | ≤ 10 | ≤ 10 |
| B | > 10 and ≤ 20 | > 10 and ≤ 15 |
| C | > 20 and ≤ 35 | > 15 and ≤ 25 |
| D | > 35 and ≤ 55 | > 25 and ≤ 35 |
| E | > 55 and ≤ 80 | > 35 and ≤ 50 |
| F | > 80 | > 50 |

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service for a two-way stop-controlled intersection is not defined for the intersection as a whole. Level of service for a signalized and four-way stop controlled intersection is defined for each approach and for the intersection.

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Intersection Operational Analysis

The study area intersections were analyzed based on average delay analysis for signalized and unsignalized intersections. Level of Service (LOS) was calculated using Synchro 10 Software providing the HCM results. Calculations for the level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 3**. LOS for the intersections was calculated using Synchro software presenting the HCM results.

West Mall Entrance and Abilene Street

The intersection of West Mall Entrance and Abilene Street is a signalized “T” intersection with protected-permitted left-turn phasing in the southbound approach. The intersection currently operates acceptably with LOS A during the afternoon peak hour. With the existing lane configuration, the intersection is expected to continue to operate acceptably with LOS B during the afternoon peak hour in horizon year 2021 and 2040 with or without the addition of Fieldhouse project traffic. Therefore, no modifications are anticipated to be required at this intersection. **Table 3** provides the level of service at this intersection.

Table 3 – West Mall Entrance and Abilene Street LOS Results

| Scenario | PM Peak Hour | |
|-------------------------------------|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Westbound Approach | 39.4 | D |
| Northbound Approach | 6.2 | A |
| Southbound Approach | 2.8 | A |
| Overall | 8.6 | A |
| 2021 Background | | |
| Westbound Approach | 39.1 | D |
| Northbound Approach | 9.8 | A |
| Southbound Approach | 4.7 | A |
| Overall | 12.3 | B |
| 2021 Background Plus Project | | |
| Westbound Approach | 41.5 | D |
| Northbound Approach | 10.8 | B |
| Southbound Approach | 5.2 | A |
| Overall | 13.7 | B |
| 2040 Background | | |
| Westbound Approach | 40.5 | D |
| Northbound Approach | 10.1 | B |
| Southbound Approach | 4.8 | A |
| Overall | 11.3 | B |
| 2040 Background Plus Project | | |
| Westbound Approach | 43.2 | D |
| Northbound Approach | 11.1 | B |
| Southbound Approach | 5.2 | A |
| Overall | 12.6 | B |

Alameda Avenue and Abilene Street

The intersection of Alameda Avenue and Abilene Street is signalized with protected only left-turn phasing on all four approaches. The intersection currently operates acceptably with LOS C during the afternoon peak hour. With the existing lane configuration, the intersection continues to operate with a LOS C during the afternoon peak hours in horizon year 2021 with and without project traffic. During horizon year 2040, with existing lane configuration, the intersection continues to operate acceptably with LOS C without project traffic and LOS D with project traffic in the afternoon peak hour. Likewise, no modifications are anticipated to be required at this intersection. **Table 4** provides the results of the level of service at this intersection.

Table 4 – Alameda Avenue and Abilene Street LOS Results

| Scenario | PM Peak Hour | |
|-------------------------------------|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Eastbound Approach | 28.6 | C |
| Westbound Approach | 6.2 | A |
| Northbound Approach | 54.7 | D |
| Southbound Approach | 53.1 | D |
| Overall | 26.1 | C |
| 2021 Background | | |
| Eastbound Approach | 29.4 | C |
| Westbound Approach | 7.2 | A |
| Northbound Approach | 52.2 | D |
| Southbound Approach | 53.5 | D |
| Overall | 27.1 | C |
| 2021 Background Plus Project | | |
| Eastbound Approach | 29.6 | C |
| Westbound Approach | 7.0 | A |
| Northbound Approach | 52.2 | D |
| Southbound Approach | 53.9 | D |
| Overall | 27.2 | C |
| 2040 Background | | |
| Eastbound Approach | 39.6 | D |
| Westbound Approach | 15.1 | B |
| Northbound Approach | 54.3 | D |
| Southbound Approach | 54.5 | D |
| Overall | 33.5 | C |
| 2040 Background Plus Project | | |
| Eastbound Approach | 45.2 | D |
| Westbound Approach | 24.1 | C |
| Northbound Approach | 54.6 | D |
| Southbound Approach | 53.7 | D |
| Overall | 39.1 | D |

Alameda Avenue and Crystal Street

The intersection of Alameda Avenue and Crystal Street is signalized with protected-permitted left turn phasing in the eastbound and westbound approaches and permitted left-turn phasing in the northbound and southbound approaches. The intersection currently operates acceptably with LOS A during the afternoon peak hour. With the existing lane configuration, the intersection is expected to continue to operate acceptably with LOS B during the afternoon peak hour in horizon year 2021 and 2040 with the addition of Fieldhouse project traffic. Of note, an additional 12 seconds of green time was allocated along the northbound Crystal Street approach to shorten vehicles queues along this approach exiting the Aurora Town Center. **Table 5** provides the results of the level of service at this intersection.

Table 5 – Alameda Avenue and Crystal Street LOS Results

| Scenario | PM Peak Hour | |
|---------------------------------------|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Eastbound Approach | 1.0 | A |
| Westbound Approach | 1.7 | A |
| Northbound Approach | 48.5 | D |
| Southbound Approach | 47.9 | D |
| Overall | 6.8 | A |
| 2021 Background | | |
| Eastbound Approach | 1.1 | A |
| Westbound Approach | 2.1 | A |
| Northbound Approach | 53.9 | D |
| Southbound Approach | 47.0 | D |
| Overall | 8.0 | A |
| 2021 Background Plus Project # | | |
| Eastbound Approach | 8.5 | A |
| Westbound Approach | 6.7 | A |
| Northbound Approach | 36.4 | D |
| Southbound Approach | 34.1 | C |
| Overall | 11.5 | B |
| 2040 Background | | |
| Eastbound Approach | 0.7 | A |
| Westbound Approach | 2.5 | A |
| Northbound Approach | 54.3 | D |
| Southbound Approach | 46.9 | D |
| Overall | 6.1 | A |
| 2040 Background Plus Project # | | |
| Eastbound Approach | 20.7 | A |
| Westbound Approach | 10.8 | A |
| Northbound Approach | 37.9 | D |
| Southbound Approach | 35.3 | D |
| Overall | 17.8 | B |

= Additional 12-seconds Northbound Green Time to Improve Vehicles Queues

Alameda Avenue and Sable Boulevard

The intersection of Alameda Avenue and Sable Boulevard is signalized with protected-permitted left-turn phasing on all approaches. The intersection currently operates acceptably with LOS C during the afternoon peak hours. With the existing lane configuration, the intersection is expected to continue to operate with LOS C during the afternoon peak hour with or without the addition of project traffic in 2021 and 2040. No modifications are anticipated to be required at this intersection. **Table 6** provides the results of the level of service at this intersection.

Table 6 – Alameda Avenue and Sable Boulevard LOS Results

| Scenario | PM Peak Hour | |
|-------------------------------------|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Eastbound Approach | 2.0 | A |
| Westbound Approach | 21.2 | C |
| Northbound Approach | 45.3 | D |
| Southbound Approach | 43.6 | D |
| Overall | 21.4 | C |
| 2021 Background | | |
| Eastbound Approach | 2.1 | A |
| Westbound Approach | 21.8 | C |
| Northbound Approach | 45.1 | D |
| Southbound Approach | 43.5 | D |
| Overall | 21.6 | C |
| 2021 Background Plus Project | | |
| Eastbound Approach | 2.1 | A |
| Westbound Approach | 22.1 | C |
| Northbound Approach | 45.1 | D |
| Southbound Approach | 43.5 | D |
| Overall | 21.7 | C |
| 2040 Background | | |
| Eastbound Approach | 4.7 | A |
| Westbound Approach | 31.5 | C |
| Northbound Approach | 63.3 | E |
| Southbound Approach | 59.2 | E |
| Overall | 30.9 | C |
| 2040 Background Plus Project | | |
| Eastbound Approach | 3.2 | A |
| Westbound Approach | 31.3 | C |
| Northbound Approach | 64.0 | E |
| Southbound Approach | 64.6 | E |
| Overall | 31.5 | C |

Centrepont Drive and Sable Boulevard

The intersection of Centrepont Drive and Sable Boulevard is signalized with protected/permitted left-turn phasing on the westbound, northbound, and southbound approaches and protected only left-turn phasing on the eastbound approach. The intersection currently operates acceptably with LOS C during the weekday afternoon peak hour with existing lane configurations. The intersection is expected to continue to operate with LOS C during the afternoon peak hour with or without the addition of project traffic. Therefore, no modifications are anticipated to be required at this intersection. Note that the delay at the intersection improves over the existing and horizon years due to the optimization of signal splits that allow for the high volumes along Sable Boulevard to operate with minimal delay through the intersection. **Table 7** provides the results of the level of service at this intersection.

Table 7 – Centrepont Drive and Sable Boulevard LOS Results

| Scenario | PM Peak Hour | |
|-------------------------------------|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Eastbound Approach | 47.2 | D |
| Westbound Approach | 36.5 | D |
| Northbound Approach | 18.3 | B |
| Southbound Approach | 10.9 | B |
| Overall | 21.0 | C |
| 2021 Background | | |
| Eastbound Approach | 47.2 | D |
| Westbound Approach | 36.4 | D |
| Northbound Approach | 18.4 | B |
| Southbound Approach | 11.0 | B |
| Overall | 21.0 | C |
| 2021 Background Plus Project | | |
| Eastbound Approach | 46.3 | D |
| Westbound Approach | 35.9 | D |
| Northbound Approach | 19.2 | B |
| Southbound Approach | 12.1 | B |
| Overall | 22.0 | C |
| 2040 Background | | |
| Eastbound Approach | 48.1 | D |
| Westbound Approach | 35.1 | C |
| Northbound Approach | 18.9 | B |
| Southbound Approach | 13.1 | B |
| Overall | 20.6 | C |
| 2040 Background Plus Project | | |
| Eastbound Approach | 40.7 | D |
| Westbound Approach | 34.1 | C |
| Northbound Approach | 19.8 | B |
| Southbound Approach | 14.3 | B |
| Overall | 21.0 | C |

West Mall Entrance and Mall Ring Road

The intersection of West Mall Entrance and Mall Ring Road currently operates with stop control in the northbound and southbound Mall Ring Road approaches. As such, all movements currently operate with acceptably with LOS B or better in the afternoon peak hour. With existing lane configurations, the movements at the intersection continue to operate acceptably with LOS C or better with or without the addition of project traffic during the afternoon peak hour throughout 2040. No modifications are anticipated to be required at this intersection. **Table 8** provides the results of the level of service at this intersection.

Table 8 – West Mall Entrance and Mall Ring Road LOS Results

| Scenario | PM Peak Hour | |
|-------------------------------------|--------------|-----|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Eastbound Approach | 2.6 | A |
| Northbound Left | 12.2 | B |
| Northbound Through | 10.4 | B |
| Southbound Through/Right | 9.9 | A |
| 2021 Background | | |
| Eastbound Approach | 4.1 | A |
| Northbound Left | 19.7 | C |
| Northbound Through | 12.4 | B |
| Southbound Through/Right | 10.2 | B |
| 2021 Background Plus Project | | |
| Eastbound Approach | 4.5 | A |
| Northbound Left | 24.3 | C |
| Northbound Through | 13.2 | B |
| Southbound Through/Right | 10.5 | B |
| 2040 Background | | |
| Eastbound Approach | 4.1 | A |
| Northbound Left | 19.7 | C |
| Northbound Through | 12.4 | B |
| Southbound Through/Right | 10.2 | B |
| 2040 Background Plus Project | | |
| Eastbound Approach | 4.5 | A |
| Northbound Left | 24.3 | C |
| Northbound Through | 13.2 | B |
| Southbound Through/Right | 10.5 | B |

Mall Ring Road and Crystal Street

The intersection of Mall Ring Road and Crystal Street currently operates with stop control in the eastbound and westbound approaches. All movements currently operate with LOS D or better during the afternoon peak hours. With existing lane configurations prior to the Fieldhouse project traffic, all movements operate acceptably in horizon year 2021 and 2040 except for the eastbound left-turn movement. With the existing lane configuration in 2021, the eastbound left turn movement at the intersection operates with LOS E during the PM peak hour prior to the addition of project traffic and with LOS F with project traffic. It is recommended that in short-term horizon year 2021 that all approaches be stop-controlled, or a roundabout be installed. With all-way stop control, a R1-1 “STOP” sign is recommended to be installed on the southbound approach on Crystal Street. When this occurs, it is recommended that the “INCOMING TRAFFIC DOES NOT STOP” signs underneath the existing “STOP” signs for the eastbound and westbound Mall Ring Road approaches be removed. It is recommended that all three “STOP” signs include R1-4 “ALL WAY” plaques under the “STOP” signs. In addition, orange flags should be affixed to the top of the new “STOP” sign on the southbound Crystal Street approach.

As directed by the City of Aurora, this intersection was also evaluated with roundabout control. With roundabout control, this intersection is expected to operate with acceptably with LOS A during the afternoon peak throughout the 2040 horizon. So, either control condition is anticipated to work acceptably in horizon year 2021 and 2040 with the addition of project traffic. **Table 9** provides the results of the level of service at this intersection.

Table 9 – Mall Ring Road and Crystal Street LOS Results

| Scenario | PM Peak Hour | |
|--|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Eastbound Left | 33.0 | D |
| Eastbound Through | 15.3 | C |
| Westbound Through/Right | 11.0 | B |
| Southbound Approach | 5.6 | A |
| 2021 Background | | |
| Eastbound Left | 37.6 | E |
| Eastbound Through | 14.5 | C |
| Westbound Through/Right | 10.9 | B |
| Southbound Approach | 4.7 | A |
| 2021 Background Plus Project | | |
| Eastbound Left | 65.7 | F |
| Eastbound Through | 15.4 | C |
| Westbound Through/Right | 11.3 | B |
| Southbound Approach | 4.5 | A |
| 2021 Background Plus Project # | | |
| Eastbound Left | 12.1 | B |
| Southbound Left | 14.5 | B |
| Eastbound Through | 9.2 | A |
| Westbound Through/Right | 11.5 | B |
| Southbound Right | 9.6 | A |
| Overall | 12.0 | B |
| 2021 Background Plus Project ## | 4.6 | A |
| 2040 Background | | |
| Eastbound Left | 37.6 | E |
| Eastbound Through | 14.5 | C |
| Westbound Through/Right | 10.9 | B |
| Southbound Approach | 4.7 | A |
| 2040 Background Plus Project | | |
| Eastbound Left | 65.7 | F |
| Eastbound Through | 15.4 | C |
| Westbound Through/Right | 11.3 | B |
| Southbound Approach | 7.7 | A |
| 2040 Background Plus Project # | | |
| Eastbound Left | 12.1 | B |
| Southbound Left | 14.5 | B |
| Eastbound Through | 9.2 | A |
| Westbound Through/Right | 11.5 | B |
| Southbound Right | 9.6 | A |
| Overall | 12.0 | B |
| 2040 Background Plus Project ## | 4.6 | A |

= Stop-control on all approaches

= Roundabout Control

Centrepont Drive and Mall Ring Road

The intersection of Centrepont Drive and Mall Ring Road intersection currently operates with all-way stop control. All movements currently operate with acceptably with LOS B or better in the afternoon peak hour. With existing lane configurations, the movements at the intersection continue to operate acceptably with LOS B or better with or without the addition of project traffic during the afternoon peak hour. No modifications are anticipated to be required at this intersection. **Table 10** provides the results of the level of service at this intersection.

Table 10 – Centrepont Drive and Mall Ring Road LOS Results

| Scenario | PM Peak Hour | |
|-------------------------------------|--------------|----------|
| | Delay (sec) | LOS |
| 2020 Existing | | |
| Westbound Left | 10.5 | B |
| Westbound Right | 8.2 | A |
| Northbound Through/Right | 9.7 | A |
| Southbound Left | 9.8 | A |
| Southbound Through | 8.8 | A |
| Overall | 9.6 | A |
| 2021 Background | | |
| Westbound Left | 10.3 | B |
| Westbound Right | 8.1 | A |
| Northbound Through/Right | 9.5 | A |
| Southbound Left | 9.6 | A |
| Southbound Through | 8.7 | A |
| Overall | 9.4 | A |
| 2021 Background Plus Project | | |
| Westbound Left | 10.7 | B |
| Westbound Right | 8.8 | A |
| Northbound Through/Right | 10.0 | A |
| Southbound Left | 10.4 | B |
| Southbound Through | 9.0 | A |
| Overall | 9.9 | A |
| 2040 Background | | |
| Westbound Left | 10.3 | B |
| Westbound Right | 8.1 | A |
| Northbound Through/Right | 9.5 | A |
| Southbound Left | 9.6 | A |
| Southbound Through | 8.7 | A |
| Overall | 9.4 | A |
| 2040 Background Plus Project | | |
| Westbound Left | 10.5 | B |
| Westbound Right | 8.6 | A |
| Northbound Through/Right | 9.7 | A |
| Southbound Left | 10.2 | B |
| Southbound Through | 8.8 | A |
| Overall | 9.7 | A |

5.3 Vehicle Queuing Analysis

An intersection queuing analysis was performed for the study area intersections in 2021 and 2040. The queuing analysis was performed using the Synchro analysis software presenting the results of the 95th percentile queue length. Queue analysis worksheets at the signalized intersections are provided in **Appendix E**. Queue length calculations for unsignalized intersections are provided within the level of service operational sheets provided in **Appendix D**. Results of the queuing analysis and recommendations at the study area intersections are provided in **Table 11**. Note, any queue lengths calculated at less than one vehicle were rounded up to 25 feet to account for one vehicle of storage needed.

Table 11 – Queuing Analysis Results

| Intersection Turn Lane | Existing Turn Lane Length (feet) | 2021 Calculated Queue Length (feet) | 2040 Calculated Queue Length (feet) | 2040 Recommended Turn Lane Length (feet) |
|--|----------------------------------|-------------------------------------|-------------------------------------|--|
| West Mall Entrance & Abilene St | | | | |
| Southbound Left | 125' | 62' | 61' | 125' |
| Westbound Left | 75' C | 53' | 53' | 75' C |
| Westbound Right | 75' C | 52' | 60' | 75' C |
| Abilene St & Alameda Ave | | | | |
| Eastbound Left | 100' DL | 99' DL | 100' DL | 100' DL |
| Eastbound Right | 300' C | 168' | 243' | 300' C |
| Westbound Left | 300' DL | 51' DL | 38' DL | 300' DL |
| Westbound Right | 150' | 25' | 25' | 150' |
| Northbound Left | 350' DL | 239' DL | 241' DL | 350' DL |
| Northbound Right | 350' | 25' | 25' | 350' |
| Southbound Left | 175' DL | 158' DL | 159' DL | 175' DL |
| Southbound Right | 175' | 58' | 65' | 175' |
| Alameda Ave & Crystal St | | | | |
| Eastbound Left | 175' DL | 25' DL | 25' DL | 175' DL |
| Eastbound Right | 625' C | 25' | 25' | 625' C |
| Westbound Left | 200' | 166' | 166' | 200' |
| Northbound Left | 160' C | 117' | 117' | 160' C |
| Northbound Through/Right | 160' C | 172' | 172' | 160' C |
| Southbound Left | 100' DL | 34' DL | 37' DL | 100' DL |
| Alameda Ave & Sable Blvd | | | | |
| Eastbound Left | 250' | 136' | 155' | 250' |
| Eastbound Right | 175' | 25' | 25' | 175' |
| Westbound Left | 175' DL | 27' DL | 37' DL | 175' DL |
| Westbound Right | 100' | 82' | 149' | 150' |
| Northbound Left | 300' DL | 81' DL | 127' DL | 300' DL |
| Northbound Right | 300' | 25' | 25' | 300' |
| Southbound Left | 150' DL | 150' DL | 276' DL | 275' DL |
| Southbound Right | 150' | 65' | 144' | 150' |

| | | | | |
|---|--------|-----|------|--------|
| Centrepont Dr & Sable Blvd | | | | |
| Eastbound Left | 250' C | 97' | 76' | 250' C |
| Eastbound Through/Right | 250' C | 97' | 102' | 250' C |
| Westbound Left | 100' | 65' | 86' | 100' |
| Northbound Left | 200' | 49' | 53' | 200' |
| Northbound Right | 125' | 25' | 25' | 125' |
| Southbound Left | 250' | 37' | 47' | 250' |
| West Mall Ring Road | | | | |
| Eastbound Left | 75' C | 25' | 25' | 75' C |
| Eastbound Right | 75' C | 25' | 25' | 75' C |
| Northbound Left | TWLTL | 38' | 38' | TWLTL |
| Mall Ring Road & Crystal St# | | | | |
| Eastbound Left | TWLTL | 50' | 50' | TWLTL |
| Southbound Left | 150' C | 75' | 75' | 150' C |
| Southbound Right | 150' C | 25' | 25' | 150' C |
| Mall Ring Road & Centerpoint | | | | |
| Southbound Left | TWLTL | 25' | 25' | TWLTL |
| Westbound Left | 250' C | 50' | 50' | 250' C |
| Westbound Right | 250' C | 25' | 25' | 250' C |

= All Way Stop Control Improvement

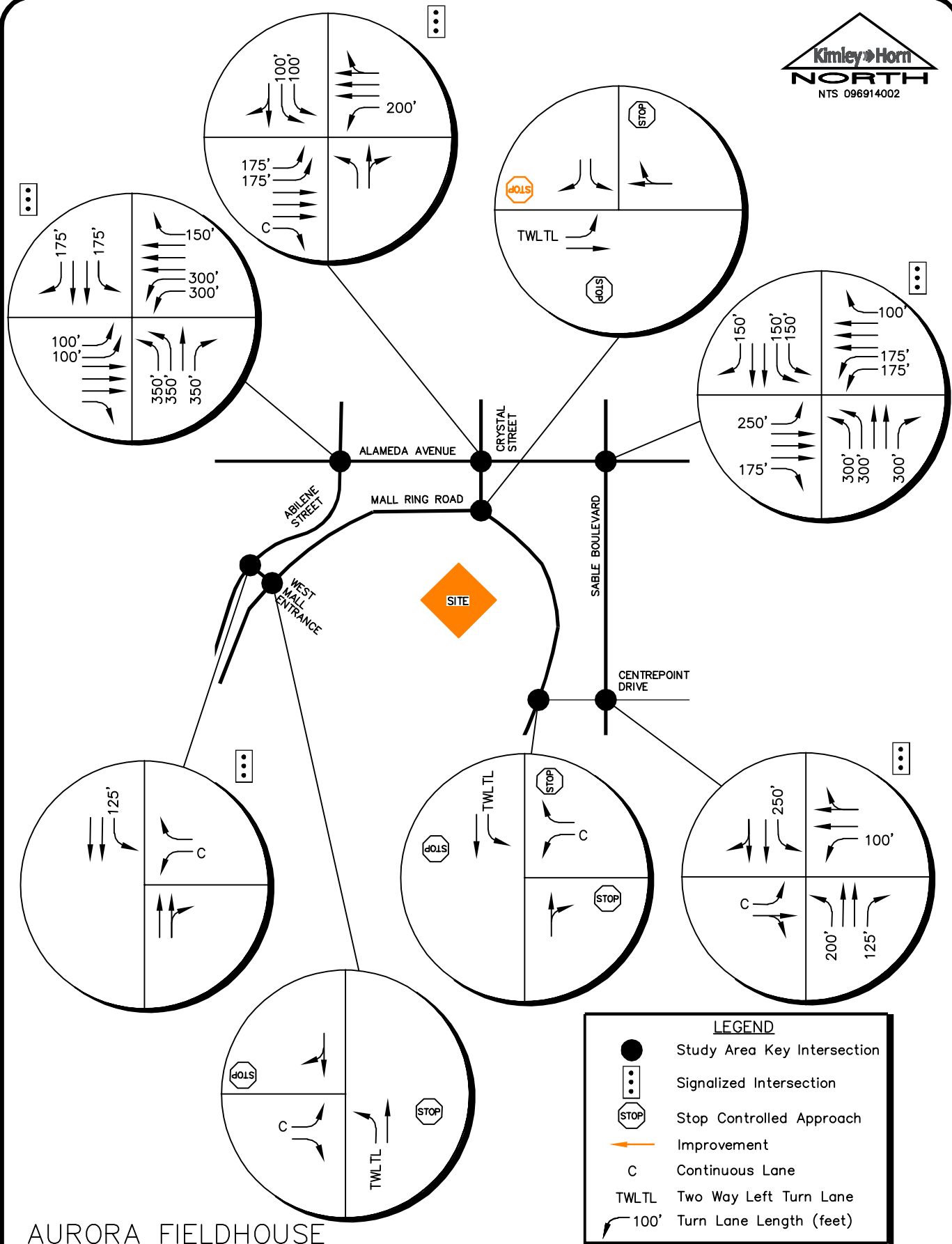
DL = Dual Left Turn Lanes; C=Continuous; TWLTL= Two-Way Left-Turn Lane

As shown in the vehicle queueing table, most vehicle queues are expected to be contained within existing lane lengths in the short term 2021 and long term 2040 horizon. The following provides a description of turn lanes that may not have adequate queue lengths:

- The continuous northbound approach for the through/right turn movement at Alameda Avenue and Crystal Street may have queues of approximately 172 feet, which exceed the 160-feet available back to the internal Ring Road intersection. An additional 12 seconds of green time was allocated to the northbound approach to achieve this reported 172 feet of storage while only slightly impacting delays along Alameda Avenue. Therefore, timing modifications may be needed at the existing signal to allocate additional green time for the northbound minor phase by increasing the max-green. Of note, it requires adding 18 seconds of additional northbound green time to report an expected vehicle queue length of 160 feet. This amount of additional green time significantly impacts the through movements along Alameda Avenue and is not recommended.
- The southbound left-turn lane at the Alameda Avenue and Sable Boulevard intersection is expected to exceed existing striped storage in the long-term horizon year. The combined striped storage and taper provide approximately 400-feet of length; therefore, shortening the left turn lane taper is recommended to designate 275-foot southbound left turn lanes. It should be noted that project traffic does not contribute to this movement.

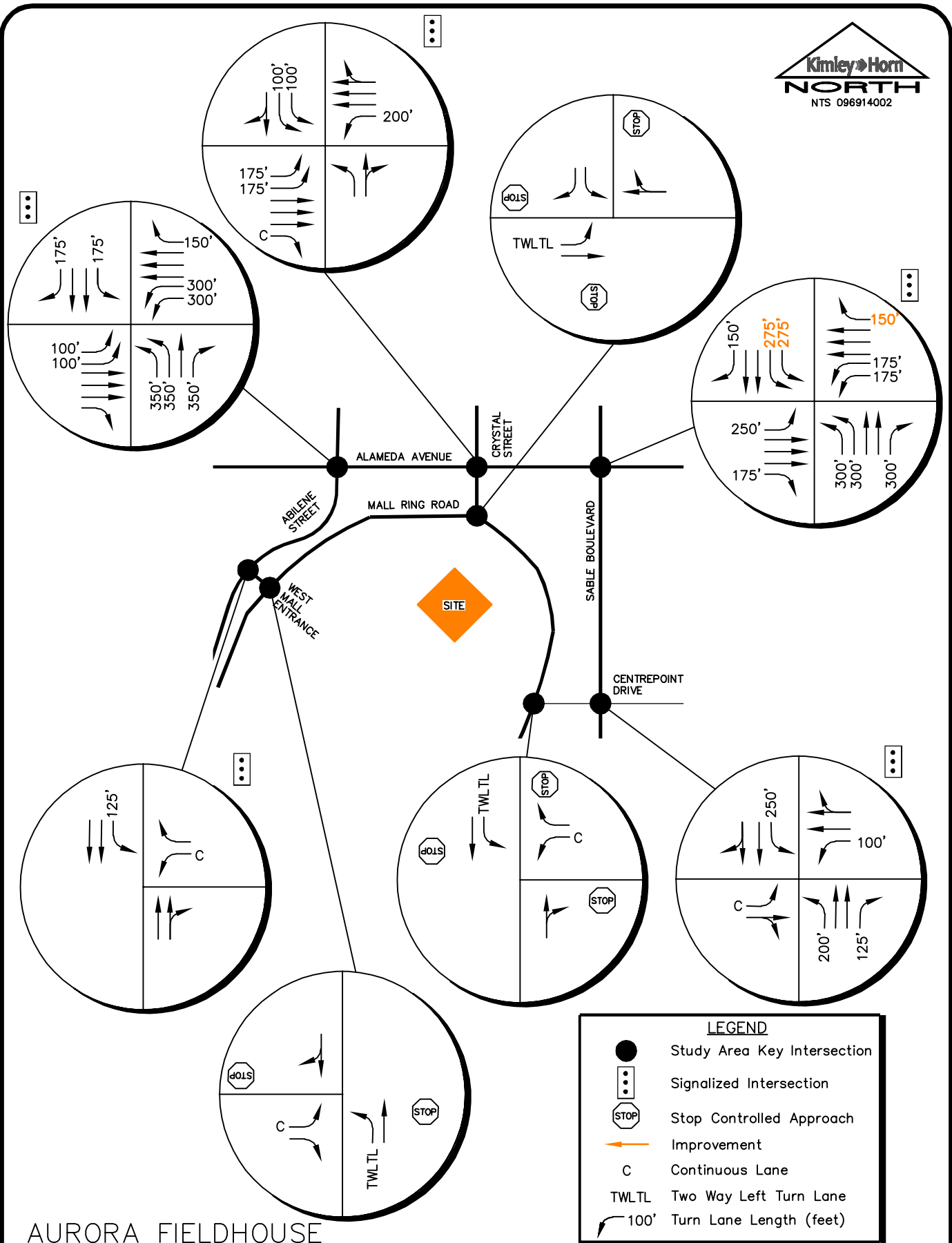
- The 100-foot westbound right-turn lane at the Alameda Avenue and Sable Boulevard intersection may have volumes that exceed existing storage in long term horizon year 2040, so a right turn lane extension to 150 feet should be considered if found to be needed in the future. It should be noted that project traffic does not contribute to this movement.

Based on the results of the intersection operational and turn lane queuing analysis, the recommended lane configurations and control of the study key intersections is shown in **Figure 11** for the 2021 buildout year and **Figure 12** for the long-term 2040 horizon.



AURORA FIELDHOUSE
2021 RECOMMENDED
LANE CONFIGURATIONS AND CONTROL

FIGURE 11



AURORA FIELDHOUSE
2040 RECOMMENDED
LANE CONFIGURATIONS AND CONTROL

FIGURE 12

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes the proposed Fieldhouse at Aurora Town Center project will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network and the proposed project development with expected traffic volumes resulted in the following recommendations:

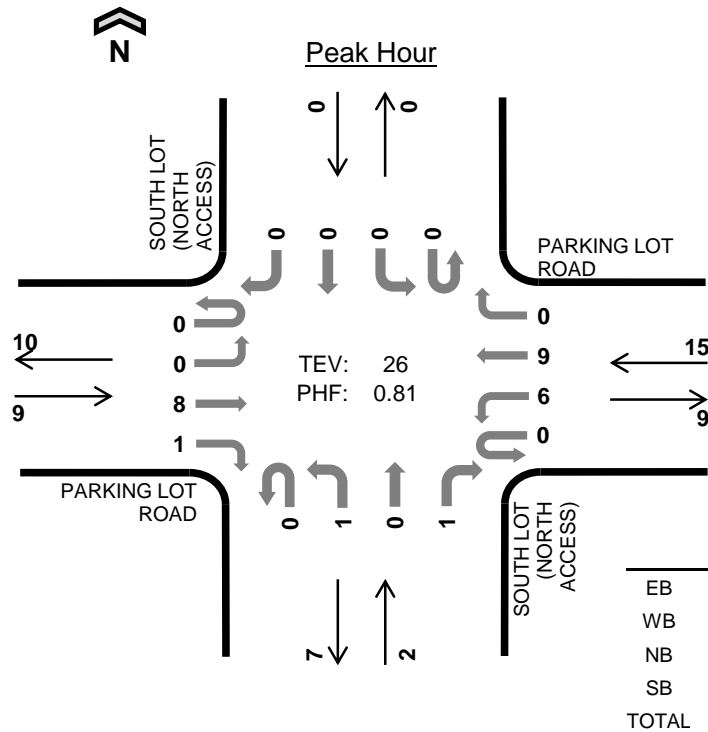
- The eastbound left-turn movement at the intersection of Crystal Street and Mall Ring Road operates with a LOS E without project traffic and at a LOS F with project traffic with the existing intersection traffic control of incoming traffic having free flow movements. Therefore, it is recommended that the intersection be considered for All-Way Stop Control (AWSC) or a roundabout. With the AWSC improvement, a R1-1 “STOP” sign is recommended to be installed on the southbound Crystal Street approach. When this occurs, it is recommended that the “INCOMING TRAFFIC DOES NOT STOP” signs underneath the existing “STOP” signs for the eastbound and westbound Mall Ring Road approaches be removed. It is recommended that all three “STOP” signs include R1-4 “ALL WAY” plaques under the “STOP” signs. In addition, orange flags should be affixed to the top of the new “STOP” sign on the southbound Crystal Street approach.
- The continuous northbound approach for the through/right turn movement at Alameda Avenue and Crystal Street may have queues of approximately 200 feet to 225 feet, which exceed the 160-feet available back to the internal Ring Road intersection with the existing signal timing. If this occurs, timing modifications to maximize the green time for the Crystal Street northbound approach may be needed to allocate an additional 12 seconds of green time for the northbound minor phase bringing the anticipated queue length down to 172 feet, which is close to being met by the existing 160-foot length available. This should be monitored to determine if timing modifications for max-green need to be changed in the controller with the In-N-Out Burger and Fieldhouse projects traffic added.
- Any on-site and off-site roadway improvements should be incorporated into the Civil Drawings, and conform to the City of Aurora Standards, Institute of Transportation Engineers (ITE), and the Manual on Traffic Control Devices (MUTCD) – 2009 Edition.

APPENDICES

APPENDIX A

Intersection Count Sheets

SOUTH LOT (NORTH ACCESS) PARKING LOT ROAD



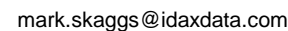
Three-Hour Count Summaries

| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | SOUTH LOT (NORTH ACCESS) | | | | SOUTH LOT (NORTH ACCESS) | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|----|----|----|--------------------------|----|----|----|--------------------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 8:00 AM | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 |
| 8:15 AM | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| 8:30 AM | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 8:45 AM | 0 | 0 | 1 | 1 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 26 |
| Peak Hour | 0 | 0 | 8 | 1 | 0 | 6 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | 0 |

Note: For all three-hour count summary, see next page.

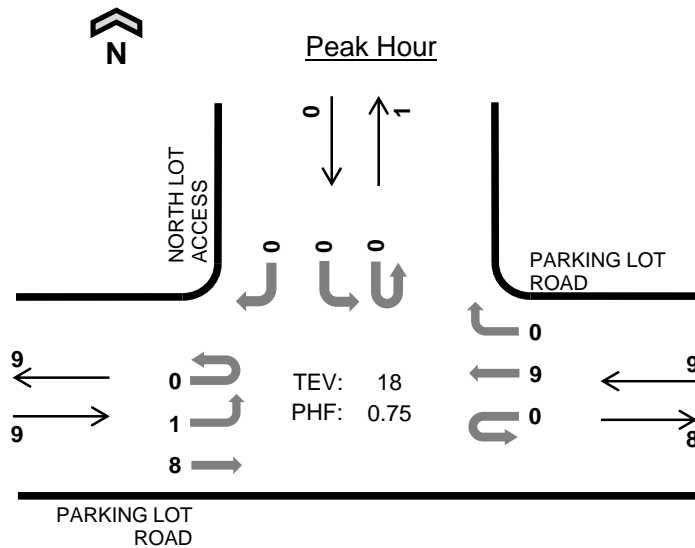
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour | 4 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|------------------|----------|----|----|--------------------------|-------|----------------------------|------|--------------------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | SOUTH LOT (NORTH ACCESS) | | | | SOUTH LOT (NORTH ACCESS) | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 |
| 7:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 |
| 8:00 AM | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 13 |
| 8:15 AM | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17 |
| 8:30 AM | 0 | 0 | 3 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 22 |
| 8:45 AM | 0 | 0 | 1 | 1 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 26 |
| Count Total | 0 | 0 | 11 | 1 | 0 | 9 | 16 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 40 | 0 |
| Peak Hour | 0 | 0 | 8 | 1 | 0 | 6 | 9 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 26 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:30 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 5 | 5 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Peak Hour | 4 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

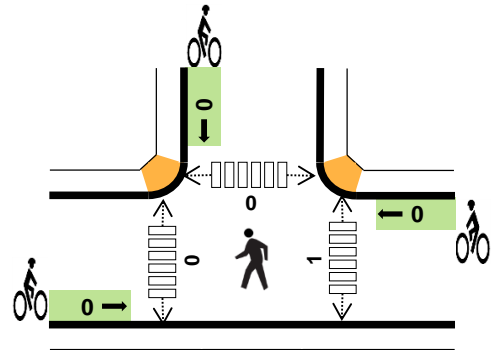


| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|-----|----|------------------|----------|-----|----|--------------------------|-------|----------------------------|------|--------------------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | SOUTH LOT (NORTH ACCESS) | | | | SOUTH LOT (NORTH ACCESS) | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 13 | 0 | 0 | 8 | 17 | 2 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 45 | 0 |
| 4:15 PM | 0 | 0 | 12 | 0 | 0 | 5 | 25 | 1 | 0 | 2 | 0 | 5 | 0 | 1 | 0 | 0 | 51 | 0 |
| 4:30 PM | 0 | 0 | 18 | 2 | 0 | 2 | 8 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 35 | 0 |
| 4:45 PM | 0 | 0 | 17 | 0 | 0 | 4 | 11 | 6 | 0 | 0 | 0 | 1 | 0 | 4 | 1 | 0 | 44 | 175 |
| 5:00 PM | 0 | 0 | 16 | 0 | 0 | 3 | 16 | 1 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 0 | 43 | 173 |
| 5:15 PM | 0 | 0 | 20 | 0 | 0 | 4 | 16 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 48 | 170 |
| 5:30 PM | 0 | 1 | 13 | 0 | 0 | 3 | 18 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 40 | 175 |
| 5:45 PM | 0 | 0 | 23 | 0 | 0 | 2 | 20 | 6 | 0 | 3 | 0 | 4 | 0 | 5 | 0 | 0 | 63 | 194 |
| 6:00 PM | 0 | 0 | 15 | 1 | 0 | 7 | 23 | 0 | 0 | 2 | 1 | 4 | 0 | 2 | 0 | 1 | 56 | 207 |
| 6:15 PM | 0 | 0 | 24 | 0 | 1 | 10 | 17 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 57 | 216 |
| 6:30 PM | 0 | 0 | 12 | 0 | 0 | 2 | 6 | 2 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 28 | 204 |
| 6:45 PM | 0 | 0 | 12 | 2 | 0 | 8 | 16 | 2 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 1 | 47 | 188 |
| Count Total | 0 | 1 | 195 | 5 | 1 | 58 | 193 | 26 | 0 | 7 | 2 | 46 | 0 | 19 | 1 | 3 | 557 | 0 |
| Peak Hour | 0 | 1 | 75 | 1 | 1 | 22 | 78 | 10 | 0 | 5 | 1 | 14 | 0 | 7 | 0 | 1 | 216 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | | |
| 5:00 PM | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 3 | | |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Count Total | 1 | 2 | 1 | 0 | 4 | 0 | 2 | 0 | 2 | 4 | 3 | 1 | 1 | 1 | 1 | 6 | | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 3 | | |

NORTH LOT ACCESS PARKING LOT ROAD



Date: Thu, Sep 05, 2019
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 44.4% | 0.56 |
| WB | 22.2% | 0.75 |
| NB | - | - |
| SB | - | - |
| TOTAL | 33.3% | 0.75 |

Three-Hour Count Summaries

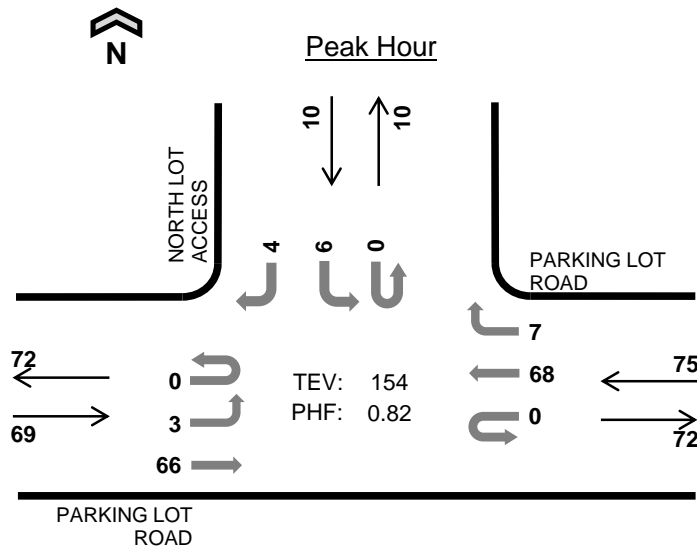
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | NORTH LOT ACCESS | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|----|----|----|------------|----|----|----|------------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 8:00 AM | 0 | 1 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 8:30 AM | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| 8:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 18 |
| Peak Hour | 0 | 1 | 8 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 |

Note: For all three-hour count summary, see next page.

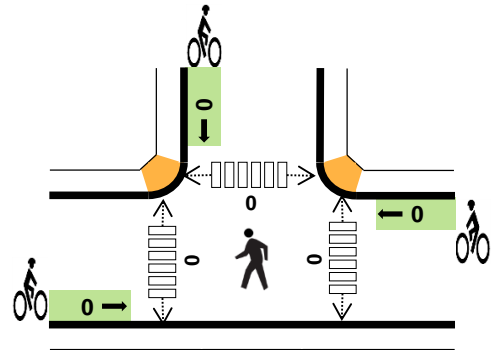
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| 8:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour | 4 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|------------------|----------|----|----|------------|-------|----------------------------|------|------------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | NORTH LOT ACCESS | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 |
| 7:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 |
| 8:00 AM | 0 | 1 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 9 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 |
| 8:30 AM | 0 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 15 |
| 8:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 18 |
| Count Total | 0 | 1 | 11 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 |
| Peak Hour | 0 | 1 | 8 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 2 | 2 |
| 8:45 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 5 | 4 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 3 | 3 |
| Peak Hr | 4 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 2 | 2 |

NORTH LOT ACCESS PARKING LOT ROAD



Date: Thu, Sep 05, 2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:30 PM to 6:30 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 0.0% | 0.78 |
| WB | 0.0% | 0.85 |
| NB | - | - |
| SB | 0.0% | 0.83 |
| TOTAL | 0.0% | 0.82 |

Three-Hour Count Summaries

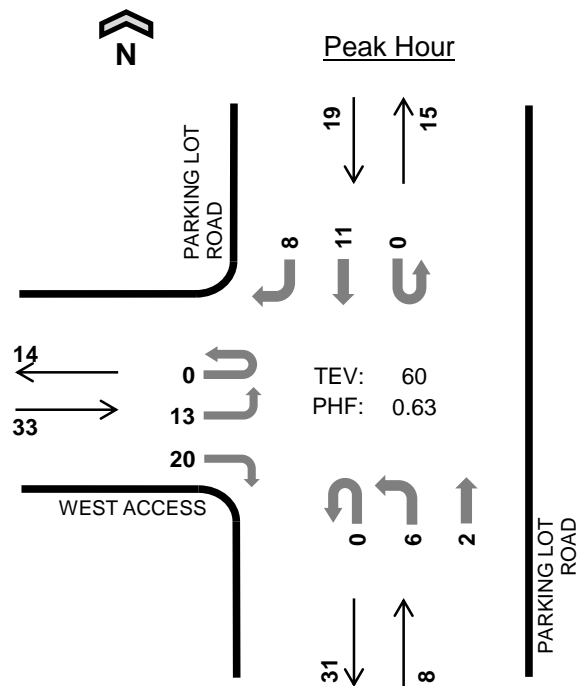
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | NORTH LOT ACCESS | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|----|----|----|------------|----|----|----|------------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 5:30 PM | 0 | 1 | 13 | 0 | 0 | 0 | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 31 | 0 |
| 5:45 PM | 0 | 2 | 20 | 0 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 47 | 0 |
| 6:00 PM | 0 | 0 | 13 | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 36 | 0 |
| 6:15 PM | 0 | 0 | 20 | 0 | 0 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 40 | 154 |
| Peak Hour | 0 | 3 | 66 | 0 | 0 | 0 | 68 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 154 | 0 |

Note: For all three-hour count summary, see next page.

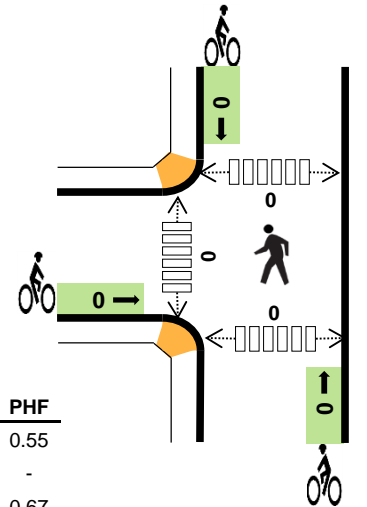
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|-----|----|------------------|----------|-----|----|------------|-------|----------------------------|------|------------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | NORTH LOT ACCESS | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 1 | 12 | 0 | 0 | 0 | 15 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 31 | 0 |
| 4:15 PM | 0 | 2 | 10 | 0 | 0 | 0 | 21 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 |
| 4:30 PM | 0 | 1 | 20 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 28 | 0 |
| 4:45 PM | 0 | 2 | 13 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 28 | 124 |
| 5:00 PM | 0 | 2 | 16 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 35 | 128 |
| 5:15 PM | 0 | 0 | 17 | 0 | 0 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 38 | 129 |
| 5:30 PM | 0 | 1 | 13 | 0 | 0 | 0 | 11 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 31 | 132 |
| 5:45 PM | 0 | 2 | 20 | 0 | 0 | 0 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 47 | 151 |
| 6:00 PM | 0 | 0 | 13 | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 36 | 152 |
| 6:15 PM | 0 | 0 | 20 | 0 | 0 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 40 | 154 |
| 6:30 PM | 0 | 3 | 11 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 25 | 148 |
| 6:45 PM | 0 | 0 | 11 | 0 | 0 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 28 | 129 |
| Count Total | 0 | 14 | 176 | 0 | 0 | 0 | 174 | 15 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 10 | 404 | 0 |
| Peak Hour | 0 | 3 | 66 | 0 | 0 | 0 | 68 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 154 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | | |
| 4:30 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | | |
| 5:00 PM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 6:45 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Count Total | 2 | 2 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 2 | 0 | | |
| Peak Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |

PARKING LOT ROAD WEST ACCESS



Date: Wed, Aug 28, 2019
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 0.0% | 0.55 |
| WB | - | - |
| NB | 0.0% | 0.67 |
| SB | 5.3% | 0.79 |
| TOTAL | 1.7% | 0.63 |

Three-Hour Count Summaries

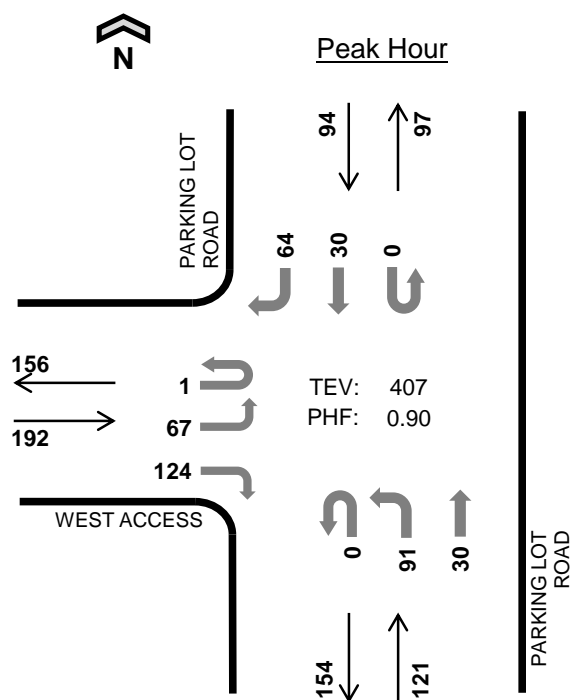
| Interval Start | WEST ACCESS | | | | 0 | | | | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 15-min Total | Rolling One Hour |
|-------------------|-------------|----|----|----|-----------|----|----|----|------------------|----|----|----|------------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 8:00 AM | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 0 |
| 8:15 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 7 | 0 |
| 8:30 AM | 0 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 24 | 0 |
| 8:45 AM | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 15 | 60 |
| Peak Hour | 0 | 13 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 11 | 8 | 60 | 0 |

Note: For all three-hour count summary, see next page.

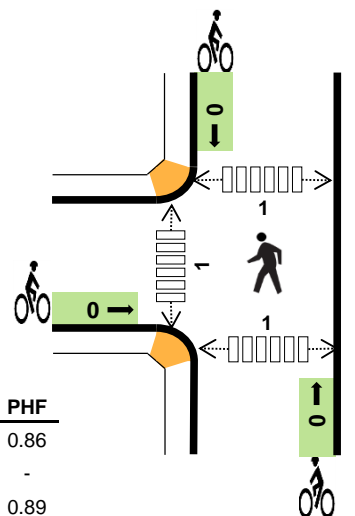
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|-----------|----------|----|----|------------------|-------|----------------------------|------|------------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | WEST ACCESS | | | | 0 | | | | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 6 | 0 |
| 6:15 AM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 6:30 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| 7:00 AM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 10 | 14 |
| 7:15 AM | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 19 |
| 7:30 AM | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 22 |
| 7:45 AM | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 4 | 11 | 33 |
| 8:00 AM | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 37 |
| 8:15 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 7 | 36 |
| 8:30 AM | 0 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 6 | 0 | 24 | 56 |
| 8:45 AM | 0 | 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 15 | 60 |
| Count Total | 0 | 23 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 0 | 0 | 16 | 16 | 103 | 0 |
| Peak Hour | 0 | 13 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 6 | 2 | 0 | 0 | 0 | 11 | 8 | 60 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 1 | 0 | 1 | 2 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hr | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

PARKING LOT ROAD WEST ACCESS



Date: Wed, Aug 28, 2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:00 PM to 6:00 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 0.0% | 0.86 |
| WB | - | - |
| NB | 0.0% | 0.89 |
| SB | 0.0% | 0.87 |
| TOTAL | 0.0% | 0.90 |

Three-Hour Count Summaries

| Interval Start | WEST ACCESS | | | | 0 | | | | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 15-min Total | Rolling One Hour |
|-------------------|-------------|----|----|-----|-----------|----|----|----|------------------|----|----|----|------------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 5:00 PM | 0 | 18 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 26 | 8 | 0 | 0 | 0 | 10 | 13 | 113 | 0 |
| 5:15 PM | 0 | 14 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 24 | 4 | 0 | 0 | 0 | 10 | 17 | 100 | 0 |
| 5:30 PM | 0 | 20 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 17 | 9 | 0 | 0 | 0 | 6 | 21 | 99 | 0 |
| 5:45 PM | 1 | 15 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 24 | 9 | 0 | 0 | 0 | 4 | 13 | 95 | 407 |
| Peak Hour | 1 | 67 | 0 | 124 | 0 | 0 | 0 | 0 | 0 | 91 | 30 | 0 | 0 | 0 | 30 | 64 | 407 | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |

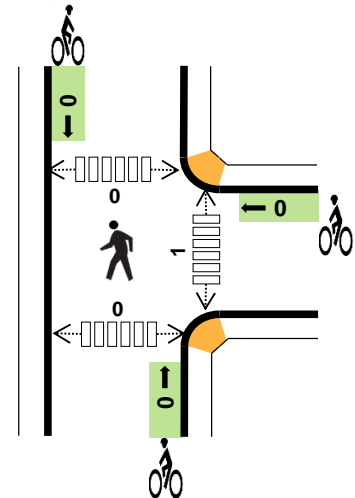
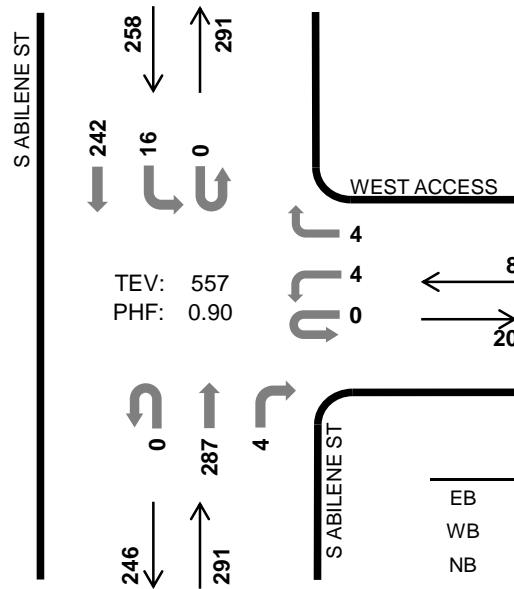
| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|----|-----|-----------|----------|----|----|------------------|-------|----------------------------|------|------------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | WEST ACCESS | | | | 0 | | | | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 16 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 23 | 7 | 0 | 0 | 0 | 16 | 23 | 107 | 0 |
| 4:15 PM | 0 | 15 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 19 | 6 | 0 | 0 | 0 | 5 | 22 | 89 | 0 |
| 4:30 PM | 0 | 15 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 20 | 3 | 0 | 0 | 0 | 4 | 20 | 86 | 0 |
| 4:45 PM | 1 | 12 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 18 | 6 | 0 | 0 | 0 | 5 | 16 | 86 | 368 |
| 5:00 PM | 0 | 18 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 26 | 8 | 0 | 0 | 0 | 10 | 13 | 113 | 374 |
| 5:15 PM | 0 | 14 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 24 | 4 | 0 | 0 | 0 | 10 | 17 | 100 | 385 |
| 5:30 PM | 0 | 20 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 17 | 9 | 0 | 0 | 0 | 6 | 21 | 99 | 398 |
| 5:45 PM | 1 | 15 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 24 | 9 | 0 | 0 | 0 | 4 | 13 | 95 | 407 |
| 6:00 PM | 0 | 14 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 37 | 6 | 0 | 0 | 0 | 5 | 16 | 103 | 397 |
| 6:15 PM | 0 | 13 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 32 | 5 | 0 | 0 | 0 | 4 | 13 | 95 | 392 |
| 6:30 PM | 0 | 15 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 16 | 8 | 0 | 0 | 0 | 6 | 16 | 86 | 379 |
| 6:45 PM | 0 | 19 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 35 | 5 | 0 | 0 | 0 | 8 | 12 | 106 | 390 |
| Count Total | 2 | 186 | 0 | 325 | 0 | 0 | 0 | 0 | 0 | 291 | 76 | 0 | 0 | 0 | 83 | 202 | 1,165 | 0 |
| Peak Hour | 1 | 67 | 0 | 124 | 0 | 0 | 0 | 0 | 0 | 91 | 30 | 0 | 0 | 0 | 30 | 64 | 407 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 6:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | |
| Peak Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | |

S ABILENE ST WEST ACCESS



Peak Hour

Date: Thu, Sep 05, 2019
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | - | - |
| WB | 0.0% | 0.50 |
| NB | 1.0% | 0.82 |
| SB | 2.7% | 0.83 |
| TOTAL | 1.8% | 0.90 |

Three-Hour Count Summaries

| Interval Start | 0 | | | | WEST ACCESS | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
|-------------------|-----------|----|----|----|-------------|----|----|----|--------------|----|-----|----|--------------|----|-----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 77 | 0 | 0 | 4 | 46 | 0 | 128 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 3 | 0 | 4 | 61 | 0 | 154 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 61 | 1 | 0 | 3 | 75 | 0 | 143 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 63 | 0 | 0 | 5 | 60 | 0 | 132 | 557 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 287 | 4 | 0 | 16 | 242 | 0 | 557 | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:30 AM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Peak Hour | 0 | 0 | 3 | 7 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |

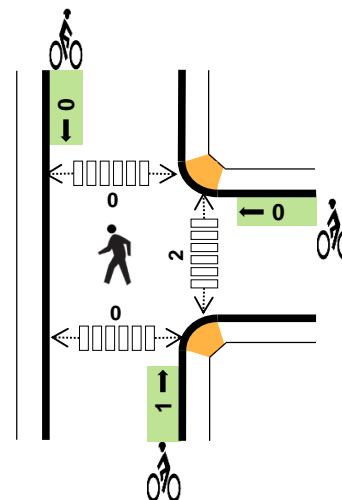
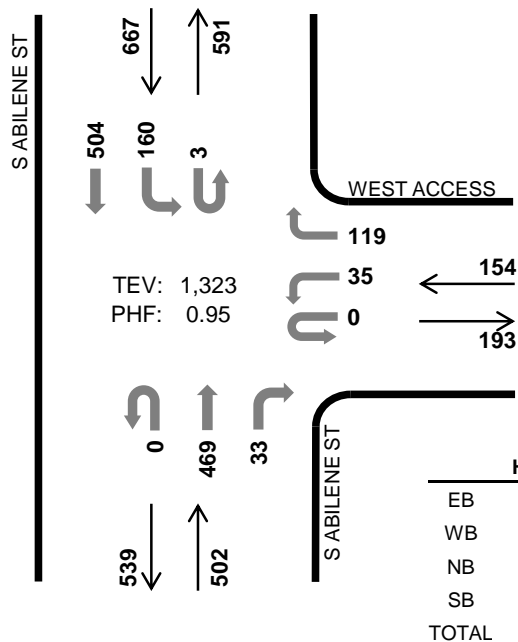
| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|-------------|----------|----|----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | 0 | | | | WEST ACCESS | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 4 | 21 | 0 | 37 | 0 |
| 6:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 1 | 0 | 2 | 25 | 0 | 47 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 1 | 20 | 0 | 58 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 37 | 2 | 0 | 3 | 38 | 0 | 83 | 225 |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 45 | 0 | 1 | 4 | 32 | 0 | 84 | 272 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 54 | 0 | 0 | 2 | 36 | 0 | 93 | 318 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 77 | 0 | 0 | 4 | 46 | 0 | 128 | 388 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 3 | 0 | 4 | 61 | 0 | 154 | 459 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 61 | 1 | 0 | 3 | 75 | 0 | 143 | 518 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 63 | 0 | 0 | 5 | 60 | 0 | 132 | 557 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 66 | 3 | 0 | 5 | 50 | 0 | 127 | 556 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 0 | 0 | 56 | 0 | 1 | 19 | 67 | 0 | 152 | 554 |
| Count Total | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 16 | 0 | 0 | 613 | 10 | 2 | 56 | 531 | 0 | 1,238 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 287 | 4 | 0 | 16 | 242 | 0 | 557 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 AM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:30 AM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 AM | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 7:30 AM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8:30 AM | 0 | 2 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 8:45 AM | 0 | 1 | 2 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Count Total | 0 | 3 | 14 | 16 | 33 | 0 | 0 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| Peak Hr | 0 | 0 | 3 | 7 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |

S ABILENE ST WEST ACCESS



Peak Hour

Date: Thu, Sep 05, 2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:00 PM to 6:00 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | - | - |
| WB | 0.0% | 0.86 |
| NB | 0.4% | 0.83 |
| SB | 0.4% | 0.97 |
| TOTAL | 0.4% | 0.95 |

Three-Hour Count Summaries

| Interval Start | 0 | | | | WEST ACCESS | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
|-------------------|-----------|----|----|----|-------------|----|----|-----|--------------|----|-----|----|--------------|-----|-----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 36 | 0 | 0 | 130 | 7 | 0 | 37 | 129 | 0 | 348 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 30 | 0 | 0 | 138 | 13 | 0 | 37 | 124 | 0 | 350 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 21 | 0 | 0 | 106 | 7 | 3 | 42 | 127 | 0 | 315 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 32 | 0 | 0 | 95 | 6 | 0 | 44 | 124 | 0 | 310 | 1,323 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 119 | 0 | 0 | 469 | 33 | 3 | 160 | 504 | 0 | 1,323 | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 5:00 PM | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Peak Hour | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 |

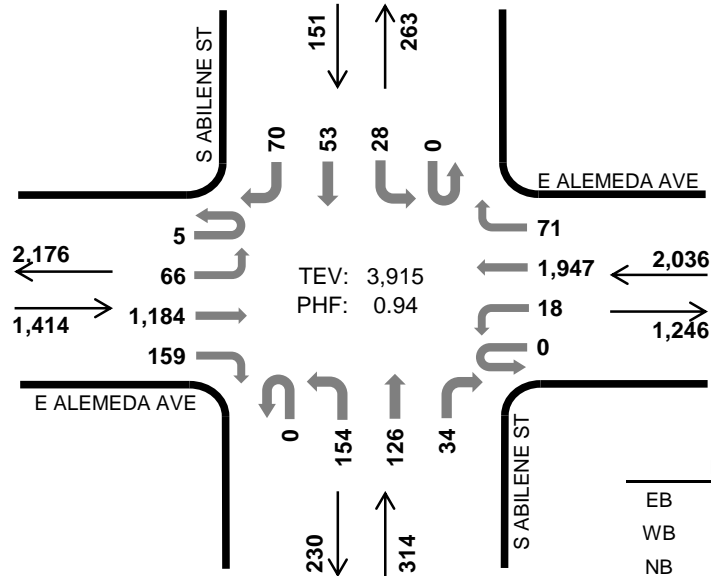
| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|-------------|----------|----|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | 0 | | | | WEST ACCESS | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 26 | 0 | 0 | 109 | 5 | 1 | 41 | 124 | 0 | 312 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 30 | 0 | 0 | 115 | 10 | 1 | 30 | 150 | 0 | 347 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 26 | 0 | 0 | 132 | 13 | 0 | 33 | 100 | 0 | 311 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 25 | 0 | 0 | 87 | 7 | 0 | 35 | 136 | 0 | 303 | 1,273 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 36 | 0 | 0 | 130 | 7 | 0 | 37 | 129 | 0 | 348 | 1,309 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 30 | 0 | 0 | 138 | 13 | 0 | 37 | 124 | 0 | 350 | 1,312 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 21 | 0 | 0 | 106 | 7 | 3 | 42 | 127 | 0 | 315 | 1,316 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 32 | 0 | 0 | 95 | 6 | 0 | 44 | 124 | 0 | 310 | 1,323 |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 45 | 0 | 0 | 115 | 4 | 0 | 30 | 102 | 0 | 310 | 1,285 |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 39 | 0 | 0 | 109 | 9 | 0 | 30 | 97 | 0 | 289 | 1,224 |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 31 | 0 | 0 | 97 | 3 | 0 | 38 | 119 | 0 | 291 | 1,200 |
| 6:45 PM | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 46 | 0 | 0 | 85 | 7 | 1 | 35 | 90 | 0 | 269 | 1,159 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 99 | 0 | 387 | 0 | 0 | 1,318 | 91 | 6 | 432 | 1,422 | 0 | 3,755 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 119 | 0 | 0 | 469 | 33 | 3 | 160 | 504 | 0 | 1,323 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 0 | 2 | 1 | 1 | 4 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | | | |
| 4:15 PM | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 4:30 PM | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 5:00 PM | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 5:15 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | | | |
| 5:30 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| 6:00 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 6:45 PM | 0 | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| Count Total | 0 | 3 | 6 | 8 | 17 | 0 | 1 | 1 | 0 | 2 | 6 | 0 | 0 | 0 | 6 | | | |
| Peak Hr | 0 | 0 | 2 | 3 | 5 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | | | |

S ABILENE ST E ALEMEDA AVE



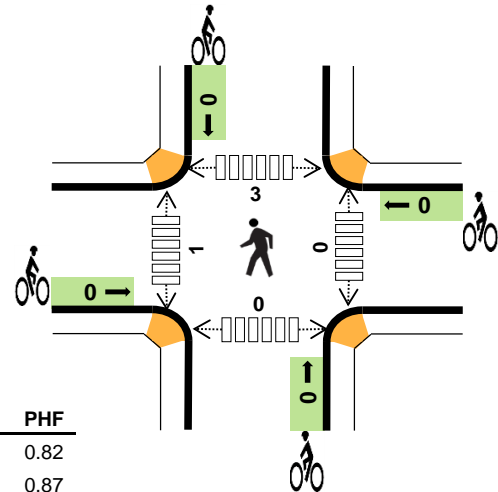
Peak Hour

Date: Wed, Aug 28, 2019
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



TEV: 3,915
PHF: 0.94

| | HV %: | PHF |
|-------|-------|------|
| EB | 1.3% | 0.82 |
| WB | 1.3% | 0.87 |
| NB | 0.6% | 0.82 |
| SB | 2.0% | 0.84 |
| TOTAL | 1.3% | 0.94 |



Three-Hour Count Summaries

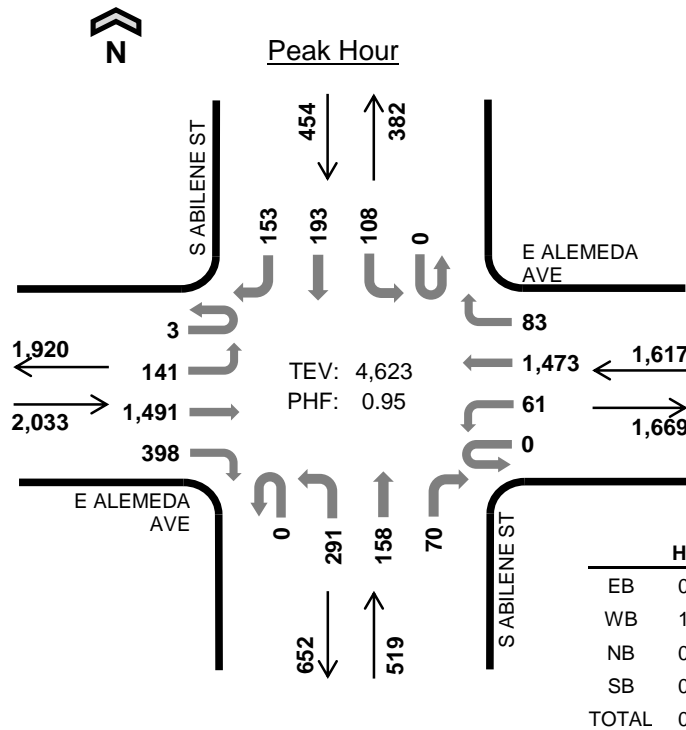
| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
|-------------------|---------------|----|-------|-----|---------------|----|-------|----|--------------|-----|-----|----|--------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:15 AM | 2 | 13 | 252 | 20 | 0 | 3 | 565 | 18 | 0 | 39 | 22 | 6 | 0 | 6 | 11 | 15 | 972 | 0 |
| 7:30 AM | 1 | 13 | 290 | 29 | 0 | 2 | 476 | 11 | 0 | 42 | 39 | 15 | 0 | 7 | 12 | 14 | 951 | 0 |
| 7:45 AM | 2 | 23 | 343 | 61 | 0 | 3 | 471 | 20 | 0 | 39 | 34 | 7 | 0 | 5 | 11 | 25 | 1,044 | 0 |
| 8:00 AM | 0 | 17 | 299 | 49 | 0 | 10 | 435 | 22 | 0 | 34 | 31 | 6 | 0 | 10 | 19 | 16 | 948 | 3,915 |
| Peak Hour | 5 | 66 | 1,184 | 159 | 0 | 18 | 1,947 | 71 | 0 | 154 | 126 | 34 | 0 | 28 | 53 | 70 | 3,915 | 0 |

Note: For all three-hour count summary, see next page.

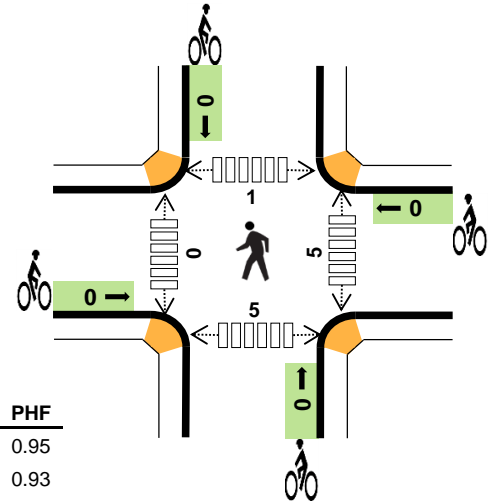
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:15 AM | 3 | 8 | 2 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 7:30 AM | 6 | 3 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 7:45 AM | 5 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 8:00 AM | 5 | 11 | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Peak Hour | 19 | 27 | 2 | 3 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|-------|-----|---------------|----------|-------|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 3 | 2 | 101 | 19 | 0 | 0 | 223 | 2 | 0 | 4 | 3 | 4 | 0 | 2 | 3 | 7 | 373 | 0 |
| 6:15 AM | 0 | 6 | 145 | 27 | 0 | 1 | 326 | 8 | 0 | 15 | 5 | 3 | 0 | 1 | 4 | 18 | 559 | 0 |
| 6:30 AM | 1 | 10 | 161 | 20 | 0 | 1 | 390 | 7 | 0 | 21 | 15 | 1 | 0 | 2 | 5 | 23 | 657 | 0 |
| 6:45 AM | 0 | 9 | 198 | 27 | 0 | 0 | 428 | 5 | 0 | 17 | 13 | 5 | 0 | 4 | 9 | 21 | 736 | 2,325 |
| 7:00 AM | 0 | 8 | 252 | 31 | 0 | 3 | 426 | 16 | 0 | 28 | 24 | 8 | 0 | 4 | 7 | 22 | 829 | 2,781 |
| 7:15 AM | 2 | 13 | 252 | 20 | 0 | 3 | 565 | 18 | 0 | 39 | 22 | 6 | 0 | 6 | 11 | 15 | 972 | 3,194 |
| 7:30 AM | 1 | 13 | 290 | 29 | 0 | 2 | 476 | 11 | 0 | 42 | 39 | 15 | 0 | 7 | 12 | 14 | 951 | 3,488 |
| 7:45 AM | 2 | 23 | 343 | 61 | 0 | 3 | 471 | 20 | 0 | 39 | 34 | 7 | 0 | 5 | 11 | 25 | 1,044 | 3,796 |
| 8:00 AM | 0 | 17 | 299 | 49 | 0 | 10 | 435 | 22 | 0 | 34 | 31 | 6 | 0 | 10 | 19 | 16 | 948 | 3,915 |
| 8:15 AM | 2 | 22 | 277 | 61 | 1 | 3 | 378 | 13 | 0 | 43 | 12 | 7 | 0 | 5 | 18 | 13 | 855 | 3,798 |
| 8:30 AM | 0 | 29 | 223 | 44 | 0 | 3 | 315 | 14 | 0 | 31 | 20 | 9 | 0 | 10 | 21 | 23 | 742 | 3,589 |
| 8:45 AM | 1 | 25 | 230 | 61 | 0 | 5 | 282 | 10 | 0 | 34 | 16 | 10 | 0 | 8 | 13 | 11 | 706 | 3,251 |
| Count Total | 12 | 177 | 2,771 | 449 | 1 | 34 | 4,715 | 146 | 0 | 347 | 234 | 81 | 0 | 64 | 133 | 208 | 9,372 | 0 |
| Peak Hour | 5 | 66 | 1,184 | 159 | 0 | 18 | 1,947 | 71 | 0 | 154 | 126 | 34 | 0 | 28 | 53 | 70 | 3,915 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 3 | 1 | 0 | 1 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 AM | 8 | 2 | 1 | 2 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 6:30 AM | 4 | 6 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 6 | 6 | 0 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 AM | 5 | 4 | 2 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| 7:15 AM | 3 | 8 | 2 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 7:30 AM | 6 | 3 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| 7:45 AM | 5 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 8:00 AM | 5 | 11 | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 8:15 AM | 3 | 5 | 4 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 2 | 9 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 4 | 4 | 4 |
| 8:45 AM | 6 | 4 | 0 | 2 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 | 4 |
| Count Total | 56 | 64 | 9 | 10 | 139 | 1 | 0 | 0 | 0 | 1 | 3 | 1 | 5 | 6 | 15 | 15 | 15 | 15 |
| Peak Hour | 19 | 27 | 2 | 3 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | 4 | 4 | 4 |

S ABILENE ST E ALEMEDA AVE



Date: Wed, Aug 28, 2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:45 PM to 5:45 PM



Three-Hour Count Summaries

| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
|-------------------|---------------|-----|-------|-----|---------------|----|-------|----|--------------|-----|-----|----|--------------|-----|-----|-----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:45 PM | 1 | 31 | 416 | 88 | 0 | 16 | 376 | 20 | 0 | 70 | 30 | 19 | 0 | 28 | 45 | 35 | 1,175 | 0 |
| 5:00 PM | 2 | 32 | 358 | 93 | 0 | 20 | 361 | 23 | 0 | 82 | 43 | 16 | 0 | 25 | 49 | 28 | 1,132 | 0 |
| 5:15 PM | 0 | 46 | 370 | 99 | 0 | 17 | 398 | 20 | 0 | 68 | 46 | 18 | 0 | 26 | 55 | 49 | 1,212 | 0 |
| 5:30 PM | 0 | 32 | 347 | 118 | 0 | 8 | 338 | 20 | 0 | 71 | 39 | 17 | 0 | 29 | 44 | 41 | 1,104 | 4,623 |
| Peak Hour | 3 | 141 | 1,491 | 398 | 0 | 61 | 1,473 | 83 | 0 | 291 | 158 | 70 | 0 | 108 | 193 | 153 | 4,623 | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 4:45 PM | 3 | 8 | 1 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 4 |
| 5:00 PM | 4 | 5 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 4 |
| 5:15 PM | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 5:30 PM | 1 | 5 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Peak Hour | 8 | 20 | 2 | 3 | 33 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 5 | 11 |

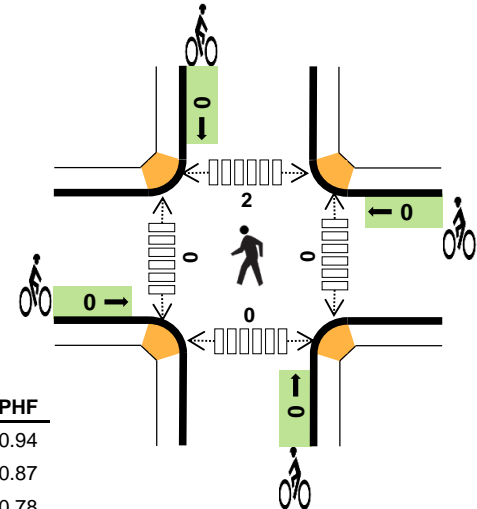
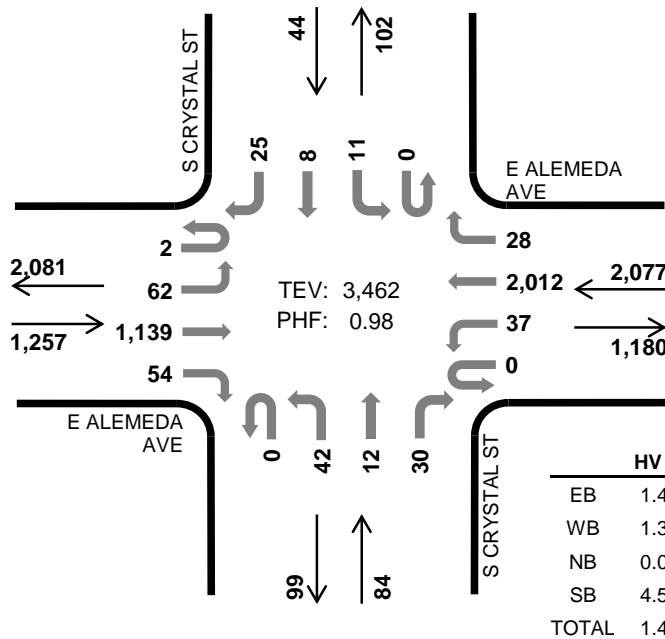
| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|-------|-------|---------------|----------|-------|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S ABILENE ST | | | | S ABILENE ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 28 | 385 | 87 | 0 | 10 | 341 | 12 | 0 | 63 | 37 | 21 | 0 | 30 | 44 | 44 | 1,102 | 0 |
| 4:15 PM | 0 | 40 | 371 | 75 | 0 | 14 | 302 | 18 | 0 | 84 | 44 | 14 | 0 | 34 | 45 | 32 | 1,073 | 0 |
| 4:30 PM | 0 | 41 | 333 | 106 | 0 | 18 | 342 | 18 | 0 | 76 | 40 | 14 | 0 | 38 | 44 | 29 | 1,099 | 0 |
| 4:45 PM | 1 | 31 | 416 | 88 | 0 | 16 | 376 | 20 | 0 | 70 | 30 | 19 | 0 | 28 | 45 | 35 | 1,175 | 4,449 |
| 5:00 PM | 2 | 32 | 358 | 93 | 0 | 20 | 361 | 23 | 0 | 82 | 43 | 16 | 0 | 25 | 49 | 28 | 1,132 | 4,479 |
| 5:15 PM | 0 | 46 | 370 | 99 | 0 | 17 | 398 | 20 | 0 | 68 | 46 | 18 | 0 | 26 | 55 | 49 | 1,212 | 4,618 |
| 5:30 PM | 0 | 32 | 347 | 118 | 0 | 8 | 338 | 20 | 0 | 71 | 39 | 17 | 0 | 29 | 44 | 41 | 1,104 | 4,623 |
| 5:45 PM | 2 | 36 | 315 | 101 | 0 | 8 | 286 | 15 | 0 | 84 | 54 | 11 | 0 | 19 | 38 | 33 | 1,002 | 4,450 |
| 6:00 PM | 1 | 42 | 305 | 82 | 0 | 11 | 299 | 17 | 0 | 82 | 54 | 18 | 0 | 14 | 44 | 34 | 1,003 | 4,321 |
| 6:15 PM | 1 | 35 | 343 | 88 | 0 | 14 | 294 | 14 | 1 | 72 | 39 | 19 | 0 | 19 | 26 | 46 | 1,011 | 4,120 |
| 6:30 PM | 1 | 48 | 281 | 102 | 0 | 7 | 280 | 14 | 0 | 75 | 45 | 14 | 0 | 19 | 36 | 40 | 962 | 3,978 |
| 6:45 PM | 1 | 33 | 315 | 113 | 0 | 17 | 290 | 19 | 0 | 78 | 43 | 15 | 0 | 19 | 29 | 42 | 1,014 | 3,990 |
| Count Total | 9 | 444 | 4,139 | 1,152 | 0 | 160 | 3,907 | 210 | 1 | 905 | 514 | 196 | 0 | 300 | 499 | 453 | 12,889 | 0 |
| Peak Hour | 3 | 141 | 1,491 | 398 | 0 | 61 | 1,473 | 83 | 0 | 291 | 158 | 70 | 0 | 108 | 193 | 153 | 4,623 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 2 | 5 | 1 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | | | |
| 4:15 PM | 2 | 8 | 1 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | | | |
| 4:30 PM | 2 | 4 | 0 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 2 | 12 | | | |
| 4:45 PM | 3 | 8 | 1 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 4 | | | |
| 5:00 PM | 4 | 5 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 4 | | | |
| 5:15 PM | 0 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| 5:30 PM | 1 | 5 | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | | | |
| 5:45 PM | 2 | 3 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | | | |
| 6:00 PM | 2 | 6 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | | | |
| 6:15 PM | 2 | 7 | 0 | 2 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 6 | | | |
| 6:30 PM | 2 | 6 | 0 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 4 | | | |
| 6:45 PM | 3 | 5 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 5 | | | |
| Count Total | 25 | 64 | 4 | 14 | 107 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 14 | 17 | 49 | | | |
| Peak Hour | 8 | 20 | 2 | 3 | 33 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 5 | 11 | | | |

S CRYSTAL ST E ALEMEDA AVE



Peak Hour

Date: Wed, Aug 28, 2019
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



Three-Hour Count Summaries

| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S CRYSTAL ST | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
|-------------------|---------------|----|-------|----|---------------|----|-------|----|--------------|----|----|----|--------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:15 AM | 0 | 8 | 242 | 14 | 0 | 15 | 576 | 5 | 0 | 10 | 3 | 3 | 0 | 2 | 3 | 5 | 886 | 0 |
| 7:30 AM | 0 | 20 | 293 | 11 | 0 | 8 | 485 | 5 | 0 | 9 | 2 | 6 | 0 | 2 | 1 | 4 | 846 | 0 |
| 7:45 AM | 1 | 15 | 306 | 13 | 0 | 7 | 465 | 8 | 0 | 12 | 5 | 7 | 0 | 3 | 2 | 5 | 849 | 0 |
| 8:00 AM | 1 | 19 | 298 | 16 | 0 | 7 | 486 | 10 | 0 | 11 | 2 | 14 | 0 | 4 | 2 | 11 | 881 | 3,462 |
| Peak Hour | 2 | 62 | 1,139 | 54 | 0 | 37 | 2,012 | 28 | 0 | 42 | 12 | 30 | 0 | 11 | 8 | 25 | 3,462 | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:15 AM | 4 | 9 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 7:30 AM | 4 | 2 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 5 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 5 | 11 | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Peak Hour | 18 | 27 | 0 | 2 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |

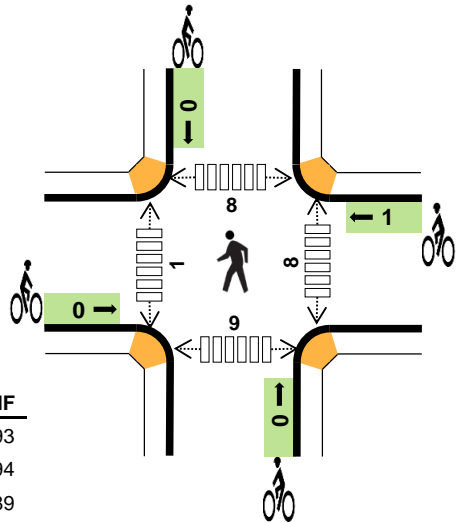
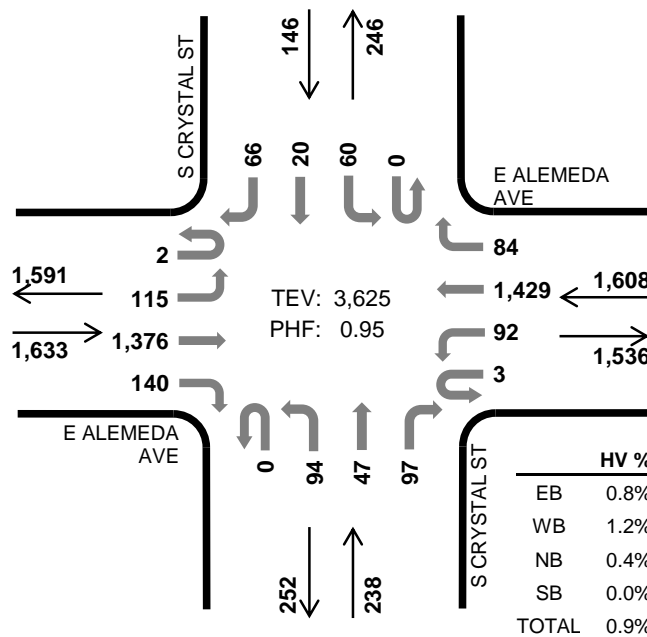
| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|-------|-----|---------------|----------|-------|----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S CRYSTAL ST | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 0 | 7 | 103 | 9 | 0 | 3 | 209 | 3 | 0 | 1 | 1 | 5 | 0 | 0 | 0 | 0 | 341 | 0 |
| 6:15 AM | 0 | 8 | 120 | 8 | 0 | 2 | 339 | 2 | 0 | 6 | 1 | 2 | 0 | 1 | 0 | 6 | 495 | 0 |
| 6:30 AM | 1 | 11 | 138 | 11 | 0 | 7 | 383 | 2 | 0 | 4 | 2 | 9 | 0 | 2 | 0 | 0 | 570 | 0 |
| 6:45 AM | 0 | 12 | 198 | 12 | 0 | 8 | 424 | 8 | 0 | 11 | 2 | 4 | 0 | 2 | 1 | 3 | 685 | 2,091 |
| 7:00 AM | 2 | 12 | 226 | 7 | 0 | 11 | 402 | 9 | 0 | 11 | 2 | 1 | 0 | 5 | 0 | 2 | 690 | 2,440 |
| 7:15 AM | 0 | 8 | 242 | 14 | 0 | 15 | 576 | 5 | 0 | 10 | 3 | 3 | 0 | 2 | 3 | 5 | 886 | 2,831 |
| 7:30 AM | 0 | 20 | 293 | 11 | 0 | 8 | 485 | 5 | 0 | 9 | 2 | 6 | 0 | 2 | 1 | 4 | 846 | 3,107 |
| 7:45 AM | 1 | 15 | 306 | 13 | 0 | 7 | 465 | 8 | 0 | 12 | 5 | 7 | 0 | 3 | 2 | 5 | 849 | 3,271 |
| 8:00 AM | 1 | 19 | 298 | 16 | 0 | 7 | 486 | 10 | 0 | 11 | 2 | 14 | 0 | 4 | 2 | 11 | 881 | 3,462 |
| 8:15 AM | 0 | 21 | 246 | 19 | 0 | 7 | 330 | 9 | 0 | 7 | 1 | 10 | 0 | 2 | 1 | 4 | 657 | 3,233 |
| 8:30 AM | 0 | 17 | 222 | 27 | 1 | 11 | 337 | 14 | 0 | 12 | 2 | 7 | 0 | 2 | 1 | 12 | 665 | 3,052 |
| 8:45 AM | 0 | 17 | 190 | 18 | 1 | 24 | 253 | 13 | 0 | 12 | 2 | 11 | 0 | 4 | 0 | 14 | 559 | 2,762 |
| Count Total | 5 | 167 | 2,582 | 165 | 2 | 110 | 4,689 | 88 | 0 | 106 | 25 | 79 | 0 | 29 | 11 | 66 | 8,124 | 0 |
| Peak Hour | 2 | 62 | 1,139 | 54 | 0 | 37 | 2,012 | 28 | 0 | 42 | 12 | 30 | 0 | 11 | 8 | 25 | 3,462 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 5 | 3 | 1 | 0 | 9 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | | | |
| 6:15 AM | 7 | 2 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 6:30 AM | 3 | 5 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 6:45 AM | 9 | 6 | 0 | 0 | 15 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | | | |
| 7:00 AM | 4 | 4 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | | | |
| 7:15 AM | 4 | 9 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 7:30 AM | 4 | 2 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 7:45 AM | 5 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 8:00 AM | 5 | 11 | 0 | 1 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 8:15 AM | 2 | 3 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 8:30 AM | 2 | 8 | 0 | 1 | 11 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | | | |
| 8:45 AM | 4 | 4 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | | | |
| Count Total | 54 | 62 | 1 | 4 | 121 | 2 | 0 | 0 | 0 | 2 | 3 | 0 | 4 | 7 | 14 | | | |
| Peak Hour | 18 | 27 | 0 | 2 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | | | |

S CRYSTAL ST E ALEMEDA AVE



Peak Hour

Date: Wed, Aug 28, 2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:30 PM to 5:30 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 0.8% | 0.93 |
| WB | 1.2% | 0.94 |
| NB | 0.4% | 0.89 |
| SB | 0.0% | 0.79 |
| TOTAL | 0.9% | 0.95 |

Three-Hour Count Summaries

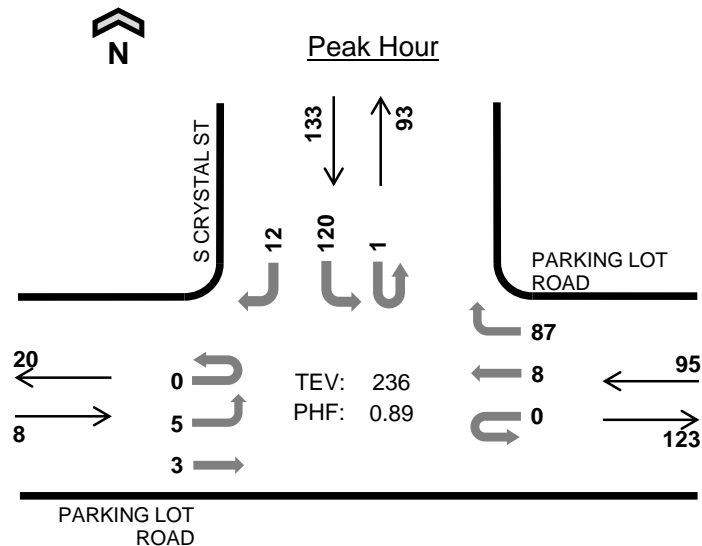
| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S CRYSTAL ST | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
|-------------------|---------------|-----|-------|-----|---------------|----|-------|----|--------------|----|----|----|--------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:30 PM | 1 | 31 | 322 | 26 | 0 | 22 | 328 | 17 | 0 | 28 | 15 | 24 | 0 | 14 | 4 | 13 | 845 | 0 |
| 4:45 PM | 0 | 29 | 368 | 44 | 1 | 27 | 357 | 18 | 0 | 24 | 7 | 23 | 0 | 17 | 5 | 10 | 930 | 0 |
| 5:00 PM | 1 | 25 | 321 | 33 | 0 | 27 | 360 | 23 | 0 | 20 | 11 | 32 | 0 | 15 | 6 | 25 | 899 | 0 |
| 5:15 PM | 0 | 30 | 365 | 37 | 2 | 16 | 384 | 26 | 0 | 22 | 14 | 18 | 0 | 14 | 5 | 18 | 951 | 3,625 |
| Peak Hour | 2 | 115 | 1,376 | 140 | 3 | 92 | 1,429 | 84 | 0 | 94 | 47 | 97 | 0 | 60 | 20 | 66 | 3,625 | 0 |

Note: For all three-hour count summary, see next page.

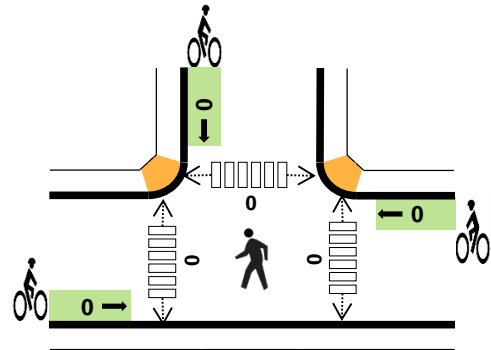
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 4:30 PM | 3 | 4 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 4 |
| 4:45 PM | 4 | 8 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 3 | 5 | 13 |
| 5:00 PM | 5 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 5 |
| 5:15 PM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 |
| Peak Hour | 13 | 19 | 1 | 0 | 33 | 0 | 1 | 0 | 0 | 1 | 8 | 1 | 8 | 9 | 26 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|-------|-----|---------------|----------|-------|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E ALEMEDA AVE | | | | E ALEMEDA AVE | | | | S CRYSTAL ST | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 16 | 345 | 41 | 0 | 29 | 297 | 20 | 0 | 24 | 14 | 29 | 0 | 18 | 8 | 20 | 861 | 0 |
| 4:15 PM | 0 | 31 | 351 | 39 | 0 | 18 | 308 | 27 | 0 | 16 | 6 | 25 | 0 | 22 | 8 | 14 | 865 | 0 |
| 4:30 PM | 1 | 31 | 322 | 26 | 0 | 22 | 328 | 17 | 0 | 28 | 15 | 24 | 0 | 14 | 4 | 13 | 845 | 0 |
| 4:45 PM | 0 | 29 | 368 | 44 | 1 | 27 | 357 | 18 | 0 | 24 | 7 | 23 | 0 | 17 | 5 | 10 | 930 | 3,501 |
| 5:00 PM | 1 | 25 | 321 | 33 | 0 | 27 | 360 | 23 | 0 | 20 | 11 | 32 | 0 | 15 | 6 | 25 | 899 | 3,539 |
| 5:15 PM | 0 | 30 | 365 | 37 | 2 | 16 | 384 | 26 | 0 | 22 | 14 | 18 | 0 | 14 | 5 | 18 | 951 | 3,625 |
| 5:30 PM | 0 | 18 | 291 | 38 | 1 | 24 | 304 | 21 | 0 | 30 | 7 | 27 | 0 | 16 | 6 | 10 | 793 | 3,573 |
| 5:45 PM | 0 | 23 | 294 | 29 | 0 | 24 | 261 | 19 | 0 | 19 | 10 | 32 | 0 | 20 | 6 | 22 | 759 | 3,402 |
| 6:00 PM | 0 | 26 | 250 | 35 | 0 | 29 | 275 | 19 | 0 | 29 | 6 | 25 | 0 | 18 | 6 | 15 | 733 | 3,236 |
| 6:15 PM | 0 | 31 | 304 | 35 | 0 | 34 | 273 | 20 | 0 | 22 | 5 | 19 | 0 | 12 | 3 | 12 | 770 | 3,055 |
| 6:30 PM | 0 | 34 | 285 | 29 | 0 | 30 | 270 | 22 | 0 | 37 | 8 | 24 | 0 | 13 | 4 | 17 | 773 | 3,035 |
| 6:45 PM | 1 | 25 | 250 | 51 | 0 | 25 | 250 | 9 | 0 | 35 | 13 | 31 | 0 | 13 | 6 | 17 | 726 | 3,002 |
| Count Total | 3 | 319 | 3,746 | 437 | 4 | 305 | 3,667 | 241 | 0 | 306 | 116 | 309 | 0 | 192 | 67 | 193 | 9,905 | 0 |
| Peak Hour | 2 | 115 | 1,376 | 140 | 3 | 92 | 1,429 | 84 | 0 | 94 | 47 | 97 | 0 | 60 | 20 | 66 | 3,625 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 5 | 4 | 0 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 1 | 5 | | | |
| 4:15 PM | 1 | 8 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | | | |
| 4:30 PM | 3 | 4 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 4 | | | |
| 4:45 PM | 4 | 8 | 0 | 0 | 12 | 0 | 1 | 0 | 0 | 1 | 4 | 1 | 3 | 5 | 13 | | | |
| 5:00 PM | 5 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 5 | | | |
| 5:15 PM | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | | | |
| 5:30 PM | 1 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | | | |
| 5:45 PM | 3 | 3 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 3 | | | |
| 6:00 PM | 1 | 6 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | | | |
| 6:15 PM | 3 | 7 | 0 | 0 | 10 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | | | |
| 6:30 PM | 6 | 7 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 4 | | | |
| 6:45 PM | 4 | 4 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Count Total | 37 | 62 | 1 | 1 | 101 | 1 | 1 | 0 | 0 | 2 | 16 | 6 | 14 | 13 | 49 | | | |
| Peak Hour | 13 | 19 | 1 | 0 | 33 | 0 | 1 | 0 | 0 | 1 | 8 | 1 | 8 | 9 | 26 | | | |

S CRYSTAL ST PARKING LOT ROAD



Date: Wed, Aug 28, 2019
Count Period: 6:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



| | HV %: | PHF |
|-------|-------|------|
| EB | 0.0% | 0.67 |
| WB | 0.0% | 0.82 |
| NB | - | - |
| SB | 0.8% | 0.81 |
| TOTAL | 0.4% | 0.89 |

Three-Hour Count Summaries

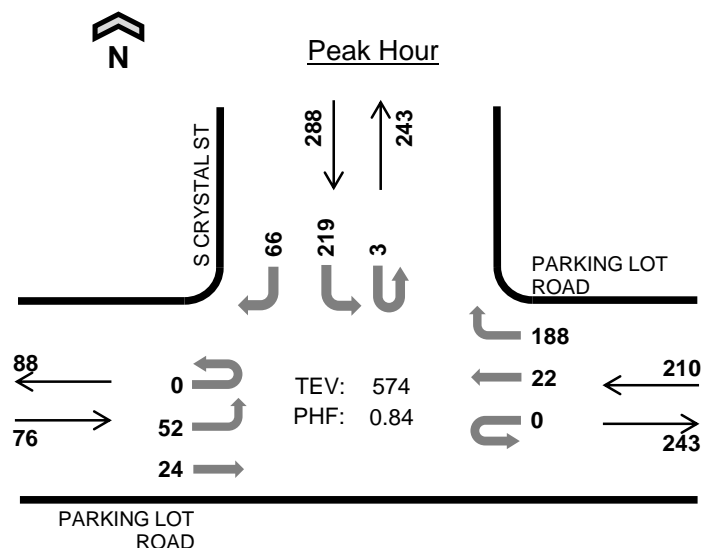
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|----|----|----|------------|----|----|----|--------------|-----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 8:00 AM | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 27 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 2 | 58 | 0 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 2 | 46 | 0 |
| 8:30 AM | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 21 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 4 | 66 | 0 |
| 8:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 23 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 4 | 66 | 236 |
| Peak Hour | 0 | 5 | 3 | 0 | 0 | 0 | 8 | 87 | 0 | 0 | 0 | 0 | 1 | 120 | 0 | 12 | 236 | 0 |

Note: For all three-hour count summary, see next page.

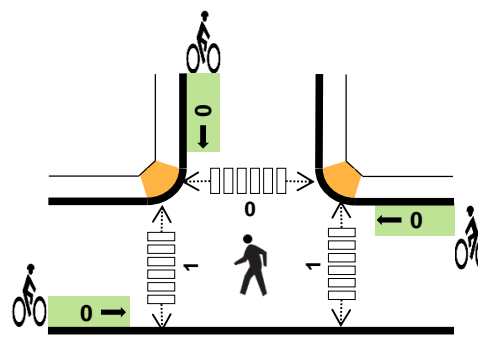
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|------------------|----------|----|-----|------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 AM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 2 | 18 | 0 |
| 6:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 20 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 35 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 1 | 19 | 0 | 2 | 37 | 110 |
| 7:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 3 | 33 | 125 |
| 7:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 2 | 51 | 156 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 38 | 159 |
| 7:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 3 | 19 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 2 | 46 | 168 |
| 8:00 AM | 0 | 2 | 1 | 0 | 0 | 0 | 2 | 27 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 2 | 58 | 193 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 2 | 46 | 188 |
| 8:30 AM | 0 | 2 | 1 | 0 | 0 | 0 | 3 | 21 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 4 | 66 | 216 |
| 8:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 23 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 4 | 66 | 236 |
| Count Total | 0 | 9 | 6 | 0 | 0 | 0 | 13 | 200 | 0 | 0 | 0 | 0 | 3 | 260 | 0 | 23 | 514 | 0 |
| Peak Hour | 0 | 5 | 3 | 0 | 0 | 0 | 8 | 87 | 0 | 0 | 0 | 0 | 1 | 120 | 0 | 12 | 236 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 6:00 AM | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:00 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 1 | 0 | 0 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Peak Hr | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

S CRYSTAL ST PARKING LOT ROAD



Date: Wed, Aug 28, 2019
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 6:00 PM to 7:00 PM



| | HV %: | PHF |
|-------|-------|------|
| EB | 0.0% | 0.73 |
| WB | 0.0% | 0.88 |
| NB | - | - |
| SB | 0.0% | 0.86 |
| TOTAL | 0.0% | 0.84 |

Three-Hour Count Summaries

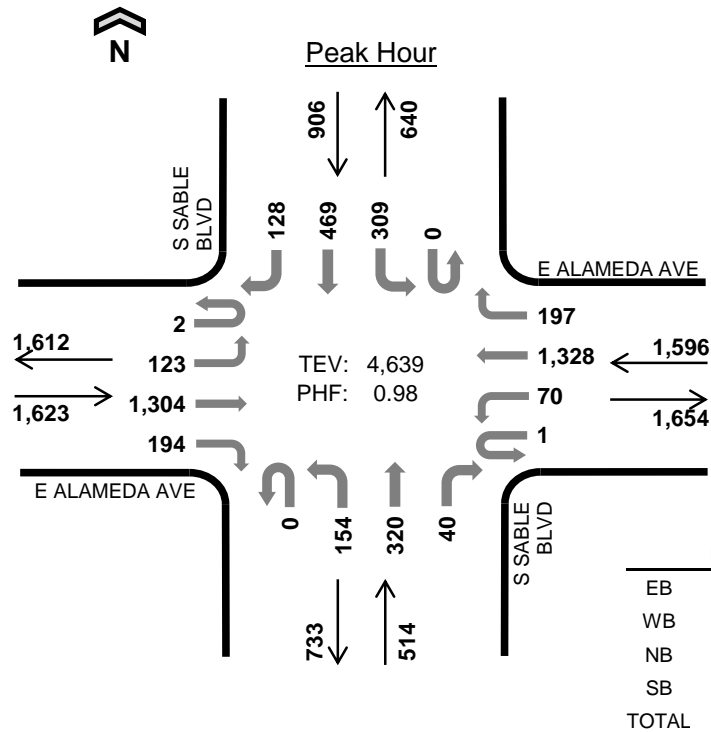
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|----|----|-----|------------|----|----|----|--------------|-----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 6:00 PM | 0 | 8 | 8 | 0 | 0 | 0 | 8 | 45 | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 14 | 141 | 0 |
| 6:15 PM | 0 | 8 | 7 | 0 | 0 | 0 | 5 | 40 | 0 | 0 | 0 | 0 | 1 | 50 | 0 | 18 | 129 | 0 |
| 6:30 PM | 0 | 16 | 3 | 0 | 0 | 0 | 6 | 46 | 0 | 0 | 0 | 0 | 1 | 43 | 0 | 19 | 134 | 0 |
| 6:45 PM | 0 | 20 | 6 | 0 | 0 | 0 | 3 | 57 | 0 | 0 | 0 | 0 | 1 | 68 | 0 | 15 | 170 | 574 |
| Peak Hour | 0 | 52 | 24 | 0 | 0 | 0 | 22 | 188 | 0 | 0 | 0 | 0 | 3 | 219 | 0 | 66 | 574 | 0 |

Note: For all three-hour count summary, see next page.

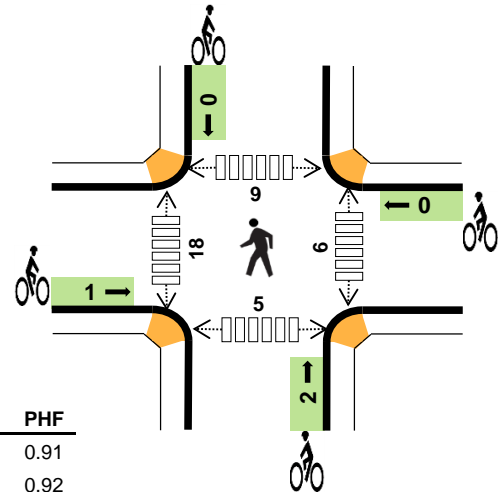
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|----|----|------------------|----------|----|-----|------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | PARKING LOT ROAD | | | | PARKING LOT ROAD | | | | 0 | | | | S CRYSTAL ST | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 9 | 12 | 0 | 0 | 0 | 9 | 57 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 21 | 164 | 0 |
| 4:15 PM | 0 | 12 | 7 | 0 | 0 | 0 | 8 | 42 | 0 | 0 | 0 | 0 | 0 | 47 | 0 | 17 | 133 | 0 |
| 4:30 PM | 0 | 11 | 6 | 0 | 0 | 0 | 9 | 51 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 14 | 127 | 0 |
| 4:45 PM | 0 | 8 | 7 | 0 | 0 | 0 | 8 | 47 | 0 | 0 | 0 | 0 | 0 | 61 | 0 | 15 | 146 | 570 |
| 5:00 PM | 0 | 19 | 9 | 0 | 0 | 0 | 3 | 43 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 19 | 140 | 546 |
| 5:15 PM | 0 | 10 | 5 | 0 | 0 | 0 | 5 | 50 | 0 | 0 | 0 | 0 | 0 | 47 | 0 | 11 | 128 | 541 |
| 5:30 PM | 0 | 20 | 8 | 0 | 1 | 0 | 5 | 38 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 17 | 142 | 556 |
| 5:45 PM | 0 | 22 | 4 | 0 | 0 | 0 | 9 | 45 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 11 | 137 | 547 |
| 6:00 PM | 0 | 8 | 8 | 0 | 0 | 0 | 8 | 45 | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 14 | 141 | 548 |
| 6:15 PM | 0 | 8 | 7 | 0 | 0 | 0 | 5 | 40 | 0 | 0 | 0 | 0 | 1 | 50 | 0 | 18 | 129 | 549 |
| 6:30 PM | 0 | 16 | 3 | 0 | 0 | 0 | 6 | 46 | 0 | 0 | 0 | 0 | 1 | 43 | 0 | 19 | 134 | 541 |
| 6:45 PM | 0 | 20 | 6 | 0 | 0 | 0 | 3 | 57 | 0 | 0 | 0 | 0 | 1 | 68 | 0 | 15 | 170 | 574 |
| Count Total | 0 | 163 | 82 | 0 | 1 | 0 | 78 | 561 | 0 | 0 | 0 | 0 | 4 | 611 | 0 | 191 | 1,691 | 0 |
| Peak Hour | 0 | 52 | 24 | 0 | 0 | 0 | 22 | 188 | 0 | 0 | 0 | 0 | 3 | 219 | 0 | 66 | 574 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | | | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 4 | | | |
| 4:30 PM | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | | | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | | | |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 6:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | | | |
| Count Total | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 1 | 1 | 11 | | | |
| Peak Hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | | | |

S SABLE BLVD E ALAMEDA AVE



Date: Thu, Jan 16, 2020
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:15 PM to 5:15 PM



Three-Hour Count Summaries

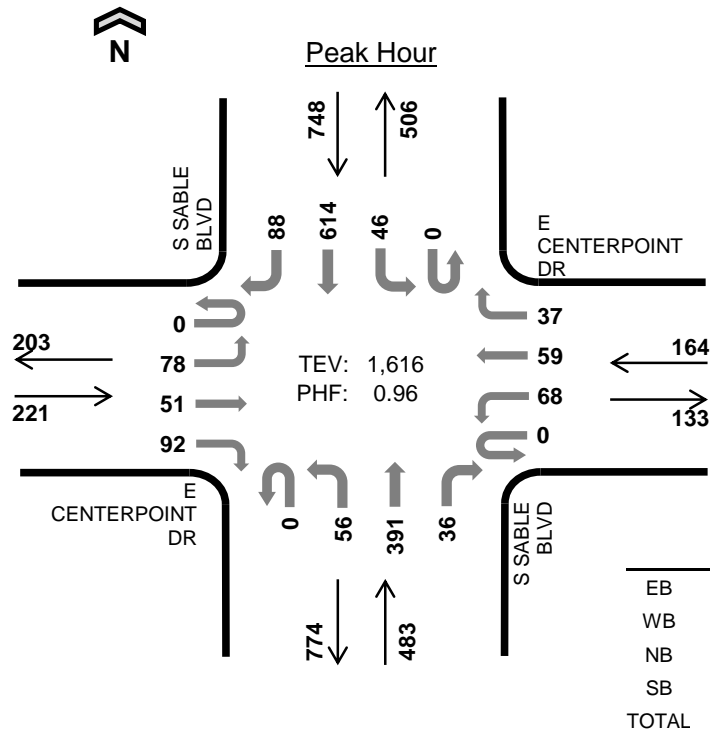
| Interval Start | E ALAMEDA AVE | | | | E ALAMEDA AVE | | | | S SABLE BLVD | | | | S SABLE BLVD | | | | 15-min Total | Rolling One Hour |
|-------------------|---------------|-----|-------|-----|---------------|----|-------|-----|--------------|-----|-----|----|--------------|-----|-----|-----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:15 PM | 0 | 40 | 344 | 36 | 0 | 17 | 295 | 47 | 0 | 38 | 83 | 11 | 0 | 80 | 116 | 30 | 1,137 | 0 |
| 4:30 PM | 0 | 26 | 290 | 57 | 1 | 18 | 355 | 47 | 0 | 39 | 74 | 8 | 0 | 82 | 126 | 34 | 1,157 | 0 |
| 4:45 PM | 0 | 31 | 357 | 58 | 0 | 14 | 318 | 49 | 0 | 34 | 73 | 11 | 0 | 89 | 119 | 36 | 1,189 | 0 |
| 5:00 PM | 2 | 26 | 313 | 43 | 0 | 21 | 360 | 54 | 0 | 43 | 90 | 10 | 0 | 58 | 108 | 28 | 1,156 | 4,639 |
| Peak Hour | 2 | 123 | 1,304 | 194 | 1 | 70 | 1,328 | 197 | 0 | 154 | 320 | 40 | 0 | 309 | 469 | 128 | 4,639 | 0 |

Note: For all three-hour count summary, see next page.

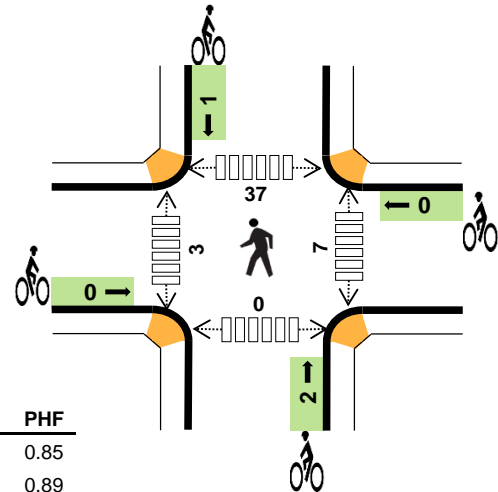
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 4:15 PM | 3 | 4 | 6 | 6 | 19 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 4 | 0 | 11 |
| 4:30 PM | 4 | 2 | 3 | 2 | 11 | 1 | 0 | 0 | 0 | 1 | 2 | 5 | 1 | 3 | 11 |
| 4:45 PM | 2 | 2 | 1 | 1 | 6 | 0 | 0 | 1 | 0 | 1 | 2 | 4 | 1 | 1 | 8 |
| 5:00 PM | 3 | 1 | 4 | 0 | 8 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 3 | 1 | 8 |
| Peak Hour | 12 | 9 | 14 | 9 | 44 | 1 | 0 | 2 | 0 | 3 | 6 | 18 | 9 | 5 | 38 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|-------|-----|---------------|----------|-------|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E ALAMEDA AVE | | | | E ALAMEDA AVE | | | | S SABLE BLVD | | | | S SABLE BLVD | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 46 | 286 | 43 | 0 | 21 | 333 | 47 | 0 | 39 | 88 | 5 | 0 | 67 | 130 | 27 | 1,132 | 0 |
| 4:15 PM | 0 | 40 | 344 | 36 | 0 | 17 | 295 | 47 | 0 | 38 | 83 | 11 | 0 | 80 | 116 | 30 | 1,137 | 0 |
| 4:30 PM | 0 | 26 | 290 | 57 | 1 | 18 | 355 | 47 | 0 | 39 | 74 | 8 | 0 | 82 | 126 | 34 | 1,157 | 0 |
| 4:45 PM | 0 | 31 | 357 | 58 | 0 | 14 | 318 | 49 | 0 | 34 | 73 | 11 | 0 | 89 | 119 | 36 | 1,189 | 4,615 |
| 5:00 PM | 2 | 26 | 313 | 43 | 0 | 21 | 360 | 54 | 0 | 43 | 90 | 10 | 0 | 58 | 108 | 28 | 1,156 | 4,639 |
| 5:15 PM | 0 | 29 | 327 | 39 | 0 | 16 | 328 | 40 | 0 | 29 | 85 | 10 | 0 | 72 | 121 | 33 | 1,129 | 4,631 |
| 5:30 PM | 0 | 32 | 327 | 51 | 0 | 15 | 276 | 32 | 0 | 39 | 80 | 11 | 0 | 70 | 123 | 26 | 1,082 | 4,556 |
| 5:45 PM | 1 | 43 | 287 | 45 | 0 | 19 | 217 | 32 | 0 | 34 | 76 | 7 | 0 | 72 | 91 | 38 | 962 | 4,329 |
| 6:00 PM | 1 | 32 | 295 | 48 | 0 | 26 | 257 | 37 | 0 | 28 | 73 | 15 | 0 | 56 | 100 | 25 | 993 | 4,166 |
| 6:15 PM | 1 | 23 | 193 | 28 | 0 | 19 | 216 | 20 | 0 | 32 | 63 | 14 | 0 | 42 | 65 | 31 | 747 | 3,784 |
| 6:30 PM | 3 | 23 | 193 | 36 | 0 | 17 | 198 | 37 | 0 | 30 | 55 | 9 | 0 | 39 | 82 | 24 | 746 | 3,448 |
| 6:45 PM | 0 | 25 | 199 | 29 | 0 | 19 | 177 | 26 | 0 | 31 | 52 | 11 | 0 | 31 | 80 | 24 | 704 | 3,190 |
| Count Total | 8 | 376 | 3,411 | 513 | 1 | 222 | 3,330 | 468 | 0 | 416 | 892 | 122 | 0 | 758 | 1,261 | 356 | 12,134 | 0 |
| Peak Hour | 2 | 123 | 1,304 | 194 | 1 | 70 | 1,328 | 197 | 0 | 154 | 320 | 40 | 0 | 309 | 469 | 128 | 4,639 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 3 | 7 | 2 | 2 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 1 | 6 | | | |
| 4:15 PM | 3 | 4 | 6 | 6 | 19 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | 4 | 0 | 11 | | | |
| 4:30 PM | 4 | 2 | 3 | 2 | 11 | 1 | 0 | 0 | 0 | 1 | 2 | 5 | 1 | 3 | 11 | | | |
| 4:45 PM | 2 | 2 | 1 | 1 | 6 | 0 | 0 | 1 | 0 | 1 | 2 | 4 | 1 | 1 | 8 | | | |
| 5:00 PM | 3 | 1 | 4 | 0 | 8 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 3 | 1 | 8 | | | |
| 5:15 PM | 0 | 2 | 4 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | | | |
| 5:30 PM | 7 | 0 | 1 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 1 | 5 | | | |
| 5:45 PM | 3 | 2 | 4 | 2 | 11 | 0 | 0 | 1 | 0 | 1 | 2 | 2 | 2 | 2 | 8 | | | |
| 6:00 PM | 2 | 1 | 6 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 5 | | | |
| 6:15 PM | 5 | 2 | 4 | 1 | 12 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 5 | | | |
| 6:30 PM | 2 | 2 | 5 | 2 | 11 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 1 | 0 | 5 | | | |
| 6:45 PM | 4 | 0 | 4 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | | | |
| Count Total | 38 | 25 | 44 | 21 | 128 | 1 | 0 | 4 | 0 | 5 | 14 | 36 | 15 | 11 | 76 | | | |
| Peak Hour | 12 | 9 | 14 | 9 | 44 | 1 | 0 | 2 | 0 | 3 | 6 | 18 | 9 | 5 | 38 | | | |

S SABLE BLVD E CENTERPOINT DR



Date: Thu, Jan 16, 2020
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 4:30 PM to 5:30 PM



Three-Hour Count Summaries

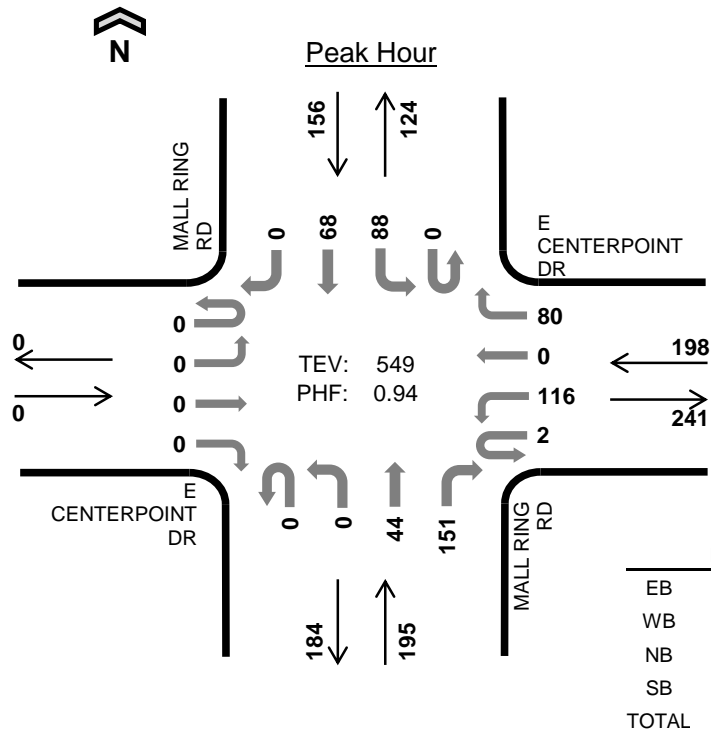
| Interval Start | E CENTERPOINT DR | | | | E CENTERPOINT DR | | | | S SABLE BLVD | | | | S SABLE BLVD | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|----|----|----|--------------|----|-----|----|--------------|----|-----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:30 PM | 0 | 16 | 13 | 18 | 0 | 15 | 12 | 7 | 0 | 14 | 90 | 10 | 0 | 12 | 164 | 15 | 386 | 0 |
| 4:45 PM | 0 | 21 | 9 | 20 | 0 | 18 | 19 | 9 | 0 | 9 | 90 | 9 | 0 | 12 | 163 | 24 | 403 | 0 |
| 5:00 PM | 0 | 25 | 10 | 24 | 0 | 20 | 14 | 12 | 0 | 16 | 115 | 5 | 0 | 13 | 140 | 29 | 423 | 0 |
| 5:15 PM | 0 | 16 | 19 | 30 | 0 | 15 | 14 | 9 | 0 | 17 | 96 | 12 | 0 | 9 | 147 | 20 | 404 | 1,616 |
| Peak Hour | 0 | 78 | 51 | 92 | 0 | 68 | 59 | 37 | 0 | 56 | 391 | 36 | 0 | 46 | 614 | 88 | 1,616 | 0 |

Note: For all three-hour count summary, see next page.

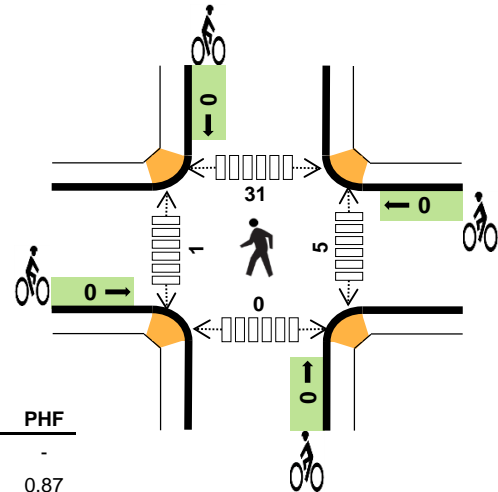
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 4:30 PM | 0 | 5 | 4 | 4 | 13 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 6 | 0 | 9 |
| 4:45 PM | 0 | 4 | 4 | 2 | 10 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 11 | 0 | 15 |
| 5:00 PM | 0 | 7 | 2 | 4 | 13 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 8 | 0 | 9 |
| 5:15 PM | 0 | 4 | 4 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 12 | 0 | 14 |
| Peak Hour | 0 | 20 | 14 | 11 | 45 | 0 | 0 | 2 | 1 | 3 | 7 | 3 | 37 | 0 | 47 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----|-----|-----|------------------|----------|-----|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E CENTERPOINT DR | | | | E CENTERPOINT DR | | | | S SABLE BLVD | | | | S SABLE BLVD | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 18 | 12 | 23 | 0 | 15 | 14 | 12 | 0 | 21 | 96 | 11 | 0 | 11 | 153 | 22 | 408 | 0 |
| 4:15 PM | 0 | 21 | 20 | 17 | 0 | 12 | 15 | 9 | 0 | 11 | 107 | 5 | 0 | 6 | 138 | 20 | 381 | 0 |
| 4:30 PM | 0 | 16 | 13 | 18 | 0 | 15 | 12 | 7 | 0 | 14 | 90 | 10 | 0 | 12 | 164 | 15 | 386 | 0 |
| 4:45 PM | 0 | 21 | 9 | 20 | 0 | 18 | 19 | 9 | 0 | 9 | 90 | 9 | 0 | 12 | 163 | 24 | 403 | 1,578 |
| 5:00 PM | 0 | 25 | 10 | 24 | 0 | 20 | 14 | 12 | 0 | 16 | 115 | 5 | 0 | 13 | 140 | 29 | 423 | 1,593 |
| 5:15 PM | 0 | 16 | 19 | 30 | 0 | 15 | 14 | 9 | 0 | 17 | 96 | 12 | 0 | 9 | 147 | 20 | 404 | 1,616 |
| 5:30 PM | 0 | 15 | 13 | 28 | 0 | 9 | 8 | 9 | 0 | 8 | 97 | 3 | 0 | 14 | 156 | 22 | 382 | 1,612 |
| 5:45 PM | 0 | 21 | 11 | 25 | 0 | 7 | 15 | 11 | 0 | 12 | 95 | 12 | 0 | 13 | 99 | 24 | 345 | 1,554 |
| 6:00 PM | 0 | 22 | 10 | 25 | 0 | 15 | 9 | 11 | 0 | 13 | 82 | 12 | 0 | 16 | 152 | 22 | 389 | 1,520 |
| 6:15 PM | 0 | 19 | 7 | 22 | 0 | 7 | 10 | 7 | 0 | 19 | 81 | 4 | 0 | 6 | 82 | 25 | 289 | 1,405 |
| 6:30 PM | 0 | 17 | 13 | 20 | 0 | 6 | 10 | 10 | 0 | 20 | 73 | 7 | 0 | 8 | 111 | 17 | 312 | 1,335 |
| 6:45 PM | 0 | 18 | 4 | 17 | 0 | 5 | 9 | 4 | 0 | 12 | 65 | 4 | 0 | 8 | 94 | 28 | 268 | 1,258 |
| Count Total | 0 | 229 | 141 | 269 | 0 | 144 | 149 | 110 | 0 | 172 | 1,087 | 94 | 0 | 128 | 1,599 | 268 | 4,390 | 0 |
| Peak Hour | 0 | 78 | 51 | 92 | 0 | 68 | 59 | 37 | 0 | 56 | 391 | 36 | 0 | 46 | 614 | 88 | 1,616 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 1 | 5 | 2 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 19 | 0 | 23 | | | |
| 4:15 PM | 0 | 7 | 3 | 6 | 16 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 20 | 2 | 27 | | | |
| 4:30 PM | 0 | 5 | 4 | 4 | 13 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 6 | 0 | 9 | | | |
| 4:45 PM | 0 | 4 | 4 | 2 | 10 | 0 | 0 | 1 | 0 | 1 | 3 | 1 | 11 | 0 | 15 | | | |
| 5:00 PM | 0 | 7 | 2 | 4 | 13 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 8 | 0 | 9 | | | |
| 5:15 PM | 0 | 4 | 4 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 12 | 0 | 14 | | | |
| 5:30 PM | 0 | 3 | 1 | 5 | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 1 | 11 | 3 | 24 | | | |
| 5:45 PM | 0 | 7 | 6 | 2 | 15 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 14 | 1 | 17 | | | |
| 6:00 PM | 1 | 8 | 2 | 3 | 14 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 7 | 1 | 12 | | | |
| 6:15 PM | 0 | 5 | 3 | 3 | 11 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 9 | 0 | 16 | | | |
| 6:30 PM | 0 | 7 | 3 | 4 | 14 | 0 | 0 | 1 | 0 | 1 | 1 | 3 | 9 | 0 | 13 | | | |
| 6:45 PM | 0 | 4 | 2 | 4 | 10 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 7 | 0 | 11 | | | |
| Count Total | 2 | 66 | 36 | 40 | 144 | 0 | 0 | 4 | 1 | 5 | 38 | 12 | 133 | 7 | 190 | | | |
| Peak Hour | 0 | 20 | 14 | 11 | 45 | 0 | 0 | 2 | 1 | 3 | 7 | 3 | 37 | 0 | 47 | | | |

MALL RING RD E CENTERPOINT DR



Date: Thu, Jan 16, 2020
Count Period: 4:00 PM to 7:00 PM
Peak Hour: 5:00 PM to 6:00 PM



Three-Hour Count Summaries

| Interval Start | E CENTERPOINT DR | | | | E CENTERPOINT DR | | | | MALL RING RD | | | | MALL RING RD | | | | 15-min Total | Rolling One Hour |
|-------------------|------------------|----|----|----|------------------|-----|----|----|--------------|----|----|-----|--------------|----|----|----|-----------------|---------------------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 5:00 PM | 0 | 0 | 0 | 0 | 2 | 27 | 0 | 28 | 0 | 0 | 9 | 38 | 0 | 24 | 18 | 0 | 146 | 0 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 21 | 0 | 0 | 8 | 35 | 0 | 30 | 15 | 0 | 142 | 0 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 15 | 0 | 0 | 16 | 40 | 0 | 16 | 14 | 0 | 123 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 16 | 0 | 0 | 11 | 38 | 0 | 18 | 21 | 0 | 138 | 549 |
| Peak Hour | 0 | 0 | 0 | 0 | 2 | 116 | 0 | 80 | 0 | 0 | 44 | 151 | 0 | 88 | 68 | 0 | 549 | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 4 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 12 | 0 | 16 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 31 | 0 | 37 |

| Three-Hour Count Summaries | | | | | | | | | | | | | | | | | | |
|--|----------------------|----|----|----|------------------|----------|----|-----|--------------|-------|----------------------------|------|--------------|-------|-------|-------|-----------------|---------------------|
| Interval Start | E CENTERPOINT DR | | | | E CENTERPOINT DR | | | | MALL RING RD | | | | MALL RING RD | | | | 15-min Total | Rolling One Hour |
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 22 | 0 | 0 | 12 | 38 | 0 | 14 | 15 | 0 | 135 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 20 | 0 | 0 | 13 | 40 | 0 | 20 | 20 | 0 | 140 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 1 | 26 | 0 | 13 | 0 | 0 | 12 | 24 | 0 | 19 | 14 | 0 | 109 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 21 | 0 | 0 | 8 | 31 | 0 | 19 | 16 | 0 | 128 | 512 |
| 5:00 PM | 0 | 0 | 0 | 0 | 2 | 27 | 0 | 28 | 0 | 0 | 9 | 38 | 0 | 24 | 18 | 0 | 146 | 523 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 21 | 0 | 0 | 8 | 35 | 0 | 30 | 15 | 0 | 142 | 525 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 15 | 0 | 0 | 16 | 40 | 0 | 16 | 14 | 0 | 123 | 539 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 16 | 0 | 0 | 11 | 38 | 0 | 18 | 21 | 0 | 138 | 549 |
| 6:00 PM | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 18 | 0 | 0 | 10 | 40 | 0 | 20 | 13 | 0 | 130 | 533 |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 18 | 0 | 0 | 17 | 42 | 0 | 14 | 7 | 0 | 133 | 524 |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 17 | 0 | 0 | 10 | 29 | 0 | 11 | 13 | 0 | 109 | 510 |
| 6:45 PM | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 13 | 0 | 0 | 12 | 24 | 0 | 13 | 27 | 0 | 125 | 497 |
| Count Total | 0 | 0 | 0 | 0 | 3 | 365 | 0 | 222 | 0 | 0 | 138 | 419 | 0 | 218 | 193 | 0 | 1,558 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 2 | 116 | 0 | 80 | 0 | 0 | 44 | 151 | 0 | 88 | 68 | 0 | 549 | 0 |
| Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count. | | | | | | | | | | | | | | | | | | |
| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | | Total | | |
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total | | | |
| 4:00 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 11 | 0 | 15 | | | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 16 | 0 | 18 | | | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 8 | | | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 11 | | | |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 4 | | | |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | | | |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 12 | 0 | 16 | | | |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | | | |
| 6:00 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 7 | | | |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 1 | 7 | | | |
| 6:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 7 | | | |
| 6:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 7 | | | |
| Count Total | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 20 | 4 | 92 | 1 | 117 | | | |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 31 | 0 | 37 | | | |

APPENDIX B

Aurora Fast Food Restaurant Study Documents

Aurora Drive-Thru Fast Food

Traffic Impact Study

Aurora, Colorado

September 20, 2019

Revised: November 7, 2019

Prepared by:

Wells + Associates

Brian J. Horan, P.E.
Robert M. Browning
Heidi R. Thorne



bjhoran@wellsandassociates.com

303.222.0077

www.WellsAndAssociates.com



[@WellsAssoc](https://twitter.com/WellsAssoc)



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[Wells + Associates](https://www.linkedin.com/company/Wells+Associates)





Figure 6-1
Total Future Traffic Volumes (2021)



Aurora Drive-Thru Fast Food
City of Aurora, Colorado



Figure 6-2
Total Future Traffic Volumes (2040)



Aurora Drive-Thru Fast Food
City of Aurora, Colorado

APPENDIX C

Trip Generation Worksheets

Project Aurora Fieldhouse
 Subject Trip Generation - Recreational Community Center
 Designed by KLT Date January 27, 2020 Job No. 96914002.00
 Checked by _____ Date _____ Sheet No. 1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 10th Edition, Average Rate Equations

Land Use Code - Recreational Community Center (495)

Independant Variable - 1000 Square Feet Gross Leasable Area (X)

Gross Leasable Area = 91,160 Square Feet

X = 91.160

T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (400 Series Page 309)

| | |
|---------------------|--|
| (T) = 2.31 (X) | Directional Distribution: 57% ent. 43% exit. |
| (T) = 2.31 * (91.2) | T = 211 Average Vehicle Trip Ends |
| | 120 entering 91 exiting |
| | 120 + 91 = 211 |

Weekday (Page 307 of 10th Edition)

| | |
|----------------------|--|
| Daily Weekday | Directional Distribution: 50% ent. 50% exit. |
| (T) = 28.82(X) | T = 2627 Average Vehicle Trip Ends |
| (T) = 28.82 * (91.2) | 1314 entering 1314 exiting |
| | 1314 + 1313 = 2627 |

APPENDIX D

























Intersection Analysis Worksheets

Timings

2: Abilene Street & Alameda Avenue

2020 Existing PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| Future Volume (vph) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 16.0 | 62.0 | 62.0 | 11.0 | 57.0 | 57.0 | 29.0 | 38.0 | 38.0 | 21.0 | 30.0 | 30.0 |
| Total Split (%) | 12.1% | 47.0% | 47.0% | 8.3% | 43.2% | 43.2% | 22.0% | 28.8% | 28.8% | 15.9% | 22.7% | 22.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 10.4 | 59.7 | 59.7 | 6.4 | 53.6 | 53.6 | 19.0 | 36.3 | 36.3 | 13.7 | 31.0 | 31.0 |
| Actuated g/C Ratio | 0.08 | 0.45 | 0.45 | 0.05 | 0.41 | 0.41 | 0.14 | 0.28 | 0.28 | 0.10 | 0.23 | 0.23 |
| v/c Ratio | 0.56 | 0.70 | 0.46 | 0.41 | 0.78 | 0.12 | 0.73 | 0.39 | 0.17 | 0.67 | 0.28 | 0.36 |
| Control Delay | 66.7 | 31.4 | 5.2 | 84.1 | 20.6 | 0.6 | 62.6 | 42.4 | 2.8 | 74.7 | 43.3 | 10.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.7 | 31.4 | 5.2 | 84.1 | 20.6 | 0.6 | 62.6 | 42.4 | 2.8 | 74.7 | 43.3 | 10.5 |
| LOS | E | C | A | F | C | A | E | D | A | E | D | B |
| Approach Delay | | 28.7 | | | 22.0 | | | 48.3 | | | 39.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 52.5 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 30.0

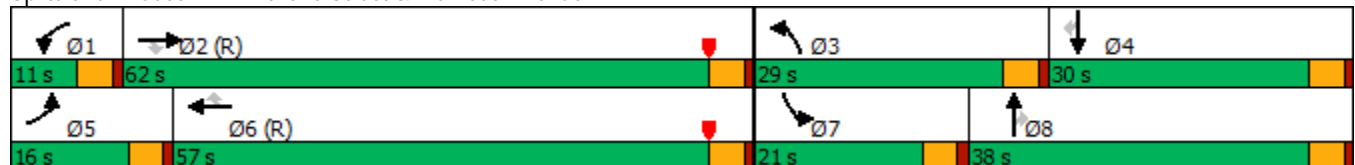
Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

























Splits and Phases: 2: Abilene Street & Alameda Avenue



HCM 6th Signalized Intersection Summary

2: Abilene Street & Alameda Avenue

2020 Existing PM.syn
03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| Future Volume (veh/h) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 1601 | 217 | 68 | 1615 | 46 | 359 | 199 | 44 | 124 | 231 | 90 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 205 | 2509 | 779 | 120 | 2384 | 740 | 427 | 475 | 402 | 149 | 761 | 339 |
| Arrive On Green | 0.06 | 0.49 | 0.49 | 0.07 | 0.93 | 0.93 | 0.12 | 0.25 | 0.25 | 0.08 | 0.21 | 0.21 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 1601 | 217 | 68 | 1615 | 46 | 359 | 199 | 44 | 124 | 231 | 90 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 30.7 | 10.7 | 2.5 | 7.5 | 0.3 | 13.4 | 11.7 | 2.8 | 9.0 | 7.2 | 6.2 |
| Cycle Q Clear(g_c), s | 5.7 | 30.7 | 10.7 | 2.5 | 7.5 | 0.3 | 13.4 | 11.7 | 2.8 | 9.0 | 7.2 | 6.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 205 | 2509 | 779 | 120 | 2384 | 740 | 427 | 475 | 402 | 149 | 761 | 339 |
| V/C Ratio(X) | 0.74 | 0.64 | 0.28 | 0.57 | 0.68 | 0.06 | 0.84 | 0.42 | 0.11 | 0.83 | 0.30 | 0.27 |
| Avail Cap(c_a), veh/h | 301 | 2509 | 779 | 170 | 2384 | 740 | 641 | 475 | 402 | 223 | 761 | 339 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.81 | 0.81 | 0.81 | 0.96 | 0.96 | 0.96 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.1 | 24.9 | 19.8 | 60.4 | 2.6 | 2.3 | 56.6 | 41.1 | 37.8 | 59.6 | 43.6 | 43.2 |
| Incr Delay (d2), s/veh | 5.4 | 1.3 | 0.9 | 3.4 | 1.3 | 0.1 | 6.1 | 2.6 | 0.5 | 15.1 | 1.0 | 1.9 |
| 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(95%),veh/ln | 4.7 | 17.9 | 7.5 | 2.0 | 2.5 | 0.2 | 10.2 | 9.7 | 2.1 | 8.3 | 6.0 | 4.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.5 | 26.1 | 20.7 | 63.8 | 3.9 | 2.5 | 62.7 | 43.7 | 38.3 | 74.7 | 44.6 | 45.1 |
| LnGrp LOS | E | C | C | E | A | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 1970 | | | 1729 | | | 602 | | | 445 | | |
| Approach Delay, s/veh | 28.6 | | | 6.2 | | | 54.7 | | | 53.1 | | |
| Approach LOS | C | | | A | | | D | | | D | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.1 | 69.4 | 20.8 | 32.8 | 12.3 | 66.1 | 15.6 | 38.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 6.5 | 57.5 | 24.5 | 25.5 | 11.5 | 52.5 | 16.5 | 33.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 4.5 | 32.7 | 15.4 | 9.2 | 7.7 | 9.5 | 11.0 | 13.7 | | | | |
| Green Ext Time (p_c), s | 0.0 | 13.7 | 0.9 | 1.5 | 0.1 | 16.7 | 0.1 | 1.2 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 26.1 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

Timings

2021 Background PM.syn

03/12/2020

1: Abilene Street & West Mall Entrance

| | WBL | WBR | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|
| Lane Group | WBL | WBR | NBT | SBL | SBT |
| Lane Configurations | ↰ | ↰ | ↰↰ | ↰ | ↰↰ |
| Traffic Volume (vph) | 42 | 204 | 488 | 243 | 524 |
| Future Volume (vph) | 42 | 204 | 488 | 243 | 524 |
| Turn Type | Prot | Perm | NA | pm+pt | NA |
| Protected Phases | 8 | | 2 | 1 | 6 |
| Permitted Phases | | 8 | | 6 | |
| Detector Phase | 8 | 8 | 2 | 1 | 6 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 22.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 26.0 | 26.0 | 31.0 | 23.0 | 54.0 |
| Total Split (%) | 32.5% | 32.5% | 38.8% | 28.8% | 67.5% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | |
| Recall Mode | None | None | C-Max | None | C-Max |
| Act Effect Green (s) | 8.3 | 8.3 | 49.6 | 62.7 | 62.7 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.62 | 0.78 | 0.78 |
| v/c Ratio | 0.27 | 0.63 | 0.29 | 0.39 | 0.19 |
| Control Delay | 35.5 | 12.8 | 8.1 | 4.4 | 2.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.5 | 12.8 | 8.1 | 4.4 | 2.6 |
| LOS | D | B | A | A | A |
| Approach Delay | 16.7 | | 8.1 | | 3.2 |
| Approach LOS | B | | A | | A |

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 7.2

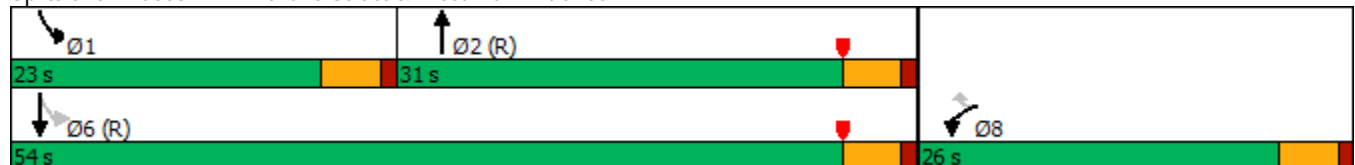
Intersection LOS: A

Intersection Capacity Utilization 43.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Abilene Street & West Mall Entrance









HCM 6th Signalized Intersection Summary

1: Abilene Street & West Mall Entrance

2021 Background PM.syn

03/12/2020

| |  | | | | | |
|------------------------------|---|---|---|------|---|---|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (veh/h) | 42 | 204 | 488 | 40 | 243 | 524 |
| Future Volume (veh/h) | 42 | 204 | 488 | 40 | 243 | 524 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 49 | 237 | 588 | 48 | 251 | 540 |
| Peak Hour Factor | 0.86 | 0.86 | 0.83 | 0.83 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 315 | 280 | 1897 | 155 | 619 | 2526 |
| Arrive On Green | 0.18 | 0.18 | 0.57 | 0.57 | 0.08 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 3421 | 271 | 1781 | 3647 |
| Grp Volume(v), veh/h | 49 | 237 | 314 | 322 | 251 | 540 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1777 | 1822 | 1781 | 1777 |
| Q Serve(g_s), s | 1.9 | 11.6 | 7.4 | 7.4 | 4.2 | 4.1 |
| Cycle Q Clear(g_c), s | 1.9 | 11.6 | 7.4 | 7.4 | 4.2 | 4.1 |
| Prop In Lane | 1.00 | 1.00 | | 0.15 | 1.00 | |
| Lane Grp Cap(c), veh/h | 315 | 280 | 1013 | 1039 | 619 | 2526 |
| V/C Ratio(X) | 0.16 | 0.85 | 0.31 | 0.31 | 0.41 | 0.21 |
| Avail Cap(c_a), veh/h | 479 | 426 | 1013 | 1039 | 880 | 2526 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.89 | 0.89 |
| Uniform Delay (d), s/veh | 27.9 | 31.9 | 9.0 | 9.0 | 5.6 | 3.9 |
| Incr Delay (d2), s/veh | 0.2 | 9.5 | 0.8 | 0.8 | 0.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.4 | 8.7 | 5.0 | 5.1 | 2.3 | 2.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 28.1 | 41.3 | 9.8 | 9.8 | 6.0 | 4.1 |
| LnGrp LOS | C | D | A | A | A | A |
| Approach Vol, veh/h | 286 | | 636 | | | 791 |
| Approach Delay, s/veh | 39.1 | | 9.8 | | | 4.7 |
| Approach LOS | D | | A | | | A |
| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
| Phs Duration (G+Y+Rc), s | 11.3 | 50.1 | | | 61.4 | 18.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 18.5 | 26.5 | | | 49.5 | 21.5 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 9.4 | | | 6.1 | 13.6 |
| Green Ext Time (p_c), s | 0.6 | 3.7 | | | 4.2 | 0.6 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 12.3 | | | |
| HCM 6th LOS | | | B | | | |

Timings

2021 Total PM.syn

03/12/2020

1: Abilene Street & West Mall Entrance

| | WBL | WBR | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|
| Lane Group | WBL | WBR | NBT | SBL | SBT |
| Lane Configurations | | | | | |
| Traffic Volume (vph) | 47 | 222 | 488 | 267 | 524 |
| Future Volume (vph) | 47 | 222 | 488 | 267 | 524 |
| Turn Type | Prot | Perm | NA | pm+pt | NA |
| Protected Phases | 8 | | 2 | 1 | 6 |
| Permitted Phases | | 8 | | 6 | |
| Detector Phase | 8 | 8 | 2 | 1 | 6 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 22.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 25.0 | 25.0 | 32.0 | 23.0 | 55.0 |
| Total Split (%) | 31.3% | 31.3% | 40.0% | 28.8% | 68.8% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | |
| Recall Mode | None | None | C-Max | None | C-Max |
| Act Effect Green (s) | 8.5 | 8.5 | 49.0 | 62.5 | 62.5 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.61 | 0.78 | 0.78 |
| v/c Ratio | 0.29 | 0.65 | 0.30 | 0.43 | 0.20 |
| Control Delay | 35.6 | 12.6 | 8.5 | 4.8 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.6 | 12.6 | 8.5 | 4.8 | 2.7 |
| LOS | D | B | A | A | A |
| Approach Delay | 16.7 | | 8.5 | | 3.4 |
| Approach LOS | B | | A | | A |

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 7.6

Intersection LOS: A

Intersection Capacity Utilization 45.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Abilene Street & West Mall Entrance














HCM 6th Signalized Intersection Summary

1: Abilene Street & West Mall Entrance

2021 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (veh/h) | 47 | 222 | 488 | 46 | 267 | 524 |
| Future Volume (veh/h) | 47 | 222 | 488 | 46 | 267 | 524 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 55 | 258 | 588 | 55 | 275 | 540 |
| Peak Hour Factor | 0.86 | 0.86 | 0.83 | 0.83 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 337 | 300 | 1802 | 168 | 610 | 2482 |
| Arrive On Green | 0.19 | 0.19 | 0.55 | 0.55 | 0.09 | 0.70 |
| Sat Flow, veh/h | 1781 | 1585 | 3379 | 307 | 1781 | 3647 |
| Grp Volume(v), veh/h | 55 | 258 | 318 | 325 | 275 | 540 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1777 | 1815 | 1781 | 1777 |
| Q Serve(g_s), s | 2.1 | 12.6 | 7.9 | 7.9 | 4.9 | 4.3 |
| Cycle Q Clear(g_c), s | 2.1 | 12.6 | 7.9 | 7.9 | 4.9 | 4.3 |
| Prop In Lane | 1.00 | 1.00 | | 0.17 | 1.00 | |
| Lane Grp Cap(c), veh/h | 337 | 300 | 975 | 996 | 610 | 2482 |
| V/C Ratio(X) | 0.16 | 0.86 | 0.33 | 0.33 | 0.45 | 0.22 |
| Avail Cap(c_a), veh/h | 456 | 406 | 975 | 996 | 856 | 2482 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.87 | 0.87 |
| Uniform Delay (d), s/veh | 27.1 | 31.4 | 9.9 | 9.9 | 6.2 | 4.3 |
| Incr Delay (d2), s/veh | 0.2 | 13.1 | 0.9 | 0.9 | 0.5 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.6 | 9.7 | 5.4 | 5.5 | 2.8 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 27.4 | 44.5 | 10.8 | 10.8 | 6.6 | 4.5 |
| LnGrp LOS | C | D | B | B | A | A |
| Approach Vol, veh/h | 313 | | 643 | | | 815 |
| Approach Delay, s/veh | 41.5 | | 10.8 | | | 5.2 |
| Approach LOS | D | | B | | | A |
| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
| Phs Duration (G+Y+Rc), s | 12.0 | 48.4 | | | 60.4 | 19.6 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 18.5 | 27.5 | | | 50.5 | 20.5 |
| Max Q Clear Time (g_c+I1), s | 6.9 | 9.9 | | | 6.3 | 14.6 |
| Green Ext Time (p_c), s | 0.6 | 3.8 | | | 4.2 | 0.5 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 13.7 | | | |
| HCM 6th LOS | | | B | | | |

Timings

1: Abilene Street & West Mall Entrance

2040 Background PM.syn

03/12/2020

| | ↖ | ↗ | ↑ | ↘ | ↓ |
|----------------------|-------|-------|-------|-------|-------|
| Lane Group | WBL | WBR | NBT | SBL | SBT |
| Lane Configurations | ↖ | ↗ | ↑↑ | ↘ | ↓↓ |
| Traffic Volume (vph) | 42 | 204 | 711 | 243 | 764 |
| Future Volume (vph) | 42 | 204 | 711 | 243 | 764 |
| Turn Type | Prot | Perm | NA | pm+pt | NA |
| Protected Phases | 8 | | 2 | 1 | 6 |
| Permitted Phases | | 8 | | 6 | |
| Detector Phase | 8 | 8 | 2 | 1 | 6 |
| Switch Phase | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 22.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 24.0 | 24.0 | 34.0 | 22.0 | 56.0 |
| Total Split (%) | 30.0% | 30.0% | 42.5% | 27.5% | 70.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | | | Lag | Lead | |
| Lead-Lag Optimize? | | | Yes | Yes | |
| Recall Mode | None | None | C-Max | None | C-Max |
| Act Effect Green (s) | 8.1 | 8.1 | 49.5 | 62.9 | 62.9 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.62 | 0.79 | 0.79 |
| v/c Ratio | 0.26 | 0.62 | 0.38 | 0.46 | 0.28 |
| Control Delay | 35.4 | 12.9 | 8.9 | 5.2 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.4 | 12.9 | 8.9 | 5.2 | 2.9 |
| LOS | D | B | A | A | A |
| Approach Delay | 16.7 | | 8.9 | | 3.5 |
| Approach LOS | B | | A | | A |

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 7.2

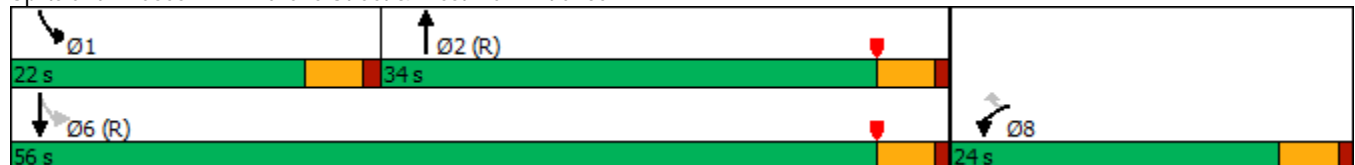
Intersection LOS: A

Intersection Capacity Utilization 49.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 1: Abilene Street & West Mall Entrance



HCM 6th Signalized Intersection Summary

1: Abilene Street & West Mall Entrance

2040 Background PM.syn

03/12/2020

























| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|------------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 42 | 204 | 711 | 40 | 243 | 764 |
| Future Volume (veh/h) | 42 | 204 | 711 | 40 | 243 | 764 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 46 | 222 | 773 | 43 | 251 | 788 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 296 | 264 | 1994 | 111 | 545 | 2563 |
| Arrive On Green | 0.17 | 0.17 | 0.58 | 0.58 | 0.08 | 0.72 |
| Sat Flow, veh/h | 1781 | 1585 | 3516 | 190 | 1781 | 3647 |
| Grp Volume(v), veh/h | 46 | 222 | 401 | 415 | 251 | 788 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1777 | 1836 | 1781 | 1777 |
| Q Serve(g_s), s | 1.8 | 10.9 | 9.7 | 9.7 | 4.1 | 6.4 |
| Cycle Q Clear(g_c), s | 1.8 | 10.9 | 9.7 | 9.7 | 4.1 | 6.4 |
| Prop In Lane | 1.00 | 1.00 | | 0.10 | 1.00 | |
| Lane Grp Cap(c), veh/h | 296 | 264 | 1035 | 1070 | 545 | 2563 |
| V/C Ratio(X) | 0.16 | 0.84 | 0.39 | 0.39 | 0.46 | 0.31 |
| Avail Cap(c_a), veh/h | 434 | 386 | 1035 | 1070 | 788 | 2563 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.85 | 0.85 |
| Uniform Delay (d), s/veh | 28.5 | 32.3 | 9.0 | 9.0 | 5.9 | 4.0 |
| Incr Delay (d2), s/veh | 0.2 | 10.6 | 1.1 | 1.1 | 0.5 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 1.4 | 8.4 | 6.5 | 6.7 | 2.2 | 3.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 28.8 | 42.9 | 10.1 | 10.1 | 6.4 | 4.3 |
| LnGrp LOS | C | D | B | B | A | A |
| Approach Vol, veh/h | 268 | | 816 | | | 1039 |
| Approach Delay, s/veh | 40.5 | | 10.1 | | | 4.8 |
| Approach LOS | D | | B | | | A |
| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
| Phs Duration (G+Y+Rc), s | 11.1 | 51.1 | | | 62.2 | 17.8 |
| Change Period (Y+Rc), s | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | 17.5 | 29.5 | | | 51.5 | 19.5 |
| Max Q Clear Time (g_c+I1), s | 6.1 | 11.7 | | | 8.4 | 12.9 |
| Green Ext Time (p_c), s | 0.6 | 5.0 | | | 6.6 | 0.5 |
| Intersection Summary | | | | | | |
| HCM 6th Ctrl Delay | | | 11.3 | | | |
| HCM 6th LOS | | | B | | | |

Timings

2: Abilene Street & Alameda Avenue

2040 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| Future Volume (vph) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 18.0 | 61.0 | 61.0 | 9.5 | 52.5 | 52.5 | 32.0 | 40.5 | 40.5 | 21.0 | 29.5 | 29.5 |
| Total Split (%) | 13.6% | 46.2% | 46.2% | 7.2% | 39.8% | 39.8% | 24.2% | 30.7% | 30.7% | 15.9% | 22.3% | 22.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 11.0 | 58.4 | 58.4 | 5.0 | 50.5 | 50.5 | 22.4 | 39.1 | 39.1 | 13.4 | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.08 | 0.44 | 0.44 | 0.04 | 0.38 | 0.38 | 0.17 | 0.30 | 0.30 | 0.10 | 0.23 | 0.23 |
| v/c Ratio | 0.53 | 1.05 | 0.59 | 0.58 | 1.22 | 0.13 | 0.77 | 0.56 | 0.16 | 0.65 | 0.42 | 0.34 |
| Control Delay | 64.6 | 69.9 | 13.5 | 84.5 | 128.5 | 1.3 | 61.6 | 44.7 | 3.1 | 73.4 | 46.4 | 9.3 |
| Queue Delay | 0.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.6 | 90.9 | 13.5 | 84.5 | 128.5 | 1.3 | 61.6 | 44.7 | 3.1 | 73.4 | 46.4 | 9.3 |
| LOS | E | F | B | F | F | A | E | D | A | E | D | A |
| Approach Delay | | 76.4 | | | 122.7 | | | 49.2 | | | 41.6 | |
| Approach LOS | | E | | | F | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 53.2 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.22

Intersection Signal Delay: 86.7

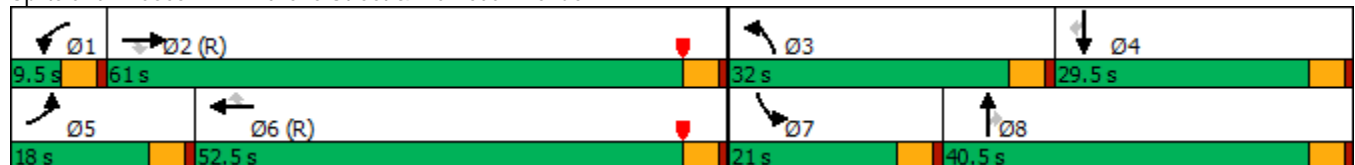
Intersection LOS: F

Intersection Capacity Utilization 83.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Abilene Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

2040 Total PM.syn

2: Abilene Street & Alameda Avenue

























03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| Future Volume (veh/h) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 2362 | 304 | 76 | 2372 | 46 | 451 | 309 | 48 | 117 | 340 | 84 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 206 | 2429 | 754 | 123 | 2305 | 716 | 522 | 510 | 432 | 142 | 715 | 319 |
| Arrive On Green | 0.06 | 0.48 | 0.48 | 0.07 | 0.90 | 0.90 | 0.15 | 0.27 | 0.27 | 0.08 | 0.20 | 0.20 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 2362 | 304 | 76 | 2372 | 46 | 451 | 309 | 48 | 117 | 340 | 84 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 59.6 | 16.4 | 2.8 | 59.6 | 0.4 | 16.8 | 19.0 | 3.0 | 8.5 | 11.2 | 5.9 |
| Cycle Q Clear(g_c), s | 5.7 | 59.6 | 16.4 | 2.8 | 59.6 | 0.4 | 16.8 | 19.0 | 3.0 | 8.5 | 11.2 | 5.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 206 | 2429 | 754 | 123 | 2305 | 716 | 522 | 510 | 432 | 142 | 715 | 319 |
| V/C Ratio(X) | 0.74 | 0.97 | 0.40 | 0.62 | 1.03 | 0.06 | 0.86 | 0.61 | 0.11 | 0.82 | 0.48 | 0.26 |
| Avail Cap(c_a), veh/h | 353 | 2429 | 754 | 131 | 2305 | 716 | 720 | 510 | 432 | 223 | 715 | 319 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.18 | 0.18 | 0.18 | 0.90 | 0.90 | 0.90 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.0 | 33.8 | 22.4 | 60.4 | 6.4 | 3.5 | 54.7 | 41.8 | 36.0 | 59.8 | 46.6 | 44.5 |
| Incr Delay (d2), s/veh | 5.1 | 12.8 | 1.6 | 1.5 | 16.8 | 0.0 | 7.3 | 4.8 | 0.5 | 13.1 | 2.3 | 2.0 |
| 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(95%),veh/ln | 4.7 | 34.6 | 10.6 | 2.0 | 8.0 | 0.3 | 12.2 | 14.3 | 2.2 | 7.8 | 8.9 | 4.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.1 | 46.6 | 24.1 | 61.9 | 23.2 | 3.6 | 61.9 | 46.6 | 36.5 | 72.9 | 48.8 | 46.5 |
| LnGrp LOS | E | D | C | E | F | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 2818 | | | 2494 | | | 808 | | | 541 | | |
| Approach Delay, s/veh | 45.2 | | | 24.1 | | | 54.6 | | | 53.7 | | |
| Approach LOS | D | | | C | | | D | | | D | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.2 | 67.3 | 24.5 | 31.1 | 12.4 | 64.1 | 15.0 | 40.5 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 56.5 | 27.5 | 25.0 | 13.5 | 48.0 | 16.5 | 36.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.8 | 61.6 | 18.8 | 13.2 | 7.7 | 61.6 | 10.5 | 21.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 1.1 | 1.9 | 0.2 | 0.0 | 0.1 | 1.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 39.1 | | | | | | | | | | | |
| HCM 6th LOS | D | | | | | | | | | | | |

Timings 2: Abilene Street & Alameda Avenue

2020 Existing PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| Future Volume (vph) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 16.0 | 62.0 | 62.0 | 11.0 | 57.0 | 57.0 | 29.0 | 37.0 | 37.0 | 22.0 | 30.0 | 30.0 |
| Total Split (%) | 12.1% | 47.0% | 47.0% | 8.3% | 43.2% | 43.2% | 22.0% | 28.0% | 28.0% | 16.7% | 22.7% | 22.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 10.4 | 59.7 | 59.7 | 6.4 | 53.6 | 53.6 | 19.0 | 36.0 | 36.0 | 14.0 | 31.0 | 31.0 |
| Actuated g/C Ratio | 0.08 | 0.45 | 0.45 | 0.05 | 0.41 | 0.41 | 0.14 | 0.27 | 0.27 | 0.11 | 0.23 | 0.23 |
| v/c Ratio | 0.56 | 0.70 | 0.46 | 0.41 | 0.78 | 0.12 | 0.73 | 0.39 | 0.17 | 0.66 | 0.28 | 0.36 |
| Control Delay | 66.7 | 31.4 | 5.2 | 84.1 | 20.6 | 0.6 | 62.6 | 42.8 | 2.9 | 73.2 | 43.3 | 10.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.7 | 31.4 | 5.2 | 84.1 | 20.6 | 0.6 | 62.6 | 42.8 | 2.9 | 73.2 | 43.3 | 10.5 |
| LOS | E | C | A | F | C | A | E | D | A | E | D | B |
| Approach Delay | | 28.7 | | | 22.0 | | | 48.5 | | | 39.4 | |
| Approach LOS | | C | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 52.5 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 30.0

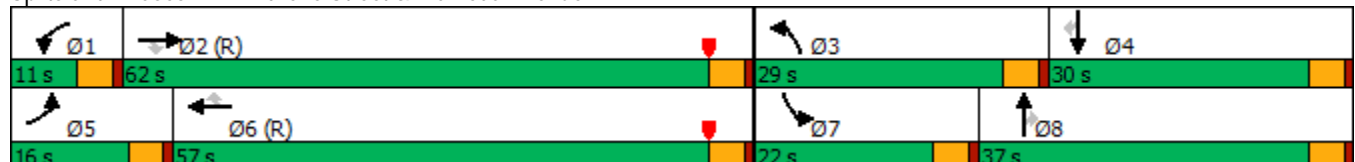
Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Abilene Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

2: Abilene Street & Alameda Avenue

2020 Existing PM.syn

























03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| Future Volume (veh/h) | 144 | 1521 | 407 | 63 | 1502 | 83 | 330 | 183 | 80 | 108 | 201 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 1601 | 217 | 68 | 1615 | 46 | 359 | 199 | 44 | 124 | 231 | 90 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 205 | 2547 | 791 | 120 | 2422 | 752 | 427 | 461 | 390 | 149 | 734 | 328 |
| Arrive On Green | 0.06 | 0.50 | 0.50 | 0.07 | 0.95 | 0.95 | 0.12 | 0.25 | 0.25 | 0.08 | 0.21 | 0.21 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 1601 | 217 | 68 | 1615 | 46 | 359 | 199 | 44 | 124 | 231 | 90 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 30.2 | 10.5 | 2.5 | 5.9 | 0.2 | 13.4 | 11.8 | 2.8 | 9.0 | 7.3 | 6.3 |
| Cycle Q Clear(g_c), s | 5.7 | 30.2 | 10.5 | 2.5 | 5.9 | 0.2 | 13.4 | 11.8 | 2.8 | 9.0 | 7.3 | 6.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 205 | 2547 | 791 | 120 | 2422 | 752 | 427 | 461 | 390 | 149 | 734 | 328 |
| V/C Ratio(X) | 0.74 | 0.63 | 0.27 | 0.57 | 0.67 | 0.06 | 0.84 | 0.43 | 0.11 | 0.83 | 0.31 | 0.27 |
| Avail Cap(c_a), veh/h | 301 | 2547 | 791 | 170 | 2422 | 752 | 641 | 461 | 390 | 236 | 734 | 328 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.81 | 0.81 | 0.81 | 0.97 | 0.97 | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.1 | 24.2 | 19.2 | 60.4 | 1.9 | 1.8 | 56.6 | 42.0 | 38.6 | 59.5 | 44.4 | 44.0 |
| Incr Delay (d2), s/veh | 5.4 | 1.2 | 0.9 | 3.4 | 1.2 | 0.1 | 6.2 | 2.9 | 0.6 | 12.8 | 1.1 | 2.1 |
| 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(95%),veh/ln | 4.7 | 17.6 | 7.3 | 2.0 | 2.0 | 0.2 | 10.3 | 9.8 | 2.1 | 8.2 | 6.0 | 4.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.5 | 25.3 | 20.1 | 63.8 | 3.1 | 1.9 | 62.8 | 44.8 | 39.1 | 72.4 | 45.6 | 46.1 |
| LnGrp LOS | E | C | C | E | A | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 1970 | | | 1729 | | | 602 | | | 445 | | |
| Approach Delay, s/veh | 27.9 | | | 5.5 | | | 55.1 | | | 53.1 | | |
| Approach LOS | C | | | A | | | E | | | D | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.1 | 70.3 | 20.8 | 31.8 | 12.3 | 67.1 | 15.6 | 37.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 6.5 | 57.5 | 24.5 | 25.5 | 11.5 | 52.5 | 17.5 | 32.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.5 | 32.2 | 15.4 | 9.3 | 7.7 | 7.9 | 11.0 | 13.8 | | | | |
| Green Ext Time (p_c), s | 0.0 | 13.9 | 0.9 | 1.5 | 0.1 | 17.0 | 0.1 | 1.1 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 25.6 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

Timings 2: Abilene Street & Alameda Avenue

2021 Background PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 1511 | 471 | 71 | 1488 | 83 | 401 | 194 | 84 | 108 | 213 | 153 |
| Future Volume (vph) | 144 | 1511 | 471 | 71 | 1488 | 83 | 401 | 194 | 84 | 108 | 213 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 16.0 | 57.0 | 57.0 | 12.0 | 53.0 | 53.0 | 40.0 | 39.0 | 39.0 | 24.0 | 23.0 | 23.0 |
| Total Split (%) | 12.1% | 43.2% | 43.2% | 9.1% | 40.2% | 40.2% | 30.3% | 29.5% | 29.5% | 18.2% | 17.4% | 17.4% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 10.4 | 54.9 | 54.9 | 7.2 | 49.6 | 49.6 | 22.1 | 39.6 | 39.6 | 14.4 | 31.9 | 31.9 |
| Actuated g/C Ratio | 0.08 | 0.42 | 0.42 | 0.05 | 0.38 | 0.38 | 0.17 | 0.30 | 0.30 | 0.11 | 0.24 | 0.24 |
| v/c Ratio | 0.56 | 0.75 | 0.55 | 0.41 | 0.84 | 0.13 | 0.76 | 0.38 | 0.17 | 0.64 | 0.29 | 0.36 |
| Control Delay | 66.7 | 36.1 | 7.3 | 85.4 | 26.1 | 2.1 | 61.2 | 40.0 | 7.9 | 70.9 | 42.9 | 13.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.7 | 36.1 | 7.3 | 85.4 | 26.1 | 2.1 | 61.2 | 40.0 | 7.9 | 70.9 | 42.9 | 13.4 |
| LOS | E | D | A | F | C | A | E | D | A | E | D | B |
| Approach Delay | | 31.8 | | | 27.5 | | | 48.6 | | | 39.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 48.5 (37%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 33.5

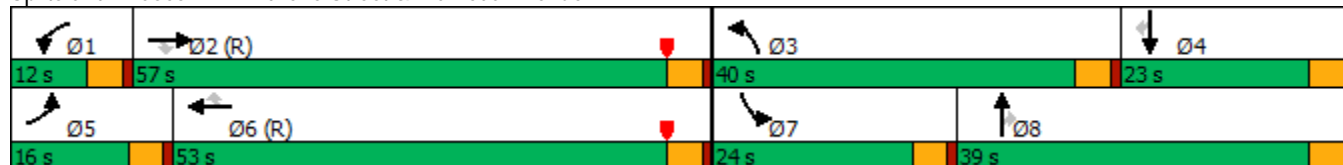
Intersection LOS: C

Intersection Capacity Utilization 65.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Abilene Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

2021 Background PM.syn

2: Abilene Street & Alameda Avenue

03/12/2020

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 1511 | 471 | 71 | 1488 | 83 | 401 | 194 | 84 | 108 | 213 | 153 |
| Future Volume (veh/h) | 144 | 1511 | 471 | 71 | 1488 | 83 | 401 | 194 | 84 | 108 | 213 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 1591 | 285 | 76 | 1600 | 46 | 436 | 211 | 48 | 124 | 245 | 90 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 205 | 2464 | 765 | 123 | 2343 | 727 | 515 | 489 | 414 | 150 | 698 | 311 |
| Arrive On Green | 0.06 | 0.48 | 0.48 | 0.07 | 0.92 | 0.92 | 0.15 | 0.26 | 0.26 | 0.08 | 0.20 | 0.20 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 1591 | 285 | 76 | 1600 | 46 | 436 | 211 | 48 | 124 | 245 | 90 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 30.9 | 15.0 | 2.8 | 9.1 | 0.3 | 16.2 | 12.4 | 3.0 | 9.0 | 7.9 | 6.4 |
| Cycle Q Clear(g_c), s | 5.7 | 30.9 | 15.0 | 2.8 | 9.1 | 0.3 | 16.2 | 12.4 | 3.0 | 9.0 | 7.9 | 6.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 205 | 2464 | 765 | 123 | 2343 | 727 | 515 | 489 | 414 | 150 | 698 | 311 |
| V/C Ratio(X) | 0.74 | 0.65 | 0.37 | 0.62 | 0.68 | 0.06 | 0.85 | 0.43 | 0.12 | 0.83 | 0.35 | 0.29 |
| Avail Cap(c_a), veh/h | 301 | 2464 | 765 | 196 | 2343 | 727 | 929 | 489 | 414 | 263 | 698 | 311 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.81 | 0.81 | 0.81 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.1 | 25.7 | 21.5 | 60.4 | 3.3 | 3.0 | 54.7 | 40.6 | 37.1 | 59.5 | 45.8 | 45.2 |
| Incr Delay (d2), s/veh | 5.4 | 1.3 | 1.4 | 4.1 | 1.3 | 0.1 | 3.7 | 2.6 | 0.5 | 10.9 | 1.4 | 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(95%),veh/ln | 4.7 | 18.1 | 9.9 | 2.3 | 3.0 | 0.3 | 11.7 | 10.1 | 2.3 | 8.0 | 6.5 | 4.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.5 | 27.0 | 22.9 | 64.5 | 4.6 | 3.1 | 58.4 | 43.2 | 37.7 | 70.4 | 47.2 | 47.5 |
| LnGrp LOS | E | C | C | E | A | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 2028 | | | 1722 | | | 695 | | | 459 | | |
| Approach Delay, s/veh | 29.4 | | | 7.2 | | | 52.4 | | | 53.5 | | |
| Approach LOS | C | | | A | | | D | | | D | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.2 | 68.2 | 24.2 | 30.4 | 12.3 | 65.1 | 15.6 | 39.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 7.5 | 52.5 | 35.5 | 18.5 | 11.5 | 48.5 | 19.5 | 34.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 4.8 | 32.9 | 18.2 | 9.9 | 7.7 | 11.1 | 11.0 | 14.4 | | | | |
| Green Ext Time (p_c), s | 0.0 | 12.0 | 1.5 | 1.2 | 0.1 | 15.7 | 0.2 | 1.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 27.1 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

Timings

2: Abilene Street & Alameda Avenue

2021 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 1535 | 489 | 71 | 1506 | 83 | 415 | 199 | 84 | 108 | 219 | 153 |
| Future Volume (vph) | 144 | 1535 | 489 | 71 | 1506 | 83 | 415 | 199 | 84 | 108 | 219 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 16.0 | 54.0 | 54.0 | 12.0 | 50.0 | 50.0 | 43.0 | 39.0 | 39.0 | 27.0 | 23.0 | 23.0 |
| Total Split (%) | 12.1% | 40.9% | 40.9% | 9.1% | 37.9% | 37.9% | 32.6% | 29.5% | 29.5% | 20.5% | 17.4% | 17.4% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 10.4 | 51.9 | 51.9 | 7.2 | 46.6 | 46.6 | 22.8 | 42.5 | 42.5 | 14.5 | 34.2 | 34.2 |
| Actuated g/C Ratio | 0.08 | 0.39 | 0.39 | 0.05 | 0.35 | 0.35 | 0.17 | 0.32 | 0.32 | 0.11 | 0.26 | 0.26 |
| v/c Ratio | 0.56 | 0.81 | 0.59 | 0.41 | 0.90 | 0.14 | 0.76 | 0.36 | 0.16 | 0.64 | 0.27 | 0.34 |
| Control Delay | 66.7 | 40.2 | 9.3 | 81.9 | 30.7 | 3.0 | 60.6 | 37.6 | 7.5 | 70.4 | 40.9 | 11.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.7 | 40.2 | 9.3 | 81.9 | 30.7 | 3.0 | 60.6 | 37.6 | 7.5 | 70.4 | 40.9 | 11.4 |
| LOS | E | D | A | F | C | A | E | D | A | E | D | B |
| Approach Delay | | 35.0 | | | 31.5 | | | 47.7 | | | 38.1 | |
| Approach LOS | | C | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 45.5 (34%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 35.9

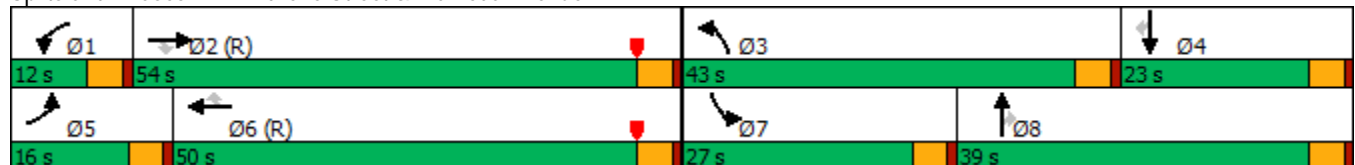
Intersection LOS: D

Intersection Capacity Utilization 66.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Abilene Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

2: Abilene Street & Alameda Avenue

2021 Total PM.syn

03/12/2020

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 1535 | 489 | 71 | 1506 | 83 | 415 | 199 | 84 | 108 | 219 | 153 |
| Future Volume (veh/h) | 144 | 1535 | 489 | 71 | 1506 | 83 | 415 | 199 | 84 | 108 | 219 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 1616 | 304 | 76 | 1619 | 46 | 451 | 216 | 48 | 124 | 252 | 90 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 205 | 2463 | 765 | 123 | 2342 | 727 | 532 | 489 | 414 | 150 | 681 | 304 |
| Arrive On Green | 0.06 | 0.48 | 0.48 | 0.07 | 0.92 | 0.92 | 0.15 | 0.26 | 0.26 | 0.08 | 0.19 | 0.19 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 1616 | 304 | 76 | 1619 | 46 | 451 | 216 | 48 | 124 | 252 | 90 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 31.6 | 16.2 | 2.8 | 9.5 | 0.3 | 16.8 | 12.7 | 3.0 | 9.0 | 8.1 | 6.4 |
| Cycle Q Clear(g_c), s | 5.7 | 31.6 | 16.2 | 2.8 | 9.5 | 0.3 | 16.8 | 12.7 | 3.0 | 9.0 | 8.1 | 6.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 205 | 2463 | 765 | 123 | 2342 | 727 | 532 | 489 | 414 | 150 | 681 | 304 |
| V/C Ratio(X) | 0.74 | 0.66 | 0.40 | 0.62 | 0.69 | 0.06 | 0.85 | 0.44 | 0.12 | 0.82 | 0.37 | 0.30 |
| Avail Cap(c_a), veh/h | 301 | 2463 | 765 | 196 | 2342 | 727 | 1008 | 489 | 414 | 304 | 681 | 304 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.67 | 0.67 | 0.67 | 0.94 | 0.94 | 0.94 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.1 | 25.9 | 21.9 | 60.4 | 3.4 | 3.0 | 54.3 | 40.7 | 37.1 | 59.5 | 46.4 | 45.7 |
| Incr Delay (d2), s/veh | 5.4 | 1.4 | 1.5 | 3.4 | 1.1 | 0.1 | 3.6 | 2.7 | 0.5 | 10.7 | 1.5 | 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(95%),veh/ln | 4.7 | 18.5 | 10.5 | 2.3 | 3.0 | 0.3 | 11.9 | 10.3 | 2.3 | 8.0 | 6.8 | 5.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.5 | 27.3 | 23.4 | 63.8 | 4.5 | 3.1 | 57.9 | 43.4 | 37.7 | 70.2 | 48.0 | 48.2 |
| LnGrp LOS | E | C | C | E | A | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 2072 | | 1741 | | | | 715 | | 466 | | | |
| Approach Delay, s/veh | 29.6 | | 7.0 | | | | 52.2 | | 53.9 | | | |
| Approach LOS | C | | A | | | | D | | D | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.2 | 68.2 | 24.8 | 29.8 | 12.3 | 65.0 | 15.6 | 39.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 7.5 | 49.5 | 38.5 | 18.5 | 11.5 | 45.5 | 22.5 | 34.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.8 | 33.6 | 18.8 | 10.1 | 7.7 | 11.5 | 11.0 | 14.7 | | | | |
| Green Ext Time (p_c), s | 0.0 | 10.6 | 1.6 | 1.2 | 0.1 | 15.4 | 0.2 | 1.3 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 27.2 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

Timings

2: Abilene Street & Alameda Avenue

2040 Background PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 2220 | 471 | 71 | 2188 | 83 | 401 | 279 | 84 | 108 | 307 | 153 |
| Future Volume (vph) | 144 | 2220 | 471 | 71 | 2188 | 83 | 401 | 279 | 84 | 108 | 307 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 12.8 | 61.0 | 61.0 | 9.5 | 57.7 | 57.7 | 34.0 | 38.5 | 38.5 | 23.0 | 27.5 | 27.5 |
| Total Split (%) | 9.7% | 46.2% | 46.2% | 7.2% | 43.7% | 43.7% | 25.8% | 29.2% | 29.2% | 17.4% | 20.8% | 20.8% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 8.3 | 58.4 | 58.4 | 5.0 | 53.2 | 53.2 | 22.0 | 38.7 | 38.7 | 13.8 | 30.5 | 30.5 |
| Actuated g/C Ratio | 0.06 | 0.44 | 0.44 | 0.04 | 0.40 | 0.40 | 0.17 | 0.29 | 0.29 | 0.10 | 0.23 | 0.23 |
| v/c Ratio | 0.71 | 1.04 | 0.57 | 0.58 | 1.15 | 0.12 | 0.76 | 0.56 | 0.17 | 0.63 | 0.41 | 0.36 |
| Control Delay | 78.8 | 66.4 | 13.0 | 87.6 | 100.4 | 3.0 | 61.5 | 45.0 | 8.1 | 71.2 | 45.7 | 15.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 78.8 | 66.4 | 13.0 | 87.6 | 100.4 | 3.0 | 61.5 | 45.0 | 8.1 | 71.2 | 45.7 | 15.8 |
| LOS | E | E | B | F | F | A | E | D | A | E | D | B |
| Approach Delay | | 58.1 | | | 96.6 | | | 49.6 | | | 42.5 | |
| Approach LOS | | E | | | F | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 53.2 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.15

Intersection Signal Delay: 69.7

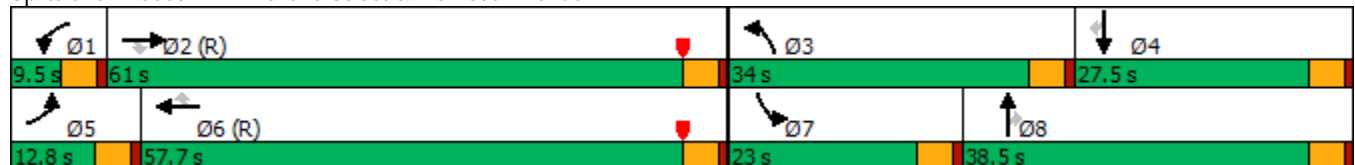
Intersection LOS: E

Intersection Capacity Utilization 82.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Abilene Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

2040 Background PM.syn

2: Abilene Street & Alameda Avenue

03/12/2020

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 2220 | 471 | 71 | 2188 | 83 | 401 | 279 | 84 | 108 | 307 | 153 |
| Future Volume (veh/h) | 144 | 2220 | 471 | 71 | 2188 | 83 | 401 | 279 | 84 | 108 | 307 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 2337 | 285 | 76 | 2353 | 46 | 436 | 303 | 48 | 117 | 334 | 84 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 2505 | 778 | 123 | 2388 | 741 | 510 | 482 | 408 | 142 | 675 | 301 |
| Arrive On Green | 0.06 | 0.49 | 0.49 | 0.07 | 0.94 | 0.94 | 0.15 | 0.26 | 0.26 | 0.08 | 0.19 | 0.19 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 2337 | 285 | 76 | 2353 | 46 | 436 | 303 | 48 | 117 | 334 | 84 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 56.7 | 14.7 | 2.8 | 50.1 | 0.3 | 16.2 | 18.9 | 3.1 | 8.5 | 11.1 | 6.0 |
| Cycle Q Clear(g_c), s | 5.7 | 56.7 | 14.7 | 2.8 | 50.1 | 0.3 | 16.2 | 18.9 | 3.1 | 8.5 | 11.1 | 6.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 202 | 2505 | 778 | 123 | 2388 | 741 | 510 | 482 | 408 | 142 | 675 | 301 |
| V/C Ratio(X) | 0.75 | 0.93 | 0.37 | 0.62 | 0.99 | 0.06 | 0.85 | 0.63 | 0.12 | 0.82 | 0.50 | 0.28 |
| Avail Cap(c_a), veh/h | 217 | 2505 | 778 | 131 | 2388 | 741 | 772 | 482 | 408 | 250 | 675 | 301 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.50 | 0.50 | 0.50 | 0.94 | 0.94 | 0.94 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.2 | 31.6 | 20.9 | 60.4 | 3.9 | 2.3 | 54.9 | 43.4 | 37.5 | 59.8 | 47.8 | 45.7 |
| Incr Delay (d2), s/veh | 12.9 | 7.9 | 1.3 | 4.0 | 10.0 | 0.1 | 5.7 | 5.8 | 0.6 | 11.1 | 2.6 | 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(95%),veh/ln | 5.1 | 31.9 | 9.7 | 2.3 | 6.1 | 0.2 | 11.8 | 14.5 | 2.3 | 7.7 | 8.9 | 4.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 74.1 | 39.5 | 22.2 | 64.4 | 13.9 | 2.4 | 60.6 | 49.2 | 38.1 | 70.9 | 50.4 | 48.0 |
| LnGrp LOS | E | D | C | E | B | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 2774 | | | 2475 | | | 787 | | | 535 | | |
| Approach Delay, s/veh | 39.6 | | | 15.2 | | | 54.8 | | | 54.5 | | |
| Approach LOS | D | | | B | | | D | | | D | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.2 | 69.3 | 24.0 | 29.6 | 12.2 | 66.2 | 15.0 | 38.5 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 56.5 | 29.5 | 23.0 | 8.3 | 53.2 | 18.5 | 34.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 4.8 | 58.7 | 18.2 | 13.1 | 7.7 | 52.1 | 10.5 | 20.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 1.2 | 1.7 | 0.0 | 1.0 | 0.2 | 1.6 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 33.5 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

Timings

2: Abilene Street & Alameda Avenue

2040 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| Future Volume (vph) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 6 | 3 | 8 | 8 | 7 | 4 | 4 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 12.8 | 61.0 | 61.0 | 9.5 | 57.7 | 57.7 | 32.0 | 39.5 | 39.5 | 22.0 | 29.5 | 29.5 |
| Total Split (%) | 9.7% | 46.2% | 46.2% | 7.2% | 43.7% | 43.7% | 24.2% | 29.9% | 29.9% | 16.7% | 22.3% | 22.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 8.3 | 58.4 | 58.4 | 5.0 | 53.2 | 53.2 | 22.4 | 38.9 | 38.9 | 13.6 | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.06 | 0.44 | 0.44 | 0.04 | 0.40 | 0.40 | 0.17 | 0.29 | 0.29 | 0.10 | 0.23 | 0.23 |
| v/c Ratio | 0.71 | 1.05 | 0.59 | 0.58 | 1.16 | 0.12 | 0.77 | 0.56 | 0.17 | 0.64 | 0.42 | 0.36 |
| Control Delay | 78.8 | 69.9 | 13.5 | 84.5 | 100.2 | 2.6 | 61.6 | 45.0 | 8.0 | 72.3 | 46.4 | 16.0 |
| Queue Delay | 0.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 78.8 | 90.9 | 13.5 | 84.5 | 100.2 | 2.6 | 61.6 | 45.0 | 8.0 | 72.3 | 46.4 | 16.0 |
| LOS | E | F | B | F | F | A | E | D | A | E | D | B |
| Approach Delay | | 77.2 | | | 96.3 | | | 49.8 | | | 43.1 | |
| Approach LOS | | E | | | F | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 53.2 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.16

Intersection Signal Delay: 77.7

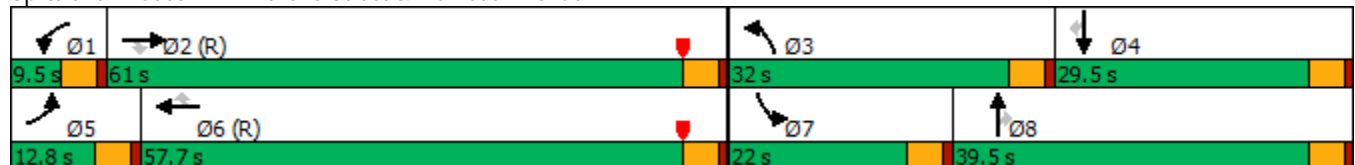
Intersection LOS: E

Intersection Capacity Utilization 83.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2: Abilene Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

2: Abilene Street & Alameda Avenue

2040 Total PM.syn



















03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| Future Volume (veh/h) | 144 | 2244 | 489 | 71 | 2206 | 83 | 415 | 284 | 84 | 108 | 313 | 153 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 2362 | 304 | 76 | 2372 | 46 | 451 | 309 | 48 | 117 | 340 | 84 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 2467 | 766 | 123 | 2350 | 730 | 522 | 496 | 420 | 142 | 689 | 307 |
| Arrive On Green | 0.06 | 0.48 | 0.48 | 0.07 | 0.92 | 0.92 | 0.15 | 0.27 | 0.27 | 0.08 | 0.19 | 0.19 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 1870 | 1585 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 152 | 2362 | 304 | 76 | 2372 | 46 | 451 | 309 | 48 | 117 | 340 | 84 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1870 | 1585 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.7 | 58.7 | 16.2 | 2.8 | 60.8 | 0.3 | 16.8 | 19.2 | 3.0 | 8.5 | 11.3 | 6.0 |
| Cycle Q Clear(g_c), s | 5.7 | 58.7 | 16.2 | 2.8 | 60.8 | 0.3 | 16.8 | 19.2 | 3.0 | 8.5 | 11.3 | 6.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 202 | 2467 | 766 | 123 | 2350 | 730 | 522 | 496 | 420 | 142 | 689 | 307 |
| V/C Ratio(X) | 0.75 | 0.96 | 0.40 | 0.62 | 1.01 | 0.06 | 0.86 | 0.62 | 0.11 | 0.82 | 0.49 | 0.27 |
| Avail Cap(c_a), veh/h | 217 | 2467 | 766 | 131 | 2350 | 730 | 720 | 496 | 420 | 236 | 689 | 307 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 0.18 | 0.18 | 0.18 | 0.93 | 0.93 | 0.93 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.2 | 32.8 | 21.8 | 60.4 | 5.2 | 2.8 | 54.7 | 42.7 | 36.8 | 59.8 | 47.4 | 45.3 |
| Incr Delay (d2), s/veh | 12.9 | 10.6 | 1.5 | 1.5 | 10.3 | 0.0 | 7.5 | 5.4 | 0.5 | 11.2 | 2.5 | 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(95%),veh/ln | 5.1 | 33.5 | 10.5 | 2.0 | 5.8 | 0.2 | 12.3 | 14.6 | 2.3 | 7.7 | 9.0 | 4.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 74.1 | 43.4 | 23.4 | 61.9 | 15.5 | 2.9 | 62.2 | 48.1 | 37.3 | 71.0 | 50.0 | 47.5 |
| LnGrp LOS | E | D | C | E | F | A | E | D | D | E | D | D |
| Approach Vol, veh/h | 2818 | | | 2494 | | | 808 | | | 541 | | |
| Approach Delay, s/veh | 42.9 | | | 16.7 | | | 55.3 | | | 54.1 | | |
| Approach LOS | D | | | B | | | E | | | D | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 9.2 | 68.3 | 24.5 | 30.1 | 12.2 | 65.3 | 15.0 | 39.5 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 56.5 | 27.5 | 25.0 | 8.3 | 53.2 | 17.5 | 35.0 | | | | |
| Max Q Clear Time (g_c+l1), s | 4.8 | 60.7 | 18.8 | 13.3 | 7.7 | 62.8 | 10.5 | 21.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 1.1 | 1.9 | 0.0 | 0.0 | 0.1 | 1.6 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 35.5 | | | | | | | | | | | |
| HCM 6th LOS | D | | | | | | | | | | | |

Timings 3: Crystal Street & Alameda Avenue

2020 Existing PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 120 | 1420 | 167 | 114 | 1458 | 100 | 51 | 60 | 24 |
| Future Volume (vph) | 120 | 1420 | 167 | 114 | 1458 | 100 | 51 | 60 | 24 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | D.P+P | NA | D.P+P | NA |
| Protected Phases | 5 | 2 | | 1 | 6 | 3 | 8 | 7 | 4 |
| Permitted Phases | 6 | | 2 | 2 | | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 3 | 8 | 7 | 4 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 11.2 | 69.0 | 69.0 | 22.0 | 79.8 | 16.0 | 31.0 | 10.0 | 25.0 |
| Total Split (%) | 8.5% | 52.3% | 52.3% | 16.7% | 60.5% | 12.1% | 23.5% | 7.6% | 18.9% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | Max | None | Max |
| Act Effect Green (s) | 82.0 | 72.6 | 72.6 | 82.0 | 75.4 | 32.0 | 28.5 | 32.9 | 21.5 |
| Actuated g/C Ratio | 0.62 | 0.55 | 0.55 | 0.62 | 0.57 | 0.24 | 0.22 | 0.25 | 0.16 |
| v/c Ratio | 0.35 | 0.55 | 0.19 | 0.51 | 0.57 | 0.35 | 0.42 | 0.15 | 0.34 |
| Control Delay | 11.5 | 5.1 | 0.3 | 31.8 | 7.5 | 40.4 | 30.7 | 36.2 | 19.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.5 | 5.1 | 0.3 | 31.8 | 7.5 | 40.4 | 30.7 | 36.2 | 19.2 |
| LOS | B | A | A | C | A | D | C | D | B |
| Approach Delay | | 5.1 | | | 9.2 | | 34.5 | | 26.0 |
| Approach LOS | | A | | | A | | C | | C |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 64.5 (49%), Referenced to phase 2:EBWB and 6:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 9.9

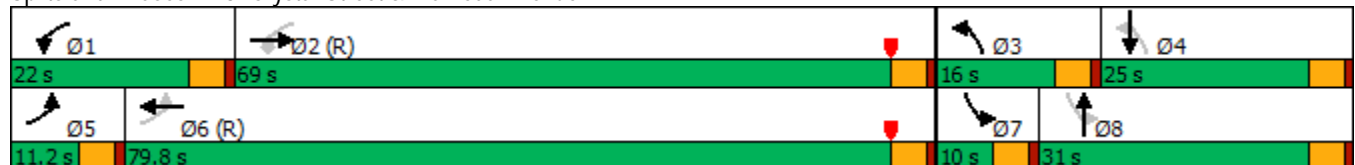
Intersection LOS: A

Intersection Capacity Utilization 62.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 3: Crystal Street & Alameda Avenue































HCM 6th Signalized Intersection Summary

3: Crystal Street & Alameda Avenue

2020 Existing PM.syn

























03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |  |    | |  |  | |   |  |  |
| Traffic Volume (veh/h) | 120 | 1420 | 167 | 114 | 1458 | 84 | 100 | 51 | 103 | 60 | 24 | 66 |
| Future Volume (veh/h) | 120 | 1420 | 167 | 114 | 1458 | 84 | 100 | 51 | 103 | 60 | 24 | 66 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 129 | 1527 | 180 | 121 | 1551 | 89 | 112 | 57 | 116 | 76 | 30 | 84 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 589 | 2978 | 924 | 300 | 2914 | 167 | 311 | 110 | 225 | 487 | 74 | 208 |
| Arrive On Green | 0.08 | 1.00 | 1.00 | 0.09 | 1.00 | 1.00 | 0.07 | 0.20 | 0.20 | 0.04 | 0.17 | 0.17 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 1781 | 4940 | 283 | 1781 | 550 | 1119 | 3456 | 435 | 1217 |
| Grp Volume(v), veh/h | 129 | 1527 | 180 | 121 | 1069 | 571 | 112 | 0 | 173 | 76 | 0 | 114 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1781 | 1702 | 1819 | 1781 | 0 | 1669 | 1728 | 0 | 1651 |
| Q Serve(g_s), s | 1.9 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 | 6.8 | 0.0 | 12.2 | 2.3 | 0.0 | 8.1 |
| Cycle Q Clear(g_c), s | 1.9 | 0.0 | 0.0 | 3.7 | 0.0 | 0.0 | 6.8 | 0.0 | 12.2 | 2.3 | 0.0 | 8.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 0.67 | 1.00 | | 0.74 |
| Lane Grp Cap(c), veh/h | 589 | 2978 | 924 | 300 | 2008 | 1073 | 311 | 0 | 335 | 487 | 0 | 282 |
| V/C Ratio(X) | 0.22 | 0.51 | 0.19 | 0.40 | 0.53 | 0.53 | 0.36 | 0.00 | 0.52 | 0.16 | 0.00 | 0.40 |
| Avail Cap(c_a), veh/h | 634 | 2978 | 924 | 458 | 2008 | 1073 | 349 | 0 | 335 | 508 | 0 | 282 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.69 | 0.69 | 0.69 | 0.82 | 0.82 | 0.82 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.1 | 0.0 | 0.0 | 9.4 | 0.0 | 0.0 | 41.3 | 0.0 | 47.0 | 39.9 | 0.0 | 48.8 |
| Incr Delay (d2), s/veh | 0.1 | 0.4 | 0.3 | 0.7 | 0.8 | 1.6 | 0.7 | 0.0 | 5.6 | 0.1 | 0.0 | 4.3 |
| 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(95%),veh/ln | 1.2 | 0.2 | 0.2 | 2.4 | 0.4 | 0.8 | 5.6 | 0.0 | 9.6 | 1.8 | 0.0 | 6.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.3 | 0.4 | 0.3 | 10.1 | 0.8 | 1.6 | 42.1 | 0.0 | 52.6 | 40.1 | 0.0 | 53.1 |
| LnGrp LOS | A | A | A | B | A | A | D | A | D | D | A | D |
| Approach Vol, veh/h | 1836 | | 1761 | | | | 285 | | 190 | | | |
| Approach Delay, s/veh | 1.0 | | 1.7 | | | | 48.5 | | 47.9 | | | |
| Approach LOS | A | | A | | | | D | | D | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 10.3 | 81.5 | 13.2 | 27.0 | 9.5 | 82.4 | 9.2 | 31.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 17.5 | 64.5 | 11.5 | 20.5 | 6.7 | 75.3 | 5.5 | 26.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 5.7 | 2.0 | 8.8 | 10.1 | 3.9 | 2.0 | 4.3 | 14.2 | | | | |
| Green Ext Time (p_c), s | 0.2 | 17.9 | 0.1 | 0.4 | 0.1 | 17.5 | 0.0 | 0.8 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 6.8 | | | | | | | | | | | |
| HCM 6th LOS | A | | | | | | | | | | | |

Timings 3: Crystal Street & Alameda Avenue

2021 Background PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |   |    |  |  |    |  |  |   |  |
| Traffic Volume (vph) | 120 | 1411 | 168 | 166 | 1454 | 96 | 54 | 60 | 27 |
| Future Volume (vph) | 120 | 1411 | 168 | 166 | 1454 | 96 | 54 | 60 | 27 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | D.P+P | NA | D.P+P | NA |
| Protected Phases | 5 | 2 | | 1 | 6 | 3 | 8 | 7 | 4 |
| Permitted Phases | 6 | | 2 | 2 | | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 3 | 8 | 7 | 4 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 11.2 | 65.0 | 65.0 | 25.0 | 78.8 | 14.2 | 32.0 | 10.0 | 27.8 |
| Total Split (%) | 8.5% | 49.2% | 49.2% | 18.9% | 59.7% | 10.8% | 24.2% | 7.6% | 21.1% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | Max | None | Max |
| Act Effect Green (s) | 81.0 | 67.8 | 67.8 | 81.0 | 74.4 | 33.0 | 29.5 | 33.9 | 23.7 |
| Actuated g/C Ratio | 0.61 | 0.51 | 0.51 | 0.61 | 0.56 | 0.25 | 0.22 | 0.26 | 0.18 |
| v/c Ratio | 0.36 | 0.58 | 0.20 | 0.65 | 0.57 | 0.33 | 0.54 | 0.17 | 0.32 |
| Control Delay | 13.4 | 5.9 | 0.4 | 49.3 | 8.8 | 39.4 | 31.4 | 35.8 | 19.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 13.4 | 5.9 | 0.4 | 49.3 | 8.8 | 39.4 | 31.4 | 35.8 | 19.7 |
| LOS | B | A | A | D | A | D | C | D | B |
| Approach Delay | | 5.8 | | | 12.8 | | 33.9 | | 26.0 |
| Approach LOS | | A | | | B | | C | | C |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 60.5 (46%), Referenced to phase 2:EBWB and 6:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 12.1






Intersection LOS: B

Intersection Capacity Utilization 68.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Crystal Street & Alameda Avenue




























| | | | |
|---|---|---|---|
|  |  |  |  |
| Ø1 | Ø2 (R) | Ø3 | Ø4 |
| 25 s | 65 s | 14.2 s | 27.8 s |
|  |  |  |  |
| Ø5 | Ø6 (R) | Ø7 | Ø8 |
| 11.2 s | 78.8 s | 10 s | 32 s |

HCM 6th Signalized Intersection Summary

3: Crystal Street & Alameda Avenue

2021 Background PM.syn

























03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |  |    | |  |  | |   |  | |
| Traffic Volume (veh/h) | 120 | 1411 | 168 | 166 | 1454 | 84 | 96 | 54 | 159 | 60 | 27 | 66 |
| Future Volume (veh/h) | 120 | 1411 | 168 | 166 | 1454 | 84 | 96 | 54 | 159 | 60 | 27 | 66 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 129 | 1517 | 181 | 177 | 1547 | 89 | 108 | 61 | 179 | 76 | 34 | 84 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 585 | 2849 | 884 | 326 | 2876 | 165 | 317 | 87 | 256 | 394 | 86 | 214 |
| Arrive On Green | 0.08 | 1.00 | 1.00 | 0.12 | 1.00 | 1.00 | 0.06 | 0.21 | 0.21 | 0.04 | 0.18 | 0.18 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 1781 | 4939 | 284 | 1781 | 419 | 1230 | 3456 | 478 | 1180 |
| Grp Volume(v), veh/h | 129 | 1517 | 181 | 177 | 1066 | 570 | 108 | 0 | 240 | 76 | 0 | 118 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1781 | 1702 | 1819 | 1781 | 0 | 1649 | 1728 | 0 | 1658 |
| Q Serve(g_s), s | 1.9 | 0.0 | 0.0 | 5.8 | 0.0 | 0.0 | 6.4 | 0.0 | 17.8 | 2.2 | 0.0 | 8.3 |
| Cycle Q Clear(g_c), s | 1.9 | 0.0 | 0.0 | 5.8 | 0.0 | 0.0 | 6.4 | 0.0 | 17.8 | 2.2 | 0.0 | 8.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 0.75 | 1.00 | | 0.71 |
| Lane Grp Cap(c), veh/h | 585 | 2849 | 884 | 326 | 1982 | 1059 | 317 | 0 | 344 | 394 | 0 | 300 |
| V/C Ratio(X) | 0.22 | 0.53 | 0.20 | 0.54 | 0.54 | 0.54 | 0.34 | 0.00 | 0.70 | 0.19 | 0.00 | 0.39 |
| Avail Cap(c_a), veh/h | 631 | 2849 | 884 | 492 | 1982 | 1059 | 336 | 0 | 344 | 416 | 0 | 300 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.63 | 0.63 | 0.63 | 0.81 | 0.81 | 0.81 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.5 | 0.0 | 0.0 | 9.9 | 0.0 | 0.0 | 40.5 | 0.0 | 48.4 | 39.8 | 0.0 | 47.7 |
| Incr Delay (d2), s/veh | 0.1 | 0.5 | 0.3 | 1.1 | 0.9 | 1.6 | 0.6 | 0.0 | 11.2 | 0.2 | 0.0 | 3.8 |
| 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(95%),veh/ln | 1.2 | 0.2 | 0.1 | 3.7 | 0.4 | 0.8 | 5.3 | 0.0 | 13.2 | 1.8 | 0.0 | 6.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.6 | 0.5 | 0.3 | 11.1 | 0.9 | 1.6 | 41.1 | 0.0 | 59.6 | 40.1 | 0.0 | 51.5 |
| LnGrp LOS | A | A | A | B | A | A | D | A | E | D | A | D |
| Approach Vol, veh/h | | 1827 | | | 1813 | | | 348 | | | 194 | |
| Approach Delay, s/veh | | 1.1 | | | 2.1 | | | 53.9 | | | 47.0 | |
| Approach LOS | | A | | | A | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.7 | 78.2 | 12.8 | 28.4 | 9.5 | 81.4 | 9.2 | 32.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 20.5 | 60.5 | 9.7 | 23.3 | 6.7 | 74.3 | 5.5 | 27.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 7.8 | 2.0 | 8.4 | 10.3 | 3.9 | 2.0 | 4.2 | 19.8 | | | | |
| Green Ext Time (p_c), s | 0.4 | 17.5 | 0.0 | 0.5 | 0.1 | 17.4 | 0.0 | 0.9 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 8.0 | | | | | | | | | |
| HCM 6th LOS | | | A | | | | | | | | | |

Timings 3: Crystal Street & Alameda Avenue

2021 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |   |    |  |  |    |  |  |   |  |
| Traffic Volume (vph) | 120 | 1411 | 192 | 190 | 1454 | 114 | 59 | 60 | 33 |
| Future Volume (vph) | 120 | 1411 | 192 | 190 | 1454 | 114 | 59 | 60 | 33 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | D.P+P | NA | D.P+P | NA |
| Protected Phases | 5 | 2 | | 1 | 6 | 3 | 8 | 7 | 4 |
| Permitted Phases | 6 | | 2 | 2 | | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 3 | 8 | 7 | 4 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 11.0 | 55.0 | 55.0 | 20.0 | 64.0 | 34.0 | 47.0 | 10.0 | 23.0 |
| Total Split (%) | 8.3% | 41.7% | 41.7% | 15.2% | 48.5% | 25.8% | 35.6% | 7.6% | 17.4% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | Max | None | Max |
| Act Effect Green (s) | 66.0 | 51.9 | 51.9 | 66.0 | 59.5 | 48.0 | 44.5 | 48.9 | 36.3 |
| Actuated g/C Ratio | 0.50 | 0.39 | 0.39 | 0.50 | 0.45 | 0.36 | 0.34 | 0.37 | 0.28 |
| v/c Ratio | 0.46 | 0.76 | 0.28 | 0.82 | 0.72 | 0.27 | 0.42 | 0.11 | 0.25 |
| Control Delay | 31.9 | 10.1 | 0.7 | 83.4 | 14.2 | 27.6 | 20.6 | 25.0 | 21.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 31.9 | 10.1 | 0.7 | 83.4 | 14.3 | 27.6 | 20.6 | 25.0 | 21.2 |
| LOS | C | B | A | F | B | C | C | C | C |
| Approach Delay | | 10.6 | | | 21.9 | | 22.9 | | 22.7 |
| Approach LOS | | B | | | C | | C | | C |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 58.5 (44%), Referenced to phase 2:EBWB and 6:EBWB, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 17.1

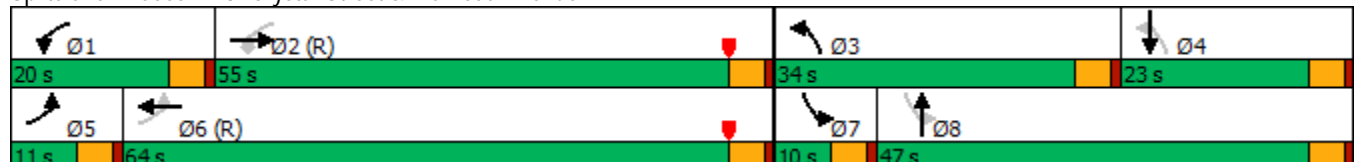
Intersection LOS: B

Intersection Capacity Utilization 71.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 3: Crystal Street & Alameda Avenue






























HCM 6th Signalized Intersection Summary

3: Crystal Street & Alameda Avenue

2021 Total PM.syn


























03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |   |    |  |  |    | |  |  | |   |  | |
| Traffic Volume (veh/h) | 120 | 1411 | 192 | 190 | 1454 | 84 | 114 | 59 | 177 | 60 | 33 | 66 |
| Future Volume (veh/h) | 120 | 1411 | 192 | 190 | 1454 | 84 | 114 | 59 | 177 | 60 | 33 | 66 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 129 | 1517 | 206 | 202 | 1547 | 89 | 128 | 66 | 199 | 76 | 42 | 84 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.89 | 0.89 | 0.89 | 0.79 | 0.79 | 0.79 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 486 | 2162 | 671 | 290 | 2314 | 133 | 468 | 132 | 398 | 647 | 162 | 324 |
| Arrive On Green | 0.08 | 0.85 | 0.85 | 0.17 | 0.94 | 0.94 | 0.07 | 0.32 | 0.32 | 0.04 | 0.29 | 0.29 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 1781 | 4939 | 284 | 1781 | 410 | 1237 | 3456 | 557 | 1113 |
| Grp Volume(v), veh/h | 129 | 1517 | 206 | 202 | 1066 | 570 | 128 | 0 | 265 | 76 | 0 | 126 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1781 | 1702 | 1819 | 1781 | 0 | 1648 | 1728 | 0 | 1670 |
| Q Serve(g_s), s | 2.5 | 14.8 | 3.6 | 8.7 | 7.0 | 7.0 | 6.6 | 0.0 | 17.2 | 1.9 | 0.0 | 7.6 |
| Cycle Q Clear(g_c), s | 2.5 | 14.8 | 3.6 | 8.7 | 7.0 | 7.0 | 6.6 | 0.0 | 17.2 | 1.9 | 0.0 | 7.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.16 | 1.00 | | 0.75 | 1.00 | | 0.67 |
| Lane Grp Cap(c), veh/h | 486 | 2162 | 671 | 290 | 1595 | 852 | 468 | 0 | 530 | 647 | 0 | 486 |
| V/C Ratio(X) | 0.27 | 0.70 | 0.31 | 0.70 | 0.67 | 0.67 | 0.27 | 0.00 | 0.50 | 0.12 | 0.00 | 0.26 |
| Avail Cap(c_a), veh/h | 527 | 2162 | 671 | 352 | 1595 | 852 | 747 | 0 | 530 | 668 | 0 | 486 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.56 | 0.56 | 0.56 | 0.79 | 0.79 | 0.79 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.3 | 7.0 | 6.1 | 18.8 | 2.4 | 2.4 | 29.6 | 0.0 | 36.2 | 29.0 | 0.0 | 35.9 |
| Incr Delay (d2), s/veh | 0.2 | 1.1 | 0.7 | 3.7 | 1.8 | 3.3 | 0.3 | 0.0 | 3.3 | 0.1 | 0.0 | 1.3 |
| 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(95%),veh/ln | 1.7 | 4.9 | 2.1 | 6.0 | 2.6 | 3.4 | 5.3 | 0.0 | 12.0 | 1.5 | 0.0 | 6.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 16.5 | 8.0 | 6.8 | 22.4 | 4.2 | 5.7 | 29.9 | 0.0 | 39.5 | 29.1 | 0.0 | 37.2 |
| LnGrp LOS | B | A | A | C | A | A | C | A | D | C | A | D |
| Approach Vol, veh/h | 1852 | | | | | 1838 | | 393 | | 202 | | |
| Approach Delay, s/veh | 8.5 | | | | | 6.7 | | 36.4 | | 34.1 | | |
| Approach LOS | A | | | | | A | | D | | C | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 15.4 | 60.4 | 13.3 | 42.9 | 9.5 | 66.4 | 9.2 | 47.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 15.5 | 50.5 | 29.5 | 18.5 | 6.5 | 59.5 | 5.5 | 42.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 10.7 | 16.8 | 8.6 | 9.6 | 4.5 | 9.0 | 3.9 | 19.2 | | | | |
| Green Ext Time (p_c), s | 0.2 | 14.9 | 0.3 | 0.4 | 0.1 | 16.4 | 0.0 | 1.8 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 11.5 | | | | | | | | | | | |
| HCM 6th LOS | B | | | | | | | | | | | |

Timings 3: Crystal Street & Alameda Avenue

2040 Background PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |   |    |  |  |    |  |  |    |  |
| Traffic Volume (vph) | 120 | 2073 | 168 | 166 | 2133 | 96 | 54 | 60 | 27 |
| Future Volume (vph) | 120 | 2073 | 168 | 166 | 2133 | 96 | 54 | 60 | 27 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | D.P+P | NA | D.P+P | NA |
| Protected Phases | 5 | 2 | | 1 | 6 | 3 | 8 | 7 | 4 |
| Permitted Phases | 6 | | 2 | 2 | | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 3 | 8 | 7 | 4 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 11.7 | 70.7 | 70.7 | 20.0 | 79.0 | 17.7 | 31.3 | 10.0 | 23.6 |
| Total Split (%) | 8.9% | 53.6% | 53.6% | 15.2% | 59.8% | 13.4% | 23.7% | 7.6% | 17.9% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | Max | None | Max |
| Act Effect Green (s) | 81.7 | 68.8 | 68.8 | 81.7 | 74.8 | 32.3 | 28.8 | 33.2 | 21.3 |
| Actuated g/C Ratio | 0.62 | 0.52 | 0.52 | 0.62 | 0.57 | 0.24 | 0.22 | 0.25 | 0.16 |
| v/c Ratio | 0.44 | 0.84 | 0.20 | 0.77 | 0.82 | 0.31 | 0.53 | 0.15 | 0.31 |
| Control Delay | 28.9 | 5.8 | 0.1 | 61.3 | 10.6 | 39.4 | 31.1 | 36.0 | 20.6 |
| Queue Delay | 0.0 | 0.3 | 0.0 | 0.0 | 6.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 28.9 | 6.1 | 0.1 | 61.3 | 17.0 | 39.4 | 31.1 | 36.0 | 20.7 |
| LOS | C | A | A | E | B | D | C | D | C |
| Approach Delay | | 6.8 | | | 20.1 | | 33.7 | | 26.7 |
| Approach LOS | | A | | | C | | C | | C |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 66.2 (50%), Referenced to phase 2:EBWB and 6:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 15.1

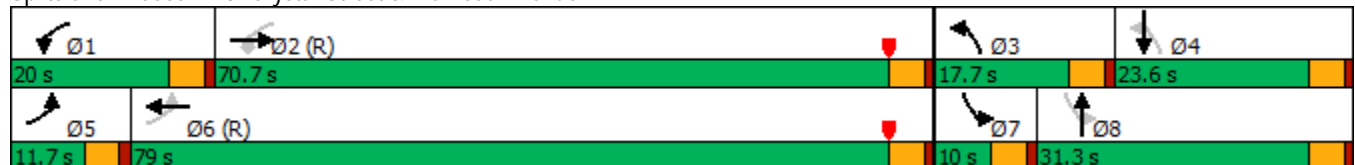
Intersection LOS: B

Intersection Capacity Utilization 81.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Crystal Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

3: Crystal Street & Alameda Avenue

2040 Background PM.syn

























03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 120 | 2073 | 168 | 166 | 2133 | 84 | 96 | 54 | 159 | 60 | 27 | 66 |
| Future Volume (veh/h) | 120 | 2073 | 168 | 166 | 2133 | 84 | 96 | 54 | 159 | 60 | 27 | 66 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 129 | 2229 | 181 | 177 | 2269 | 89 | 104 | 59 | 173 | 65 | 29 | 72 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 412 | 2889 | 897 | 243 | 2968 | 116 | 323 | 85 | 250 | 390 | 84 | 208 |
| Arrive On Green | 0.08 | 1.00 | 1.00 | 0.12 | 1.00 | 1.00 | 0.06 | 0.20 | 0.20 | 0.03 | 0.18 | 0.18 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 1781 | 5042 | 197 | 1781 | 419 | 1230 | 3456 | 476 | 1182 |
| Grp Volume(v), veh/h | 129 | 2229 | 181 | 177 | 1528 | 830 | 104 | 0 | 232 | 65 | 0 | 101 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1781 | 1702 | 1835 | 1781 | 0 | 1649 | 1728 | 0 | 1658 |
| Q Serve(g_s), s | 1.9 | 0.0 | 0.0 | 5.7 | 0.0 | 0.0 | 6.2 | 0.0 | 17.2 | 1.9 | 0.0 | 7.1 |
| Cycle Q Clear(g_c), s | 1.9 | 0.0 | 0.0 | 5.7 | 0.0 | 0.0 | 6.2 | 0.0 | 17.2 | 1.9 | 0.0 | 7.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.11 | 1.00 | | 0.75 | 1.00 | | 0.71 |
| Lane Grp Cap(c), veh/h | 412 | 2889 | 897 | 243 | 2004 | 1080 | 323 | 0 | 335 | 390 | 0 | 291 |
| V/C Ratio(X) | 0.31 | 0.77 | 0.20 | 0.73 | 0.76 | 0.77 | 0.32 | 0.00 | 0.69 | 0.17 | 0.00 | 0.35 |
| Avail Cap(c_a), veh/h | 470 | 2889 | 897 | 345 | 2004 | 1080 | 391 | 0 | 335 | 415 | 0 | 291 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.12 | 0.12 | 0.12 | 0.43 | 0.43 | 0.43 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 9.2 | 0.0 | 0.0 | 12.3 | 0.0 | 0.0 | 41.0 | 0.0 | 48.8 | 40.3 | 0.0 | 47.8 |
| Incr Delay (d2), s/veh | 0.1 | 0.3 | 0.1 | 2.0 | 1.2 | 2.3 | 0.6 | 0.0 | 11.2 | 0.2 | 0.0 | 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(95%),veh/ln | 1.1 | 0.1 | 0.0 | 3.6 | 0.6 | 1.3 | 5.1 | 0.0 | 12.9 | 1.5 | 0.0 | 5.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 9.3 | 0.3 | 0.1 | 14.2 | 1.2 | 2.3 | 41.5 | 0.0 | 60.0 | 40.5 | 0.0 | 51.0 |
| LnGrp LOS | A | A | A | B | A | A | D | A | E | D | A | D |
| Approach Vol, veh/h | 2539 | | 2535 | | | 336 | | | 166 | | | |
| Approach Delay, s/veh | 0.7 | | 2.5 | | | 54.3 | | | 46.9 | | | |
| Approach LOS | A | | A | | | D | | | D | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 12.5 | 79.2 | 12.6 | 27.7 | 9.5 | 82.2 | 9.0 | 31.3 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 15.5 | 66.2 | 13.2 | 19.1 | 7.2 | 74.5 | 5.5 | 26.8 | | | | |
| Max Q Clear Time (g_c+l1), s | 7.7 | 2.0 | 8.2 | 9.1 | 3.9 | 2.0 | 3.9 | 19.2 | | | | |
| Green Ext Time (p_c), s | 0.3 | 35.5 | 0.1 | 0.3 | 0.1 | 36.7 | 0.0 | 0.8 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 6.1 | | | | | | | | | | | |
| HCM 6th LOS | A | | | | | | | | | | | |

Timings 3: Crystal Street & Alameda Avenue

2040 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
| Lane Configurations |   |    |  |  |    |  |  |   |  |
| Traffic Volume (vph) | 120 | 2073 | 192 | 190 | 2133 | 114 | 59 | 60 | 33 |
| Future Volume (vph) | 120 | 2073 | 192 | 190 | 2133 | 114 | 59 | 60 | 33 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | D.P+P | NA | D.P+P | NA |
| Protected Phases | 5 | 2 | | 1 | 6 | 3 | 8 | 7 | 4 |
| Permitted Phases | 6 | | 2 | 2 | | 4 | | 8 | |
| Detector Phase | 5 | 2 | 2 | 1 | 6 | 3 | 8 | 7 | 4 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 11.0 | 57.0 | 57.0 | 20.0 | 66.0 | 32.0 | 45.0 | 10.0 | 23.0 |
| Total Split (%) | 8.3% | 43.2% | 43.2% | 15.2% | 50.0% | 24.2% | 34.1% | 7.6% | 17.4% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | None | Max | None | Max |
| Act Effect Green (s) | 68.0 | 54.0 | 54.0 | 68.0 | 61.5 | 46.0 | 42.5 | 46.9 | 34.3 |
| Actuated g/C Ratio | 0.52 | 0.41 | 0.41 | 0.52 | 0.47 | 0.35 | 0.32 | 0.36 | 0.26 |
| v/c Ratio | 0.46 | 1.07 | 0.28 | 0.82 | 1.00 | 0.26 | 0.42 | 0.10 | 0.22 |
| Control Delay | 27.7 | 52.5 | 1.2 | 68.1 | 32.2 | 28.9 | 21.3 | 26.2 | 19.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 37.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 27.7 | 52.5 | 1.2 | 68.1 | 70.1 | 28.9 | 21.3 | 26.2 | 19.6 |
| LOS | C | D | A | E | E | C | C | C | B |
| Approach Delay | | 47.2 | | | 69.9 | | 23.8 | | 22.1 |
| Approach LOS | | D | | | E | | C | | C |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 59.5 (45%), Referenced to phase 2:EBWB and 6:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 55.1

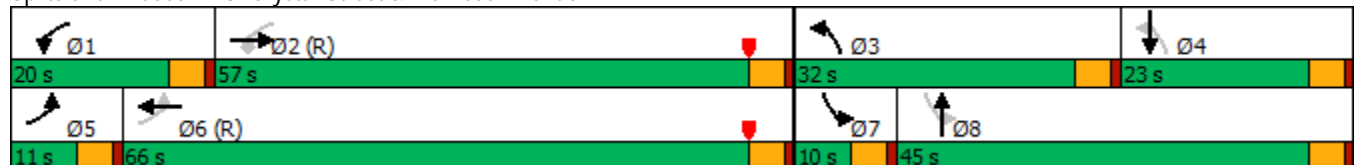
Intersection LOS: E

Intersection Capacity Utilization 83.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Crystal Street & Alameda Avenue



























HCM 6th Signalized Intersection Summary

3: Crystal Street & Alameda Avenue

2040 Total PM.syn

03/12/2020


































| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 120 | 2073 | 192 | 190 | 2133 | 84 | 114 | 59 | 177 | 60 | 33 | 66 |
| Future Volume (veh/h) | 120 | 2073 | 192 | 190 | 2133 | 84 | 114 | 59 | 177 | 60 | 33 | 66 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 129 | 2229 | 206 | 202 | 2269 | 89 | 124 | 64 | 192 | 65 | 36 | 72 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.94 | 0.94 | 0.94 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 339 | 2181 | 677 | 224 | 2445 | 95 | 461 | 126 | 379 | 619 | 153 | 306 |
| Arrive On Green | 0.08 | 0.85 | 0.85 | 0.19 | 0.97 | 0.97 | 0.07 | 0.31 | 0.31 | 0.03 | 0.28 | 0.28 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 1781 | 5042 | 197 | 1781 | 412 | 1236 | 3456 | 557 | 1113 |
| Grp Volume(v), veh/h | 129 | 2229 | 206 | 202 | 1528 | 830 | 124 | 0 | 256 | 65 | 0 | 108 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1781 | 1702 | 1835 | 1781 | 0 | 1648 | 1728 | 0 | 1670 |
| Q Serve(g_s), s | 2.4 | 56.4 | 3.4 | 10.4 | 17.5 | 18.9 | 6.5 | 0.0 | 16.8 | 1.7 | 0.0 | 6.6 |
| Cycle Q Clear(g_c), s | 2.4 | 56.4 | 3.4 | 10.4 | 17.5 | 18.9 | 6.5 | 0.0 | 16.8 | 1.7 | 0.0 | 6.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.11 | 1.00 | | 0.75 | 1.00 | | 0.67 |
| Lane Grp Cap(c), veh/h | 339 | 2181 | 677 | 224 | 1651 | 890 | 461 | 0 | 506 | 619 | 0 | 460 |
| V/C Ratio(X) | 0.38 | 1.02 | 0.30 | 0.90 | 0.93 | 0.93 | 0.27 | 0.00 | 0.51 | 0.11 | 0.00 | 0.23 |
| Avail Cap(c_a), veh/h | 380 | 2181 | 677 | 264 | 1651 | 890 | 715 | 0 | 506 | 644 | 0 | 460 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.09 | 0.09 | 0.09 | 0.41 | 0.41 | 0.41 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.3 | 9.6 | 5.8 | 34.1 | 1.3 | 1.3 | 31.0 | 0.0 | 37.5 | 30.3 | 0.0 | 37.1 |
| Incr Delay (d2), s/veh | 0.1 | 12.7 | 0.1 | 14.3 | 4.9 | 8.9 | 0.3 | 0.0 | 3.6 | 0.1 | 0.0 | 1.2 |
| 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(95%),veh/ln | 1.4 | 7.6 | 1.5 | 9.4 | 3.3 | 4.8 | 5.2 | 0.0 | 11.9 | 1.3 | 0.0 | 5.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.3 | 22.3 | 5.9 | 48.4 | 6.2 | 10.2 | 31.3 | 0.0 | 41.1 | 30.4 | 0.0 | 38.3 |
| LnGrp LOS | B | F | A | D | A | B | C | A | D | C | A | D |
| Approach Vol, veh/h | 2564 | | 2560 | | | | 380 | | 173 | | | |
| Approach Delay, s/veh | 20.7 | | 10.8 | | | | 37.9 | | 35.3 | | | |
| Approach LOS | C | | B | | | | D | | D | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 17.1 | 60.9 | 13.2 | 40.8 | 9.5 | 68.5 | 9.0 | 45.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 15.5 | 52.5 | 27.5 | 18.5 | 6.5 | 61.5 | 5.5 | 40.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 12.4 | 58.4 | 8.5 | 8.6 | 4.4 | 20.9 | 3.7 | 18.8 | | | | |
| Green Ext Time (p_c), s | 0.2 | 0.0 | 0.3 | 0.3 | 0.1 | 26.6 | 0.0 | 1.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 17.8 | | | | | | | | | |
| HCM 6th LOS | | | B | | | | | | | | | |

Timings

4: Sable Boulevard & Alameda Avenue

2020 Existing PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 125 | 1304 | 194 | 71 | 1328 | 197 | 154 | 320 | 40 | 309 | 469 | 128 |
| Future Volume (vph) | 125 | 1304 | 194 | 71 | 1328 | 197 | 154 | 320 | 40 | 309 | 469 | 128 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | Prot | D.P+P | NA | Perm | D.P+P | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 21.0 | 73.0 | 73.0 | 10.0 | 62.0 | 62.0 | 13.0 | 30.0 | 30.0 | 19.0 | 36.0 | 36.0 |
| Total Split (%) | 15.9% | 55.3% | 55.3% | 7.6% | 47.0% | 47.0% | 9.8% | 22.7% | 22.7% | 14.4% | 27.3% | 27.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 74.0 | 70.5 | 70.5 | 74.9 | 63.3 | 63.3 | 40.0 | 26.4 | 26.4 | 40.0 | 31.7 | 31.7 |
| Actuated g/C Ratio | 0.56 | 0.53 | 0.53 | 0.57 | 0.48 | 0.48 | 0.30 | 0.20 | 0.20 | 0.30 | 0.24 | 0.24 |
| v/c Ratio | 0.57 | 0.53 | 0.23 | 0.21 | 0.59 | 0.25 | 0.37 | 0.50 | 0.10 | 0.53 | 0.59 | 0.29 |
| Control Delay | 38.5 | 11.2 | 1.3 | 12.5 | 26.6 | 6.8 | 33.1 | 50.1 | 0.5 | 35.6 | 47.9 | 9.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.5 | 11.2 | 1.3 | 12.5 | 26.6 | 6.8 | 33.1 | 50.1 | 0.5 | 35.6 | 47.9 | 9.2 |
| LOS | D | B | A | B | C | A | C | D | A | D | D | A |
| Approach Delay | | 12.1 | | | 23.6 | | | 41.2 | | | 38.2 | |
| Approach LOS | | B | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 57.5 (44%), Referenced to phase 4:EBWB and 8:EBWB, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 24.3

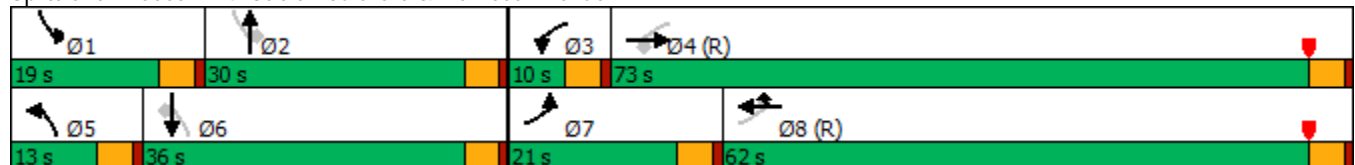
Intersection LOS: C

Intersection Capacity Utilization 65.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Sable Boulevard & Alameda Avenue




































HCM 6th Signalized Intersection Summary

4: Sable Boulevard & Alameda Avenue

2020 Existing PM.syn

03/12/2020


































| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (veh/h) | 125 | 1304 | 194 | 71 | 1328 | 197 | 154 | 320 | 40 | 309 | 469 | 128 |
| Future Volume (veh/h) | 125 | 1304 | 194 | 71 | 1328 | 197 | 154 | 320 | 40 | 309 | 469 | 128 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 137 | 1433 | 125 | 77 | 1443 | 214 | 171 | 356 | 22 | 332 | 504 | 73 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 248 | 2741 | 851 | 577 | 2652 | 823 | 474 | 705 | 314 | 643 | 848 | 378 |
| Arrive On Green | 0.11 | 1.00 | 1.00 | 0.04 | 0.52 | 0.52 | 0.05 | 0.20 | 0.20 | 0.09 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 3554 | 1585 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 137 | 1433 | 125 | 77 | 1443 | 214 | 171 | 356 | 22 | 332 | 504 | 73 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1777 | 1585 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 4.8 | 0.0 | 0.0 | 1.3 | 25.0 | 9.9 | 4.9 | 11.8 | 1.5 | 9.9 | 16.6 | 4.9 |
| Cycle Q Clear(g_c), s | 4.8 | 0.0 | 0.0 | 1.3 | 25.0 | 9.9 | 4.9 | 11.8 | 1.5 | 9.9 | 16.6 | 4.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 248 | 2741 | 851 | 577 | 2652 | 823 | 474 | 705 | 314 | 643 | 848 | 378 |
| V/C Ratio(X) | 0.55 | 0.52 | 0.15 | 0.13 | 0.54 | 0.26 | 0.36 | 0.51 | 0.07 | 0.52 | 0.59 | 0.19 |
| Avail Cap(c_a), veh/h | 376 | 2741 | 851 | 598 | 2652 | 823 | 515 | 705 | 314 | 701 | 848 | 378 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 | 0.98 | 0.98 | 0.98 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.3 | 0.0 | 0.0 | 12.3 | 21.3 | 17.6 | 36.1 | 47.1 | 43.0 | 37.3 | 44.6 | 40.1 |
| Incr Delay (d2), s/veh | 1.6 | 0.6 | 0.3 | 0.1 | 0.8 | 0.8 | 0.5 | 2.5 | 0.4 | 0.6 | 3.1 | 1.1 |
| 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(95%),veh/ln | 3.3 | 0.3 | 0.1 | 0.9 | 14.9 | 6.7 | 3.8 | 9.2 | 1.1 | 7.6 | 12.2 | 3.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.9 | 0.6 | 0.3 | 12.4 | 22.1 | 18.4 | 36.5 | 49.7 | 43.4 | 38.0 | 47.6 | 41.2 |
| LnGrp LOS | B | A | A | B | C | B | D | D | D | D | D | D |
| Approach Vol, veh/h | | 1695 | | | 1734 | | | 549 | | | 909 | |
| Approach Delay, s/veh | | 2.0 | | | 21.2 | | | 45.3 | | | 43.6 | |
| Approach LOS | | A | | | C | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 16.8 | 30.7 | 9.2 | 75.4 | 11.4 | 36.0 | 11.5 | 73.1 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 14.5 | 25.5 | 5.5 | 68.5 | 8.5 | 31.5 | 16.5 | 57.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 11.9 | 13.8 | 3.3 | 2.0 | 6.9 | 18.6 | 6.8 | 27.0 | | | | |
| Green Ext Time (p_c), s | 0.3 | 1.7 | 0.0 | 15.7 | 0.1 | 2.8 | 0.2 | 13.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.4 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings

2021 Background PM.syn

4: Sable Boulevard & Alameda Avenue

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 128 | 1330 | 198 | 72 | 1355 | 201 | 157 | 326 | 41 | 315 | 478 | 131 |
| Future Volume (vph) | 128 | 1330 | 198 | 72 | 1355 | 201 | 157 | 326 | 41 | 315 | 478 | 131 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | Prot | D.P+P | NA | Perm | D.P+P | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 21.0 | 73.0 | 73.0 | 10.0 | 62.0 | 62.0 | 13.0 | 31.0 | 31.0 | 18.0 | 36.0 | 36.0 |
| Total Split (%) | 15.9% | 55.3% | 55.3% | 7.6% | 47.0% | 47.0% | 9.8% | 23.5% | 23.5% | 13.6% | 27.3% | 27.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 74.0 | 70.5 | 70.5 | 74.9 | 62.8 | 62.8 | 40.0 | 26.9 | 26.9 | 40.0 | 31.7 | 31.7 |
| Actuated g/C Ratio | 0.56 | 0.53 | 0.53 | 0.57 | 0.48 | 0.48 | 0.30 | 0.20 | 0.20 | 0.30 | 0.24 | 0.24 |
| v/c Ratio | 0.59 | 0.54 | 0.23 | 0.21 | 0.61 | 0.26 | 0.39 | 0.50 | 0.10 | 0.55 | 0.61 | 0.29 |
| Control Delay | 41.6 | 11.4 | 1.8 | 12.6 | 27.3 | 7.2 | 33.3 | 49.5 | 0.5 | 36.0 | 48.2 | 9.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 41.6 | 11.4 | 1.8 | 12.6 | 27.3 | 7.2 | 33.3 | 49.5 | 0.5 | 36.0 | 48.2 | 9.8 |
| LOS | D | B | A | B | C | A | C | D | A | D | D | A |
| Approach Delay | | 12.6 | | | 24.2 | | | 40.8 | | | 38.6 | |
| Approach LOS | | B | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 57.5 (44%), Referenced to phase 4:EBWB and 8:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 24.7

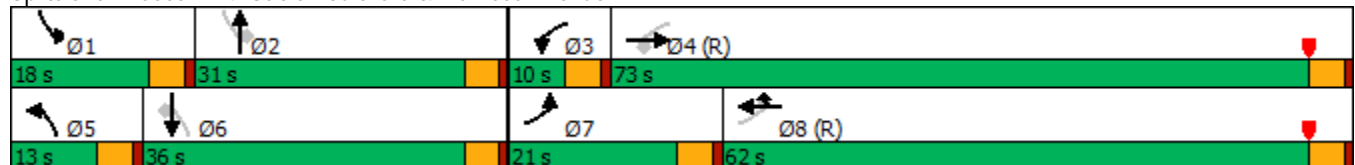
Intersection LOS: C

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Sable Boulevard & Alameda Avenue




































HCM 6th Signalized Intersection Summary

4: Sable Boulevard & Alameda Avenue

2021 Background PM.syn

03/12/2020


































| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (veh/h) | 128 | 1330 | 198 | 72 | 1355 | 201 | 157 | 326 | 41 | 315 | 478 | 131 |
| Future Volume (veh/h) | 128 | 1330 | 198 | 72 | 1355 | 201 | 157 | 326 | 41 | 315 | 478 | 131 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 141 | 1462 | 130 | 78 | 1473 | 218 | 174 | 362 | 24 | 339 | 514 | 76 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 244 | 2726 | 846 | 564 | 2629 | 816 | 473 | 713 | 318 | 645 | 856 | 382 |
| Arrive On Green | 0.11 | 1.00 | 1.00 | 0.04 | 0.51 | 0.51 | 0.05 | 0.20 | 0.20 | 0.09 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 3554 | 1585 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 141 | 1462 | 130 | 78 | 1473 | 218 | 174 | 362 | 24 | 339 | 514 | 76 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1777 | 1585 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 5.0 | 0.0 | 0.0 | 1.3 | 26.0 | 10.2 | 4.9 | 12.0 | 1.6 | 10.1 | 16.9 | 5.0 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 0.0 | 1.3 | 26.0 | 10.2 | 4.9 | 12.0 | 1.6 | 10.1 | 16.9 | 5.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 244 | 2726 | 846 | 564 | 2629 | 816 | 473 | 713 | 318 | 645 | 856 | 382 |
| V/C Ratio(X) | 0.58 | 0.54 | 0.15 | 0.14 | 0.56 | 0.27 | 0.37 | 0.51 | 0.08 | 0.53 | 0.60 | 0.20 |
| Avail Cap(c_a), veh/h | 370 | 2726 | 846 | 585 | 2629 | 816 | 512 | 713 | 318 | 676 | 856 | 382 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.81 | 0.81 | 0.81 | 1.00 | 1.00 | 1.00 | 0.98 | 0.98 | 0.98 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.0 | 0.0 | 0.0 | 12.5 | 21.8 | 18.0 | 35.9 | 46.9 | 42.8 | 37.1 | 44.5 | 39.9 |
| Incr Delay (d2), s/veh | 1.7 | 0.6 | 0.3 | 0.1 | 0.9 | 0.8 | 0.5 | 2.5 | 0.5 | 0.7 | 3.1 | 1.2 |
| 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(95%),veh/ln | 3.4 | 0.3 | 0.1 | 0.9 | 15.4 | 6.9 | 3.8 | 9.3 | 1.2 | 7.8 | 12.4 | 3.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.7 | 0.6 | 0.3 | 12.6 | 22.7 | 18.8 | 36.3 | 49.5 | 43.3 | 37.8 | 47.6 | 41.1 |
| LnGrp LOS | B | A | A | B | C | B | D | D | D | D | D | D |
| Approach Vol, veh/h | | 1733 | | | 1769 | | | 560 | | | 929 | |
| Approach Delay, s/veh | | 2.1 | | | 21.8 | | | 45.1 | | | 43.5 | |
| Approach LOS | | A | | | C | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 16.8 | 31.0 | 9.2 | 75.0 | 11.5 | 36.3 | 11.7 | 72.5 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 13.5 | 26.5 | 5.5 | 68.5 | 8.5 | 31.5 | 16.5 | 57.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 12.1 | 14.0 | 3.3 | 2.0 | 6.9 | 18.9 | 7.0 | 28.0 | | | | |
| Green Ext Time (p_c), s | 0.2 | 1.8 | 0.0 | 16.3 | 0.1 | 2.9 | 0.2 | 13.6 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.6 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings

4: Sable Boulevard & Alameda Avenue

2021 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 137 | 1339 | 198 | 84 | 1367 | 201 | 157 | 326 | 50 | 315 | 478 | 143 |
| Future Volume (vph) | 137 | 1339 | 198 | 84 | 1367 | 201 | 157 | 326 | 50 | 315 | 478 | 143 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | Prot | D.P+P | NA | Perm | D.P+P | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 22.0 | 73.0 | 73.0 | 10.0 | 61.0 | 61.0 | 13.0 | 31.0 | 31.0 | 18.0 | 36.0 | 36.0 |
| Total Split (%) | 16.7% | 55.3% | 55.3% | 7.6% | 46.2% | 46.2% | 9.8% | 23.5% | 23.5% | 13.6% | 27.3% | 27.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 74.0 | 68.5 | 68.5 | 74.0 | 62.0 | 62.0 | 40.0 | 26.9 | 26.9 | 40.0 | 31.7 | 31.7 |
| Actuated g/C Ratio | 0.56 | 0.52 | 0.52 | 0.56 | 0.47 | 0.47 | 0.30 | 0.20 | 0.20 | 0.30 | 0.24 | 0.24 |
| v/c Ratio | 0.62 | 0.56 | 0.24 | 0.26 | 0.62 | 0.26 | 0.39 | 0.50 | 0.12 | 0.55 | 0.61 | 0.32 |
| Control Delay | 48.4 | 12.3 | 2.4 | 13.1 | 28.2 | 7.4 | 33.3 | 49.5 | 0.6 | 36.0 | 48.2 | 9.7 |
| Queue Delay | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.4 | 12.3 | 2.4 | 13.1 | 28.2 | 7.4 | 33.3 | 49.5 | 0.6 | 36.0 | 48.2 | 9.7 |
| LOS | D | B | A | B | C | A | C | D | A | D | D | A |
| Approach Delay | | 14.1 | | | 24.9 | | | 40.1 | | | 38.2 | |
| Approach LOS | | B | | | C | | | D | | | D | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 56.5 (43%), Referenced to phase 4:EBWB and 8:EBWB, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 25.4

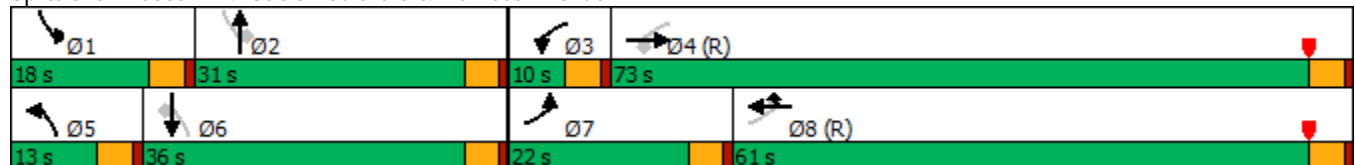
Intersection LOS: C

Intersection Capacity Utilization 67.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Sable Boulevard & Alameda Avenue




































HCM 6th Signalized Intersection Summary

2021 Total PM.syn

4: Sable Boulevard & Alameda Avenue

03/12/2020

























| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (veh/h) | 137 | 1339 | 198 | 84 | 1367 | 201 | 157 | 326 | 50 | 315 | 478 | 143 |
| Future Volume (veh/h) | 137 | 1339 | 198 | 84 | 1367 | 201 | 157 | 326 | 50 | 315 | 478 | 143 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 151 | 1471 | 130 | 91 | 1486 | 218 | 174 | 362 | 34 | 339 | 514 | 89 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.92 | 0.92 | 0.92 | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 247 | 2722 | 845 | 564 | 2612 | 811 | 471 | 713 | 318 | 643 | 856 | 382 |
| Arrive On Green | 0.12 | 1.00 | 1.00 | 0.04 | 0.51 | 0.51 | 0.05 | 0.20 | 0.20 | 0.09 | 0.24 | 0.24 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 3554 | 1585 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 151 | 1471 | 130 | 91 | 1486 | 218 | 174 | 362 | 34 | 339 | 514 | 89 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1777 | 1585 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 5.4 | 0.0 | 0.0 | 1.5 | 26.5 | 10.3 | 4.9 | 12.0 | 2.3 | 10.1 | 16.9 | 6.0 |
| Cycle Q Clear(g_c), s | 5.4 | 0.0 | 0.0 | 1.5 | 26.5 | 10.3 | 4.9 | 12.0 | 2.3 | 10.1 | 16.9 | 6.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 247 | 2722 | 845 | 564 | 2612 | 811 | 471 | 713 | 318 | 643 | 856 | 382 |
| V/C Ratio(X) | 0.61 | 0.54 | 0.15 | 0.16 | 0.57 | 0.27 | 0.37 | 0.51 | 0.11 | 0.53 | 0.60 | 0.23 |
| Avail Cap(c_a), veh/h | 380 | 2722 | 845 | 581 | 2612 | 811 | 510 | 713 | 318 | 674 | 856 | 382 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.61 | 0.61 | 0.61 | 1.00 | 1.00 | 1.00 | 0.97 | 0.97 | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.5 | 0.0 | 0.0 | 12.6 | 22.2 | 18.3 | 35.9 | 46.9 | 43.1 | 37.1 | 44.5 | 40.3 |
| Incr Delay (d2), s/veh | 1.5 | 0.5 | 0.2 | 0.1 | 0.9 | 0.8 | 0.5 | 2.5 | 0.7 | 0.7 | 3.1 | 1.4 |
| 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(95%),veh/ln | 3.6 | 0.2 | 0.1 | 1.1 | 15.7 | 7.0 | 3.8 | 9.3 | 1.7 | 7.8 | 12.4 | 4.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 19.0 | 0.5 | 0.2 | 12.7 | 23.1 | 19.1 | 36.3 | 49.4 | 43.7 | 37.8 | 47.6 | 41.7 |
| LnGrp LOS | B | A | A | B | C | B | D | D | D | D | D | D |
| Approach Vol, veh/h | | 1752 | | | 1795 | | | 570 | | | 942 | |
| Approach Delay, s/veh | | 2.1 | | | 22.1 | | | 45.1 | | | 43.5 | |
| Approach LOS | | A | | | C | | | D | | | D | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 16.8 | 31.0 | 9.3 | 74.9 | 11.5 | 36.3 | 12.2 | 72.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 13.5 | 26.5 | 5.5 | 68.5 | 8.5 | 31.5 | 17.5 | 56.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 12.1 | 14.0 | 3.5 | 2.0 | 6.9 | 18.9 | 7.4 | 28.5 | | | | |
| Green Ext Time (p_c), s | 0.2 | 1.9 | 0.0 | 16.5 | 0.1 | 2.9 | 0.3 | 13.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.7 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings

2040 Background PM.syn

4: Sable Boulevard & Alameda Avenue

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 186 | 1938 | 288 | 106 | 1973 | 293 | 229 | 476 | 59 | 459 | 697 | 190 |
| Future Volume (vph) | 186 | 1938 | 288 | 106 | 1973 | 293 | 229 | 476 | 59 | 459 | 697 | 190 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | Prot | D.P+P | NA | Perm | D.P+P | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 18.0 | 74.6 | 74.6 | 10.4 | 67.0 | 67.0 | 12.0 | 26.0 | 26.0 | 21.0 | 35.0 | 35.0 |
| Total Split (%) | 13.6% | 56.5% | 56.5% | 7.9% | 50.8% | 50.8% | 9.1% | 19.7% | 19.7% | 15.9% | 26.5% | 26.5% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 76.0 | 70.1 | 70.1 | 76.0 | 63.1 | 63.1 | 38.0 | 21.5 | 21.5 | 38.0 | 30.5 | 30.5 |
| Actuated g/C Ratio | 0.58 | 0.53 | 0.53 | 0.58 | 0.48 | 0.48 | 0.29 | 0.16 | 0.16 | 0.29 | 0.23 | 0.23 |
| v/c Ratio | 0.88 | 0.78 | 0.34 | 0.44 | 0.88 | 0.38 | 0.82 | 0.90 | 0.16 | 0.92 | 0.92 | 0.44 |
| Control Delay | 75.1 | 16.5 | 5.7 | 16.1 | 36.7 | 11.8 | 56.1 | 73.6 | 0.9 | 59.9 | 66.4 | 19.8 |
| Queue Delay | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.1 | 16.8 | 5.7 | 16.1 | 36.7 | 11.8 | 56.1 | 73.6 | 0.9 | 59.9 | 66.4 | 19.8 |
| LOS | E | B | A | B | D | B | E | E | A | E | E | B |
| Approach Delay | | 20.0 | | | 32.7 | | | 62.7 | | | 57.6 | |
| Approach LOS | | B | | | C | | | E | | | E | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 62.5 (47%), Referenced to phase 4:EBWB and 8:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 36.4

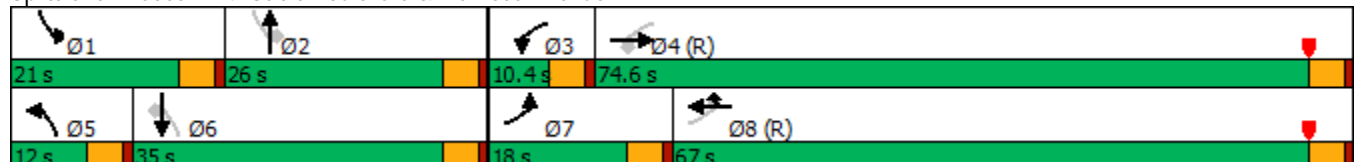
Intersection LOS: D

Intersection Capacity Utilization 89.7%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Sable Boulevard & Alameda Avenue



























HCM 6th Signalized Intersection Summary

4: Sable Boulevard & Alameda Avenue

2040 Background PM.syn

03/12/2020


































| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 186 | 1938 | 288 | 106 | 1973 | 293 | 229 | 476 | 59 | 459 | 697 | 190 |
| Future Volume (veh/h) | 186 | 1938 | 288 | 106 | 1973 | 293 | 229 | 476 | 59 | 459 | 697 | 190 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 202 | 2107 | 226 | 115 | 2145 | 318 | 249 | 517 | 42 | 494 | 749 | 139 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 224 | 2749 | 853 | 400 | 2501 | 776 | 337 | 579 | 258 | 575 | 821 | 366 |
| Arrive On Green | 0.17 | 1.00 | 1.00 | 0.04 | 0.49 | 0.49 | 0.06 | 0.16 | 0.16 | 0.13 | 0.23 | 0.23 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 3554 | 1585 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 202 | 2107 | 226 | 115 | 2145 | 318 | 249 | 517 | 42 | 494 | 749 | 139 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1777 | 1585 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 9.2 | 0.0 | 0.0 | 1.9 | 48.8 | 16.9 | 7.3 | 18.8 | 3.0 | 15.7 | 27.1 | 9.8 |
| Cycle Q Clear(g_c), s | 9.2 | 0.0 | 0.0 | 1.9 | 48.8 | 16.9 | 7.3 | 18.8 | 3.0 | 15.7 | 27.1 | 9.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 224 | 2749 | 853 | 400 | 2501 | 776 | 337 | 579 | 258 | 575 | 821 | 366 |
| V/C Ratio(X) | 0.90 | 0.77 | 0.26 | 0.29 | 0.86 | 0.41 | 0.74 | 0.89 | 0.16 | 0.86 | 0.91 | 0.38 |
| Avail Cap(c_a), veh/h | 253 | 2749 | 853 | 425 | 2501 | 776 | 337 | 579 | 258 | 575 | 821 | 366 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.46 | 0.46 | 0.46 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.9 | 0.0 | 0.0 | 12.3 | 29.6 | 21.5 | 39.4 | 54.1 | 47.5 | 40.7 | 49.4 | 42.8 |
| Incr Delay (d2), s/veh | 16.8 | 1.0 | 0.3 | 0.4 | 4.1 | 1.6 | 8.0 | 18.0 | 1.3 | 12.5 | 16.2 | 3.0 |
| 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(95%),veh/ln | 9.8 | 0.4 | 0.1 | 1.3 | 27.2 | 10.6 | 6.2 | 14.8 | 2.3 | 12.1 | 19.8 | 7.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 48.6 | 1.0 | 0.3 | 12.7 | 33.7 | 23.1 | 47.4 | 72.1 | 48.8 | 53.2 | 65.6 | 45.7 |
| LnGrp LOS | D | A | A | B | C | C | D | E | D | D | E | D |
| Approach Vol, veh/h | 2535 | | 2578 | | | | 808 | | 1382 | | | |
| Approach Delay, s/veh | 4.7 | | 31.5 | | | | 63.3 | | 59.2 | | | |
| Approach LOS | A | | C | | | | E | | E | | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 21.0 | 26.0 | 9.4 | 75.6 | 12.0 | 35.0 | 15.8 | 69.2 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 16.5 | 21.5 | 5.9 | 70.1 | 7.5 | 30.5 | 13.5 | 62.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 17.7 | 20.8 | 3.9 | 2.0 | 9.3 | 29.1 | 11.2 | 50.8 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.1 | 33.6 | 0.0 | 0.8 | 0.1 | 10.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 30.9 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

Timings

4: Sable Boulevard & Alameda Avenue

2040 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |    |  |   |    |  |   |   |  |   |   |  |
| Traffic Volume (vph) | 195 | 1947 | 288 | 118 | 1985 | 293 | 229 | 476 | 68 | 459 | 697 | 202 |
| Future Volume (vph) | 195 | 1947 | 288 | 118 | 1985 | 293 | 229 | 476 | 68 | 459 | 697 | 202 |
| Turn Type | D.P+P | NA | Perm | D.P+P | NA | Prot | D.P+P | NA | Perm | D.P+P | NA | Perm |
| Protected Phases | 7 | 4 | | 3 | 8 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 8 | | 4 | 4 | | | 6 | | 2 | 2 | | 6 |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 | 22.5 |
| Total Split (s) | 19.0 | 75.0 | 75.0 | 11.0 | 67.0 | 67.0 | 12.0 | 26.0 | 26.0 | 20.0 | 34.0 | 34.0 |
| Total Split (%) | 14.4% | 56.8% | 56.8% | 8.3% | 50.8% | 50.8% | 9.1% | 19.7% | 19.7% | 15.2% | 25.8% | 25.8% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | C-Max | C-Max | None | C-Max | C-Max | None | Max | Max | None | Max | Max |
| Act Effect Green (s) | 77.0 | 70.6 | 70.6 | 77.0 | 63.2 | 63.2 | 37.0 | 21.5 | 21.5 | 37.0 | 29.5 | 29.5 |
| Actuated g/C Ratio | 0.58 | 0.53 | 0.53 | 0.58 | 0.48 | 0.48 | 0.28 | 0.16 | 0.16 | 0.28 | 0.22 | 0.22 |
| v/c Ratio | 0.88 | 0.78 | 0.34 | 0.46 | 0.89 | 0.38 | 0.82 | 0.90 | 0.19 | 0.96 | 0.95 | 0.47 |
| Control Delay | 69.2 | 12.9 | 3.0 | 16.9 | 36.9 | 11.8 | 56.8 | 73.6 | 1.1 | 70.0 | 72.1 | 20.7 |
| Queue Delay | 0.0 | 0.3 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.2 | 13.1 | 3.0 | 16.9 | 39.0 | 11.8 | 56.8 | 73.6 | 1.1 | 70.0 | 72.1 | 20.8 |
| LOS | E | B | A | B | D | B | E | E | A | E | E | C |
| Approach Delay | | 16.4 | | | 34.6 | | | 62.2 | | | 63.8 | |
| Approach LOS | | B | | | C | | | E | | | E | |

Intersection Summary

Cycle Length: 132

Actuated Cycle Length: 132

Offset: 62.5 (47%), Referenced to phase 4:EBWB and 8:EBWB, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 37.0

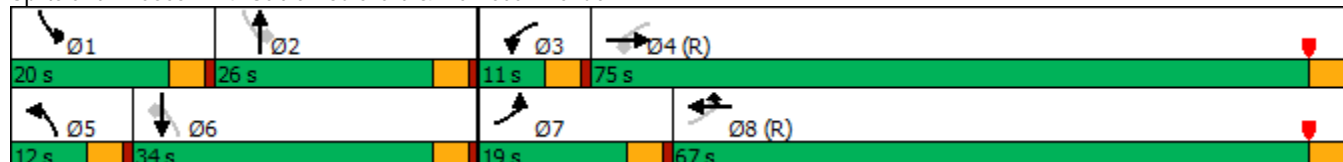
Intersection LOS: D

Intersection Capacity Utilization 90.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 4: Sable Boulevard & Alameda Avenue



























HCM 6th Signalized Intersection Summary

4: Sable Boulevard & Alameda Avenue

2040 Total PM.syn



















03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 195 | 1947 | 288 | 118 | 1985 | 293 | 229 | 476 | 68 | 459 | 697 | 202 |
| Future Volume (veh/h) | 195 | 1947 | 288 | 118 | 1985 | 293 | 229 | 476 | 68 | 459 | 697 | 202 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 212 | 2116 | 226 | 128 | 2158 | 318 | 249 | 517 | 52 | 494 | 749 | 152 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 234 | 2787 | 865 | 401 | 2510 | 779 | 325 | 579 | 258 | 548 | 794 | 354 |
| Arrive On Green | 0.18 | 1.00 | 1.00 | 0.04 | 0.49 | 0.49 | 0.06 | 0.16 | 0.16 | 0.12 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 3456 | 3554 | 1585 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 212 | 2116 | 226 | 128 | 2158 | 318 | 249 | 517 | 52 | 494 | 749 | 152 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1728 | 1777 | 1585 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 10.0 | 0.0 | 0.0 | 2.1 | 49.1 | 16.8 | 7.4 | 18.8 | 3.7 | 15.5 | 27.4 | 10.9 |
| Cycle Q Clear(g_c), s | 10.0 | 0.0 | 0.0 | 2.1 | 49.1 | 16.8 | 7.4 | 18.8 | 3.7 | 15.5 | 27.4 | 10.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 234 | 2787 | 865 | 401 | 2510 | 779 | 325 | 579 | 258 | 548 | 794 | 354 |
| V/C Ratio(X) | 0.91 | 0.76 | 0.26 | 0.32 | 0.86 | 0.41 | 0.77 | 0.89 | 0.20 | 0.90 | 0.94 | 0.43 |
| Avail Cap(c_a), veh/h | 266 | 2787 | 865 | 442 | 2510 | 779 | 325 | 579 | 258 | 548 | 794 | 354 |
| HCM Platoon Ratio | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.09 | 0.09 | 0.09 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 32.4 | 0.0 | 0.0 | 11.9 | 29.5 | 21.3 | 40.1 | 54.1 | 47.8 | 41.9 | 50.4 | 44.0 |
| Incr Delay (d2), s/veh | 4.1 | 0.2 | 0.1 | 0.5 | 4.1 | 1.6 | 10.0 | 18.0 | 1.7 | 18.0 | 20.7 | 3.8 |
| 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(95%),veh/ln | 7.6 | 0.1 | 0.0 | 1.5 | 27.4 | 10.6 | 6.4 | 14.8 | 2.9 | 12.7 | 20.5 | 8.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 36.6 | 0.2 | 0.1 | 12.4 | 33.7 | 22.9 | 50.1 | 72.1 | 49.5 | 59.9 | 71.2 | 47.8 |
| LnGrp LOS | D | A | A | B | C | C | D | E | D | E | E | D |
| Approach Vol, veh/h | | 2554 | | | 2604 | | | 818 | | | 1395 | |
| Approach Delay, s/veh | | 3.2 | | | 31.3 | | | 64.0 | | | 64.6 | |
| Approach LOS | | A | | | C | | | E | | | E | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 20.0 | 26.0 | 9.5 | 76.5 | 12.0 | 34.0 | 16.6 | 69.4 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 15.5 | 21.5 | 6.5 | 70.5 | 7.5 | 29.5 | 14.5 | 62.5 | | | | |
| Max Q Clear Time (g_c+l1), s | 17.5 | 20.8 | 4.1 | 2.0 | 9.4 | 29.4 | 12.0 | 51.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.1 | 33.9 | 0.0 | 0.1 | 0.1 | 9.8 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 31.5 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |

Timings 5: Sable Boulevard & Centrepont Drive

2020 Existing PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 78 | 51 | 68 | 59 | 56 | 391 | 36 | 46 | 614 |
| Future Volume (vph) | 78 | 51 | 68 | 59 | 56 | 391 | 36 | 46 | 614 |
| Turn Type | Prot | NA | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | | 1 | 6 |
| Permitted Phases | | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 16.0 | 28.0 | 11.0 | 23.0 | 12.0 | 41.0 | 41.0 | 10.0 | 39.0 |
| Total Split (%) | 17.8% | 31.1% | 12.2% | 25.6% | 13.3% | 45.6% | 45.6% | 11.1% | 43.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effect Green (s) | 9.5 | 10.5 | 12.7 | 7.5 | 55.7 | 55.7 | 55.7 | 52.1 | 52.1 |
| Actuated g/C Ratio | 0.11 | 0.12 | 0.14 | 0.08 | 0.62 | 0.62 | 0.62 | 0.58 | 0.58 |
| v/c Ratio | 0.49 | 0.60 | 0.37 | 0.34 | 0.15 | 0.20 | 0.04 | 0.08 | 0.37 |
| Control Delay | 46.6 | 25.4 | 31.8 | 27.4 | 11.1 | 9.9 | 0.1 | 12.9 | 12.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.6 | 25.4 | 31.8 | 27.4 | 11.1 | 9.9 | 0.1 | 12.9 | 12.8 |
| LOS | D | C | C | C | B | A | A | B | B |
| Approach Delay | | 32.9 | | 29.2 | | 9.3 | | | 12.8 |
| Approach LOS | | C | | C | | A | | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 24.5 (27%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 16.3

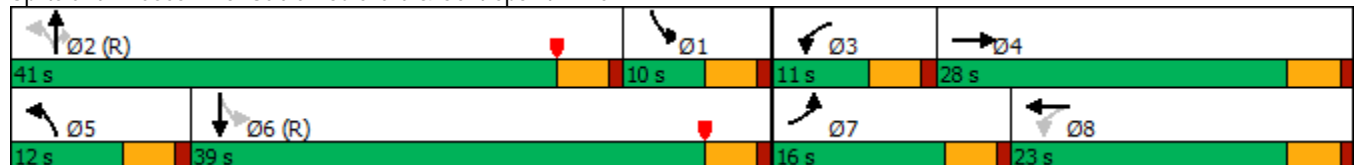
Intersection LOS: B

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Sable Boulevard & Centrepont Drive

























HCM 6th Signalized Intersection Summary

5: Sable Boulevard & Centrepont Drive

2020 Existing PM.syn



















03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 78 | 51 | 92 | 68 | 59 | 37 | 56 | 391 | 36 | 46 | 614 | 88 |
| Future Volume (veh/h) | 78 | 51 | 92 | 68 | 59 | 37 | 56 | 391 | 36 | 46 | 614 | 88 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 92 | 60 | 102 | 76 | 66 | 42 | 63 | 439 | 23 | 49 | 653 | 94 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 118 | 77 | 130 | 207 | 232 | 136 | 302 | 1441 | 643 | 741 | 1814 | 261 |
| Arrive On Green | 0.07 | 0.12 | 0.12 | 0.05 | 0.11 | 0.11 | 0.04 | 0.41 | 0.41 | 0.22 | 0.58 | 0.58 |
| Sat Flow, veh/h | 1781 | 622 | 1058 | 1781 | 2156 | 1264 | 1781 | 3554 | 1585 | 1781 | 3118 | 448 |
| Grp Volume(v), veh/h | 92 | 0 | 162 | 76 | 53 | 55 | 63 | 439 | 23 | 49 | 372 | 375 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1680 | 1781 | 1777 | 1643 | 1781 | 1777 | 1585 | 1781 | 1777 | 1790 |
| Q Serve(g_s), s | 4.6 | 0.0 | 8.4 | 3.4 | 2.5 | 2.8 | 2.1 | 7.5 | 0.6 | 0.0 | 10.0 | 10.0 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 8.4 | 3.4 | 2.5 | 2.8 | 2.1 | 7.5 | 0.6 | 0.0 | 10.0 | 10.0 |
| Prop In Lane | 1.00 | | 0.63 | 1.00 | | 0.77 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 118 | 0 | 207 | 207 | 192 | 177 | 302 | 1441 | 643 | 741 | 1034 | 1041 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.78 | 0.37 | 0.28 | 0.31 | 0.21 | 0.30 | 0.04 | 0.07 | 0.36 | 0.36 |
| Avail Cap(c_a), veh/h | 228 | 0 | 439 | 245 | 365 | 338 | 372 | 1441 | 643 | 741 | 1034 | 1041 |
| 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 | 1.00 | 1.00 | 1.00 | 0.89 | 0.89 | 0.89 |
| Uniform Delay (d), s/veh | 41.4 | 0.0 | 38.3 | 33.6 | 36.9 | 37.1 | 18.9 | 18.1 | 9.0 | 11.4 | 10.0 | 10.0 |
| Incr Delay (d2), s/veh | 10.4 | 0.0 | 6.3 | 1.1 | 0.8 | 1.0 | 0.3 | 0.5 | 0.1 | 0.0 | 0.9 | 0.9 |
| 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(95%),veh/ln | 4.2 | 0.0 | 6.8 | 2.7 | 2.0 | 2.1 | 1.5 | 5.6 | 0.5 | 0.9 | 6.8 | 6.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.7 | 0.0 | 44.6 | 34.6 | 37.7 | 38.0 | 19.3 | 18.7 | 9.1 | 11.5 | 10.8 | 10.8 |
| LnGrp LOS | D | A | D | C | D | D | B | B | A | B | B | B |
| Approach Vol, veh/h | 254 | | | | | 184 | | 525 | | 796 | | |
| Approach Delay, s/veh | 47.2 | | | | | 36.5 | | 18.3 | | 10.9 | | |
| Approach LOS | D | | | | | D | | B | | B | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 24.3 | 41.0 | 9.1 | 15.6 | 8.5 | 56.9 | 10.5 | 14.2 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.5 | 36.5 | 6.5 | 23.5 | 7.5 | 34.5 | 11.5 | 18.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.0 | 9.5 | 5.4 | 10.4 | 4.1 | 12.0 | 6.6 | 4.8 | | | | |
| Green Ext Time (p_c), s | 0.0 | 3.1 | 0.0 | 0.7 | 0.0 | 4.9 | 0.1 | 0.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 21.0 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |
| Notes | | | | | | | | | | | | |

Timings 5: Sable Boulevard & Centrepont Drive

2021 Background PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|--|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 78 | 51 | 69 | 59 | 56 | 399 | 37 | 47 | 626 |
| Future Volume (vph) | 78 | 51 | 69 | 59 | 56 | 399 | 37 | 47 | 626 |
| Turn Type | Prot | NA | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | | 1 | 6 |
| Permitted Phases | | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 16.0 | 28.0 | 11.0 | 23.0 | 12.0 | 41.0 | 41.0 | 10.0 | 39.0 |
| Total Split (%) | 17.8% | 31.1% | 12.2% | 25.6% | 13.3% | 45.6% | 45.6% | 11.1% | 43.3% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effect Green (s) | 9.5 | 10.5 | 12.7 | 7.5 | 55.7 | 55.7 | 55.7 | 52.1 | 52.1 |
| Actuated g/C Ratio | 0.11 | 0.12 | 0.14 | 0.08 | 0.62 | 0.62 | 0.62 | 0.58 | 0.58 |
| v/c Ratio | 0.49 | 0.60 | 0.38 | 0.35 | 0.15 | 0.20 | 0.04 | 0.09 | 0.38 |
| Control Delay | 46.6 | 25.4 | 32.0 | 27.3 | 11.2 | 9.9 | 0.1 | 12.9 | 12.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.6 | 25.4 | 32.0 | 27.3 | 11.2 | 9.9 | 0.1 | 12.9 | 12.8 |
| LOS | D | C | C | C | B | A | A | B | B |
| Approach Delay | | 32.9 | | 29.3 | | 9.3 | | | 12.8 |
| Approach LOS | | C | | C | | A | | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 24.5 (27%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 16.3

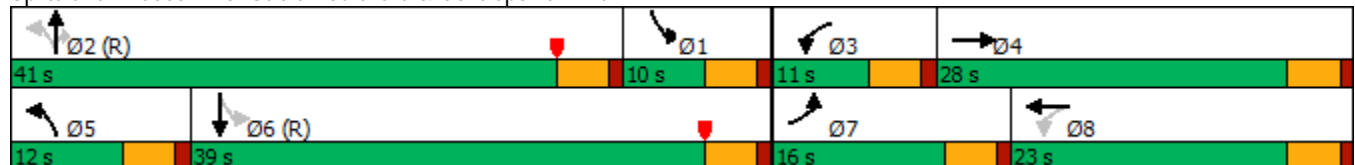
Intersection LOS: B

Intersection Capacity Utilization 51.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Sable Boulevard & Centrepont Drive

























HCM 6th Signalized Intersection Summary

5: Sable Boulevard & Centrepoint Drive

2021 Background PM.syn



















03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 78 | 51 | 92 | 69 | 59 | 38 | 56 | 399 | 37 | 47 | 626 | 88 |
| Future Volume (veh/h) | 78 | 51 | 92 | 69 | 59 | 38 | 56 | 399 | 37 | 47 | 626 | 88 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 92 | 60 | 102 | 78 | 66 | 43 | 63 | 448 | 25 | 50 | 666 | 94 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 118 | 77 | 130 | 209 | 233 | 140 | 298 | 1441 | 643 | 736 | 1815 | 256 |
| Arrive On Green | 0.07 | 0.12 | 0.12 | 0.05 | 0.11 | 0.11 | 0.04 | 0.41 | 0.41 | 0.22 | 0.58 | 0.58 |
| Sat Flow, veh/h | 1781 | 622 | 1058 | 1781 | 2137 | 1280 | 1781 | 3554 | 1585 | 1781 | 3127 | 441 |
| Grp Volume(v), veh/h | 92 | 0 | 162 | 78 | 54 | 55 | 63 | 448 | 25 | 50 | 378 | 382 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1680 | 1781 | 1777 | 1640 | 1781 | 1777 | 1585 | 1781 | 1777 | 1791 |
| Q Serve(g_s), s | 4.6 | 0.0 | 8.4 | 3.5 | 2.5 | 2.8 | 2.1 | 7.7 | 0.6 | 0.0 | 10.2 | 10.2 |
| Cycle Q Clear(g_c), s | 4.6 | 0.0 | 8.4 | 3.5 | 2.5 | 2.8 | 2.1 | 7.7 | 0.6 | 0.0 | 10.2 | 10.2 |
| Prop In Lane | 1.00 | | 0.63 | 1.00 | | 0.78 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 118 | 0 | 207 | 209 | 194 | 179 | 298 | 1441 | 643 | 736 | 1031 | 1040 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.78 | 0.37 | 0.28 | 0.31 | 0.21 | 0.31 | 0.04 | 0.07 | 0.37 | 0.37 |
| Avail Cap(c_a), veh/h | 228 | 0 | 439 | 245 | 365 | 337 | 368 | 1441 | 643 | 736 | 1031 | 1040 |
| 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 | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 | 0.88 |
| Uniform Delay (d), s/veh | 41.4 | 0.0 | 38.3 | 33.4 | 36.8 | 37.0 | 19.0 | 18.2 | 8.9 | 11.5 | 10.1 | 10.1 |
| Incr Delay (d2), s/veh | 10.4 | 0.0 | 6.3 | 1.1 | 0.8 | 1.0 | 0.3 | 0.6 | 0.1 | 0.0 | 0.9 | 0.9 |
| 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(95%),veh/ln | 4.2 | 0.0 | 6.8 | 2.8 | 2.0 | 2.1 | 1.5 | 5.7 | 0.6 | 0.9 | 7.0 | 7.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.7 | 0.0 | 44.6 | 34.5 | 37.6 | 37.9 | 19.3 | 18.8 | 9.1 | 11.5 | 10.9 | 10.9 |
| LnGrp LOS | D | A | D | C | D | D | B | B | A | B | B | B |
| Approach Vol, veh/h | | 254 | | | 187 | | | 536 | | | 810 | |
| Approach Delay, s/veh | | 47.2 | | | 36.4 | | | 18.4 | | | 11.0 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 24.2 | 41.0 | 9.2 | 15.6 | 8.5 | 56.7 | 10.5 | 14.3 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.5 | 36.5 | 6.5 | 23.5 | 7.5 | 34.5 | 11.5 | 18.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.0 | 9.7 | 5.5 | 10.4 | 4.1 | 12.2 | 6.6 | 4.8 | | | | |
| Green Ext Time (p_c), s | 0.0 | 3.2 | 0.0 | 0.7 | 0.0 | 5.0 | 0.1 | 0.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.0 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved pedestrian interval to be less than phase max green. | | | | | | | | | | | | |

Timings
5: Sable Boulevard & Centrepont Drive

2021 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 87 | 56 | 69 | 65 | 74 | 399 | 37 | 47 | 626 |
| Future Volume (vph) | 87 | 56 | 69 | 65 | 74 | 399 | 37 | 47 | 626 |
| Turn Type | Prot | NA | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | | 1 | 6 |
| Permitted Phases | | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 17.0 | 29.0 | 11.0 | 23.0 | 12.0 | 40.0 | 40.0 | 10.0 | 38.0 |
| Total Split (%) | 18.9% | 32.2% | 12.2% | 25.6% | 13.3% | 44.4% | 44.4% | 11.1% | 42.2% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effect Green (s) | 10.1 | 11.2 | 12.9 | 7.6 | 55.0 | 55.0 | 55.0 | 50.9 | 50.9 |
| Actuated g/C Ratio | 0.11 | 0.12 | 0.14 | 0.08 | 0.61 | 0.61 | 0.61 | 0.57 | 0.57 |
| v/c Ratio | 0.52 | 0.64 | 0.40 | 0.36 | 0.20 | 0.21 | 0.04 | 0.09 | 0.39 |
| Control Delay | 46.6 | 26.9 | 31.9 | 27.8 | 11.9 | 10.4 | 0.1 | 14.0 | 13.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.6 | 26.9 | 31.9 | 27.8 | 11.9 | 10.4 | 0.1 | 14.0 | 13.8 |
| LOS | D | C | C | C | B | B | A | B | B |
| Approach Delay | | 33.7 | | 29.5 | | 9.8 | | | 13.8 |
| Approach LOS | | C | | C | | A | | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 23.5 (26%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 17.3

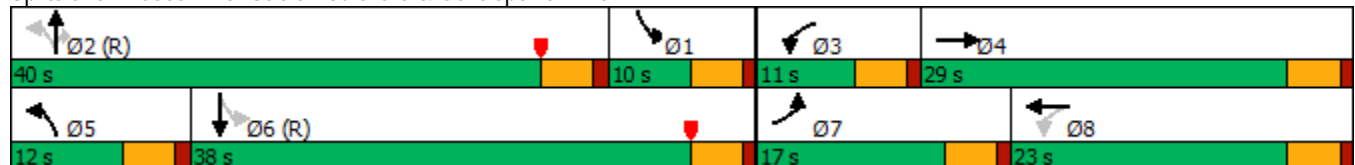
Intersection LOS: B

Intersection Capacity Utilization 53.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Sable Boulevard & Centrepont Drive

























HCM 6th Signalized Intersection Summary

5: Sable Boulevard & Centrepont Drive

2021 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 87 | 56 | 106 | 69 | 65 | 38 | 74 | 399 | 37 | 47 | 626 | 100 |
| Future Volume (veh/h) | 87 | 56 | 106 | 69 | 65 | 38 | 74 | 399 | 37 | 47 | 626 | 100 |
| 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 | | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 102 | 66 | 119 | 78 | 73 | 43 | 83 | 448 | 25 | 50 | 666 | 106 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 131 | 83 | 149 | 210 | 259 | 141 | 288 | 1402 | 625 | 716 | 1724 | 274 |
| Arrive On Green | 0.07 | 0.14 | 0.14 | 0.05 | 0.12 | 0.12 | 0.05 | 0.39 | 0.39 | 0.22 | 0.56 | 0.56 |
| Sat Flow, veh/h | 1781 | 598 | 1078 | 1781 | 2218 | 1212 | 1781 | 3554 | 1585 | 1781 | 3071 | 488 |
| Grp Volume(v), veh/h | 102 | 0 | 185 | 78 | 57 | 59 | 83 | 448 | 25 | 50 | 385 | 387 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1676 | 1781 | 1777 | 1652 | 1781 | 1777 | 1585 | 1781 | 1777 | 1782 |
| Q Serve(g_s), s | 5.1 | 0.0 | 9.6 | 3.4 | 2.7 | 2.9 | 2.8 | 7.9 | 0.7 | 0.0 | 10.9 | 10.9 |
| Cycle Q Clear(g_c), s | 5.1 | 0.0 | 9.6 | 3.4 | 2.7 | 2.9 | 2.8 | 7.9 | 0.7 | 0.0 | 10.9 | 10.9 |
| Prop In Lane | 1.00 | | 0.64 | 1.00 | | 0.73 | 1.00 | | 1.00 | 1.00 | | 0.27 |
| Lane Grp Cap(c), veh/h | 131 | 0 | 232 | 210 | 207 | 193 | 288 | 1402 | 625 | 716 | 998 | 1001 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.80 | 0.37 | 0.28 | 0.30 | 0.29 | 0.32 | 0.04 | 0.07 | 0.39 | 0.39 |
| Avail Cap(c_a), veh/h | 247 | 0 | 456 | 246 | 365 | 340 | 350 | 1402 | 625 | 716 | 998 | 1001 |
| 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 | 1.00 | 1.00 | 1.00 | 0.88 | 0.88 | 0.88 |
| Uniform Delay (d), s/veh | 41.0 | 0.0 | 37.6 | 32.9 | 36.3 | 36.4 | 20.0 | 18.9 | 9.4 | 12.4 | 11.0 | 11.1 |
| Incr Delay (d2), s/veh | 9.7 | 0.0 | 6.3 | 1.1 | 0.7 | 0.9 | 0.5 | 0.6 | 0.1 | 0.0 | 1.0 | 1.0 |
| 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(95%),veh/ln | 4.6 | 0.0 | 7.7 | 2.7 | 2.1 | 2.2 | 2.1 | 5.9 | 0.6 | 1.0 | 7.4 | 7.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 50.6 | 0.0 | 43.8 | 34.0 | 37.0 | 37.3 | 20.5 | 19.5 | 9.5 | 12.4 | 12.0 | 12.0 |
| LnGrp LOS | D | A | D | C | D | D | C | B | A | B | B | B |
| Approach Vol, veh/h | | 287 | | | 194 | | | 556 | | | 822 | |
| Approach Delay, s/veh | | 46.3 | | | 35.9 | | | 19.2 | | | 12.1 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 23.9 | 40.0 | 9.2 | 16.9 | 8.9 | 55.0 | 11.1 | 15.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.5 | 35.5 | 6.5 | 24.5 | 7.5 | 33.5 | 12.5 | 18.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.0 | 9.9 | 5.4 | 11.6 | 4.8 | 12.9 | 7.1 | 4.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 3.2 | 0.0 | 0.8 | 0.0 | 5.0 | 0.1 | 0.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 22.0 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |
| Notes | | | | | | | | | | | | |
| User approved pedestrian interval to be less than phase max green. | | | | | | | | | | | | |

Timings 5: Sable Boulevard & Centrepont Drive

2040 Background PM.syn

03/12/2020



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 78 | 51 | 101 | 59 | 56 | 581 | 53 | 68 | 912 |
| Future Volume (vph) | 78 | 51 | 101 | 59 | 56 | 581 | 53 | 68 | 912 |
| Turn Type | Prot | NA | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | | 1 | 6 |
| Permitted Phases | | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 15.0 | 23.0 | 15.0 | 23.0 | 10.0 | 42.0 | 42.0 | 10.0 | 42.0 |
| Total Split (%) | 16.7% | 25.6% | 16.7% | 25.6% | 11.1% | 46.7% | 46.7% | 11.1% | 46.7% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effect Green (s) | 8.9 | 9.4 | 17.7 | 9.5 | 52.1 | 52.1 | 52.1 | 50.5 | 50.5 |
| Actuated g/C Ratio | 0.10 | 0.10 | 0.20 | 0.11 | 0.58 | 0.58 | 0.58 | 0.56 | 0.56 |
| v/c Ratio | 0.49 | 0.60 | 0.43 | 0.31 | 0.21 | 0.31 | 0.06 | 0.15 | 0.54 |
| Control Delay | 47.5 | 26.7 | 30.8 | 21.5 | 13.8 | 12.4 | 0.1 | 15.4 | 16.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 47.5 | 26.7 | 30.8 | 21.5 | 13.8 | 12.4 | 0.1 | 15.4 | 16.5 |
| LOS | D | C | C | C | B | B | A | B | B |
| Approach Delay | | 34.0 | | 25.9 | | 11.6 | | | 16.4 |
| Approach LOS | | C | | C | | B | | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 27.5 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 17.6

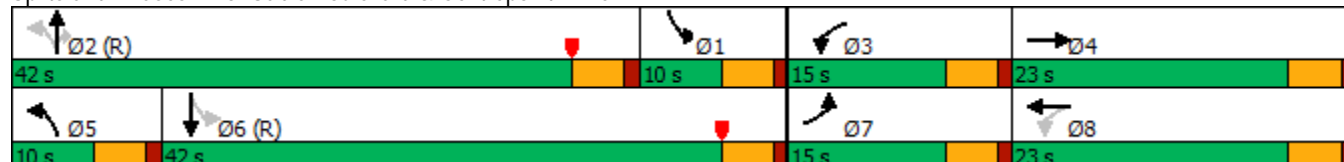
Intersection LOS: B

Intersection Capacity Utilization 61.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Sable Boulevard & Centrepont Drive

























HCM 6th Signalized Intersection Summary

5: Sable Boulevard & Centrepont Drive

2040 Background PM.syn



















03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 78 | 51 | 92 | 101 | 59 | 55 | 56 | 581 | 53 | 68 | 912 | 88 |
| Future Volume (veh/h) | 78 | 51 | 92 | 101 | 59 | 55 | 56 | 581 | 53 | 68 | 912 | 88 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 85 | 55 | 95 | 110 | 64 | 60 | 61 | 632 | 42 | 72 | 970 | 94 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 110 | 70 | 122 | 242 | 229 | 191 | 233 | 1481 | 660 | 636 | 1867 | 181 |
| Arrive On Green | 0.06 | 0.11 | 0.11 | 0.07 | 0.12 | 0.12 | 0.04 | 0.42 | 0.42 | 0.20 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1781 | 616 | 1063 | 1781 | 1837 | 1534 | 1781 | 3554 | 1585 | 1781 | 3273 | 317 |
| Grp Volume(v), veh/h | 85 | 0 | 150 | 110 | 62 | 62 | 61 | 632 | 42 | 72 | 527 | 537 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1679 | 1781 | 1777 | 1594 | 1781 | 1777 | 1585 | 1781 | 1777 | 1813 |
| Q Serve(g_s), s | 4.2 | 0.0 | 7.8 | 4.8 | 2.8 | 3.2 | 2.0 | 11.4 | 1.0 | 0.0 | 16.3 | 16.3 |
| Cycle Q Clear(g_c), s | 4.2 | 0.0 | 7.8 | 4.8 | 2.8 | 3.2 | 2.0 | 11.4 | 1.0 | 0.0 | 16.3 | 16.3 |
| Prop In Lane | 1.00 | | 0.63 | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 0.17 |
| Lane Grp Cap(c), veh/h | 110 | 0 | 192 | 242 | 221 | 198 | 233 | 1481 | 660 | 636 | 1014 | 1034 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.78 | 0.46 | 0.28 | 0.31 | 0.26 | 0.43 | 0.06 | 0.11 | 0.52 | 0.52 |
| Avail Cap(c_a), veh/h | 208 | 0 | 345 | 322 | 365 | 328 | 264 | 1481 | 660 | 636 | 1014 | 1034 |
| 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 | 1.00 | 1.00 | 1.00 | 0.63 | 0.63 | 0.63 |
| Uniform Delay (d), s/veh | 41.6 | 0.0 | 38.8 | 32.1 | 35.7 | 35.9 | 19.5 | 18.6 | 7.8 | 14.2 | 11.8 | 11.8 |
| Incr Delay (d2), s/veh | 11.0 | 0.0 | 6.8 | 1.3 | 0.7 | 0.9 | 0.6 | 0.9 | 0.2 | 0.0 | 1.2 | 1.2 |
| 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(95%),veh/ln | 3.9 | 0.0 | 6.4 | 3.8 | 2.3 | 2.3 | 1.5 | 8.2 | 1.0 | 1.5 | 9.5 | 9.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.7 | 0.0 | 45.5 | 33.5 | 36.4 | 36.8 | 20.1 | 19.5 | 8.0 | 14.2 | 13.0 | 13.0 |
| LnGrp LOS | D | A | D | C | D | D | C | B | A | B | B | B |
| Approach Vol, veh/h | 235 | | | | | 234 | | 735 | | 1136 | | |
| Approach Delay, s/veh | 48.1 | | | | | 35.1 | | 18.9 | | 13.1 | | |
| Approach LOS | D | | | | | D | | B | | B | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.3 | 42.0 | 11.0 | 14.8 | 8.4 | 55.8 | 10.0 | 15.7 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 5.5 | 37.5 | 10.5 | 18.5 | 5.5 | 37.5 | 10.5 | 18.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.0 | 13.4 | 6.8 | 9.8 | 4.0 | 18.3 | 6.2 | 5.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.7 | 0.1 | 0.5 | 0.0 | 7.1 | 0.1 | 0.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 20.6 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |
| Notes | | | | | | | | | | | | |

Timings 5: Sable Boulevard & Centrepont Drive

2040 Total PM.syn

03/12/2020

| |  |  |  |  |  |  |  |  |  |
|----------------------|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 87 | 56 | 101 | 65 | 74 | 581 | 53 | 68 | 912 |
| Future Volume (vph) | 87 | 56 | 101 | 65 | 74 | 581 | 53 | 68 | 912 |
| Turn Type | pm+pt | NA | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | 3 | 8 | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 9.5 | 22.5 | 9.5 | 22.5 | 9.5 | 22.5 | 22.5 | 9.5 | 22.5 |
| Total Split (s) | 12.0 | 23.0 | 12.0 | 23.0 | 10.0 | 41.0 | 41.0 | 14.0 | 45.0 |
| Total Split (%) | 13.3% | 25.6% | 13.3% | 25.6% | 11.1% | 45.6% | 45.6% | 15.6% | 50.0% |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lead | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effect Green (s) | 16.4 | 10.2 | 16.5 | 10.2 | 50.0 | 50.0 | 50.0 | 51.4 | 51.4 |
| Actuated g/C Ratio | 0.18 | 0.11 | 0.18 | 0.11 | 0.56 | 0.56 | 0.56 | 0.57 | 0.57 |
| v/c Ratio | 0.35 | 0.64 | 0.50 | 0.31 | 0.29 | 0.32 | 0.06 | 0.13 | 0.54 |
| Control Delay | 29.9 | 28.6 | 34.9 | 21.5 | 16.0 | 13.9 | 0.1 | 14.3 | 15.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 29.9 | 28.6 | 34.9 | 21.5 | 16.0 | 13.9 | 0.1 | 14.3 | 15.7 |
| LOS | C | C | C | C | B | B | A | B | B |
| Approach Delay | | 29.0 | | 27.6 | | 13.1 | | | 15.6 |
| Approach LOS | | C | | C | | B | | | B |

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 29.8 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 17.5

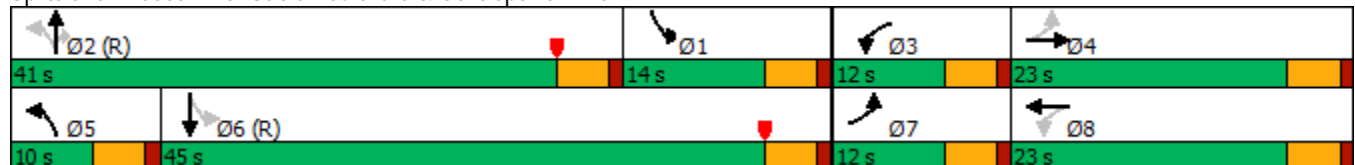
Intersection LOS: B

Intersection Capacity Utilization 62.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Sable Boulevard & Centrepont Drive

























HCM 6th Signalized Intersection Summary

5: Sable Boulevard & Centrepoint Drive

2040 Total PM.syn













03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 87 | 56 | 106 | 101 | 65 | 55 | 74 | 581 | 53 | 68 | 912 | 100 |
| Future Volume (veh/h) | 87 | 56 | 106 | 101 | 65 | 55 | 74 | 581 | 53 | 68 | 912 | 100 |
| 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 | | 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 |
| Work Zone On Approach | No | | | No | | | No | | | No | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 95 | 61 | 115 | 110 | 71 | 60 | 80 | 632 | 42 | 72 | 970 | 106 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 318 | 76 | 142 | 239 | 266 | 203 | 226 | 1441 | 643 | 620 | 1782 | 195 |
| Arrive On Green | 0.06 | 0.13 | 0.13 | 0.07 | 0.14 | 0.14 | 0.05 | 0.41 | 0.41 | 0.19 | 0.55 | 0.55 |
| Sat Flow, veh/h | 1781 | 580 | 1093 | 1781 | 1920 | 1464 | 1781 | 3554 | 1585 | 1781 | 3231 | 353 |
| Grp Volume(v), veh/h | 95 | 0 | 176 | 110 | 65 | 66 | 80 | 632 | 42 | 72 | 533 | 543 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1674 | 1781 | 1777 | 1607 | 1781 | 1777 | 1585 | 1781 | 1777 | 1807 |
| Q Serve(g_s), s | 4.1 | 0.0 | 9.2 | 4.7 | 2.9 | 3.3 | 2.6 | 11.6 | 1.0 | 0.0 | 17.3 | 17.3 |
| Cycle Q Clear(g_c), s | 4.1 | 0.0 | 9.2 | 4.7 | 2.9 | 3.3 | 2.6 | 11.6 | 1.0 | 0.0 | 17.3 | 17.3 |
| Prop In Lane | 1.00 | | 0.65 | 1.00 | | 0.91 | 1.00 | | 1.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 318 | 0 | 218 | 239 | 246 | 223 | 226 | 1441 | 643 | 620 | 980 | 997 |
| V/C Ratio(X) | 0.30 | 0.00 | 0.81 | 0.46 | 0.26 | 0.30 | 0.35 | 0.44 | 0.07 | 0.12 | 0.54 | 0.54 |
| Avail Cap(c_a), veh/h | 357 | 0 | 344 | 262 | 365 | 330 | 249 | 1441 | 643 | 620 | 980 | 997 |
| 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 | 1.00 | 1.00 | 1.00 | 0.62 | 0.62 | 0.62 |
| Uniform Delay (d), s/veh | 31.1 | 0.0 | 38.0 | 31.2 | 34.7 | 34.8 | 20.7 | 19.3 | 8.3 | 15.1 | 12.9 | 12.9 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 7.5 | 1.4 | 0.6 | 0.7 | 0.9 | 1.0 | 0.2 | 0.1 | 1.4 | 1.3 |
| 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(95%),veh/ln | 3.2 | 0.0 | 7.5 | 3.8 | 2.3 | 2.4 | 2.0 | 8.4 | 1.0 | 1.6 | 10.1 | 10.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.6 | 0.0 | 45.5 | 32.6 | 35.2 | 35.5 | 21.6 | 20.3 | 8.5 | 15.1 | 14.3 | 14.3 |
| LnGrp LOS | C | A | D | C | D | D | C | C | A | B | B | B |
| Approach Vol, veh/h | 271 | | | 241 | | | 754 | | | 1148 | | |
| Approach Delay, s/veh | 40.7 | | | 34.1 | | | 19.8 | | | 14.3 | | |
| Approach LOS | D | | | C | | | B | | | B | | |
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | |
| Phs Duration (G+Y+Rc), s | 22.0 | 41.0 | 10.8 | 16.2 | 8.8 | 54.1 | 10.1 | 17.0 | | | | |
| Change Period (Y+Rc), s | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | | |
| Max Green Setting (Gmax), s | 9.5 | 36.5 | 7.5 | 18.5 | 5.5 | 40.5 | 7.5 | 18.5 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.0 | 13.6 | 6.7 | 11.2 | 4.6 | 19.3 | 6.1 | 5.3 | | | | |
| Green Ext Time (p_c), s | 0.1 | 4.6 | 0.0 | 0.5 | 0.0 | 7.5 | 0.0 | 0.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | 21.0 | | | | | | | | | | | |
| HCM 6th LOS | C | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

6: West Mall Entrance & Mall Ring Road

2020 Existing PM
01/28/2020












| | | | | | | |
|-----------------------------------|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 69 | 127 | 91 | 30 | 30 | 64 |
| Future Volume (Veh/h) | 69 | 127 | 91 | 30 | 30 | 64 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.89 | 0.89 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 80 | 148 | 102 | 34 | 34 | 74 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | 132 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 251 | 160 | 308 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 251 | 160 | 308 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 95 | | 83 | 95 | 94 | 93 |
| cM capacity (veh/h) | 1623 | | 602 | 696 | 576 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | |
| Volume Total | 80 | 148 | 102 | 34 | 108 | |
| Volume Left | 80 | 0 | 102 | 0 | 0 | |
| Volume Right | 0 | 148 | 0 | 0 | 74 | |
| cSH | 1623 | 1700 | 602 | 696 | 849 | |
| Volume to Capacity | 0.05 | 0.09 | 0.17 | 0.05 | 0.13 | |
| Queue Length 95th (ft) | 4 | 0 | 15 | 4 | 11 | |
| Control Delay (s) | 7.3 | 0.0 | 12.2 | 10.4 | 9.9 | |
| Lane LOS | A | | B | B | A | |
| Approach Delay (s) | 2.6 | | 11.8 | | 9.9 | |
| Approach LOS | | | B | | A | |
| Intersection Summary | | | | | | |
| Average Delay | | | 6.9 | | | |
| Intersection Capacity Utilization | | | 22.2% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

6: West Mall Entrance & Mall Ring Road

2021 Background PM













01/28/2020

| | | | | | | |
|-----------------------------------|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |
| Traffic Volume (veh/h) | 156 | 127 | 91 | 29 | 28 | 155 |
| Future Volume (Veh/h) | 156 | 127 | 91 | 29 | 28 | 155 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 170 | 138 | 99 | 32 | 30 | 168 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 132 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 523 | 340 | 478 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 523 | 340 | 478 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 90 | | 71 | 94 | 93 | 85 |
| cM capacity (veh/h) | 1623 | | 342 | 521 | 435 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | |
| Volume Total | 170 | 138 | 99 | 32 | 198 | |
| Volume Left | 170 | 0 | 99 | 0 | 0 | |
| Volume Right | 0 | 138 | 0 | 0 | 168 | |
| cSH | 1623 | 1700 | 342 | 521 | 885 | |
| Volume to Capacity | 0.10 | 0.08 | 0.29 | 0.06 | 0.22 | |
| Queue Length 95th (ft) | 9 | 0 | 29 | 5 | 21 | |
| Control Delay (s) | 7.5 | 0.0 | 19.7 | 12.4 | 10.2 | |
| Lane LOS | A | | C | B | B | |
| Approach Delay (s) | 4.1 | | 17.9 | | 10.2 | |
| Approach LOS | | | C | | B | |
| Intersection Summary | | | | | | |
| Average Delay | | | 8.9 | | | |
| Intersection Capacity Utilization | | | 34.7% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

6: West Mall Entrance & Mall Ring Road

2021 Total PM
01/28/2020













| | | | | | | |
|-----------------------------------|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 186 | 127 | 91 | 29 | 28 | 178 |
| Future Volume (Veh/h) | 186 | 127 | 91 | 29 | 28 | 178 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 202 | 138 | 99 | 32 | 30 | 193 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | 132 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 612 | 404 | 542 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 612 | 404 | 542 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 88 | | 65 | 93 | 92 | 82 |
| cM capacity (veh/h) | 1623 | | 284 | 469 | 392 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | |
| Volume Total | 202 | 138 | 99 | 32 | 223 | |
| Volume Left | 202 | 0 | 99 | 0 | 0 | |
| Volume Right | 0 | 138 | 0 | 0 | 193 | |
| cSH | 1623 | 1700 | 284 | 469 | 876 | |
| Volume to Capacity | 0.12 | 0.08 | 0.35 | 0.07 | 0.25 | |
| Queue Length 95th (ft) | 11 | 0 | 38 | 5 | 25 | |
| Control Delay (s) | 7.5 | 0.0 | 24.3 | 13.2 | 10.5 | |
| Lane LOS | A | | C | B | B | |
| Approach Delay (s) | 4.5 | | 21.6 | | 10.5 | |
| Approach LOS | | | C | | B | |
| Intersection Summary | | | | | | |
| Average Delay | | | 9.6 | | | |
| Intersection Capacity Utilization | | | 37.8% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

6: West Mall Entrance & Mall Ring Road

2040 Background PM













01/28/2020

| | | | | | | |
|-----------------------------------|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 156 | 127 | 91 | 29 | 28 | 155 |
| Future Volume (Veh/h) | 156 | 127 | 91 | 29 | 28 | 155 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 170 | 138 | 99 | 32 | 30 | 168 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 132 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 523 | 340 | 478 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 523 | 340 | 478 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 90 | | 71 | 94 | 93 | 85 |
| cM capacity (veh/h) | 1623 | | 342 | 521 | 435 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | |
| Volume Total | 170 | 138 | 99 | 32 | 198 | |
| Volume Left | 170 | 0 | 99 | 0 | 0 | |
| Volume Right | 0 | 138 | 0 | 0 | 168 | |
| cSH | 1623 | 1700 | 342 | 521 | 885 | |
| Volume to Capacity | 0.10 | 0.08 | 0.29 | 0.06 | 0.22 | |
| Queue Length 95th (ft) | 9 | 0 | 29 | 5 | 21 | |
| Control Delay (s) | 7.5 | 0.0 | 19.7 | 12.4 | 10.2 | |
| Lane LOS | A | | C | B | B | |
| Approach Delay (s) | 4.1 | | 17.9 | | 10.2 | |
| Approach LOS | | | C | | B | |
| Intersection Summary | | | | | | |
| Average Delay | | | 8.9 | | | |
| Intersection Capacity Utilization | | | 34.7% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

6: West Mall Entrance & Mall Ring Road

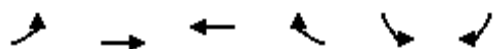
2040 Total PM
01/29/2020






| | | | | | | |
|-----------------------------------|---|---|---|---|---|---|
| |  |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |
| Traffic Volume (veh/h) | 186 | 127 | 91 | 29 | 28 | 178 |
| Future Volume (Veh/h) | 186 | 127 | 91 | 29 | 28 | 178 |
| Sign Control | Free | | | Stop | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 202 | 138 | 99 | 32 | 30 | 193 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | 132 | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | 612 | 404 | 542 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | 612 | 404 | 542 | 0 |
| tC, single (s) | 4.1 | | 7.1 | 6.5 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | 3.5 | 4.0 | 4.0 | 3.3 |
| p0 queue free % | 88 | | 65 | 93 | 92 | 82 |
| cM capacity (veh/h) | 1623 | | 284 | 469 | 392 | 1085 |
| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | |
| Volume Total | 202 | 138 | 99 | 32 | 223 | |
| Volume Left | 202 | 0 | 99 | 0 | 0 | |
| Volume Right | 0 | 138 | 0 | 0 | 193 | |
| cSH | 1623 | 1700 | 284 | 469 | 876 | |
| Volume to Capacity | 0.12 | 0.08 | 0.35 | 0.07 | 0.25 | |
| Queue Length 95th (ft) | 11 | 0 | 38 | 5 | 25 | |
| Control Delay (s) | 7.5 | 0.0 | 24.3 | 13.2 | 10.5 | |
| Lane LOS | A | | C | B | B | |
| Approach Delay (s) | 4.5 | | 21.6 | | 10.5 | |
| Approach LOS | | | C | | B | |
| Intersection Summary | | | | | | |
| Average Delay | | | 9.6 | | | |
| Intersection Capacity Utilization | | | 37.8% | | ICU Level of Service | |
| Analysis Period (min) | | | 15 | | | |
| | | | A | | | |

HCM Unsignalized Intersection Capacity Analysis

7: Mall Ring Road & Crystal Street

2020 Existing PM
01/28/2020



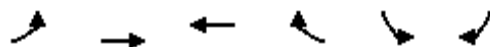
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|---|---|---|----------------------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Volume (veh/h) | 66 | 30 | 28 | 188 | 222 | 83 |
| Future Volume (Veh/h) | 66 | 30 | 28 | 188 | 222 | 83 |
| Sign Control | | Stop | Stop | | Free | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.73 | 0.73 | 0.88 | 0.88 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 90 | 41 | 32 | 214 | 258 | 97 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | 252 | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 746 | 516 | 613 | 0 | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 746 | 516 | 613 | 0 | 0 | |
| tC, single (s) | 7.1 | 6.5 | 6.5 | 6.2 | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | |
| p0 queue free % | 58 | 89 | 91 | 80 | 84 | |
| cM capacity (veh/h) | 216 | 389 | 343 | 1085 | 1623 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 | SB 2 | |
| Volume Total | 90 | 41 | 246 | 258 | 97 | |
| Volume Left | 90 | 0 | 0 | 258 | 0 | |
| Volume Right | 0 | 0 | 214 | 0 | 97 | |
| cSH | 216 | 389 | 847 | 1623 | 1700 | |
| Volume to Capacity | 0.42 | 0.11 | 0.29 | 0.16 | 0.06 | |
| Queue Length 95th (ft) | 48 | 9 | 30 | 14 | 0 | |
| Control Delay (s) | 33.0 | 15.3 | 11.0 | 7.6 | 0.0 | |
| Lane LOS | D | C | B | A | | |
| Approach Delay (s) | 27.5 | | 11.0 | 5.6 | | |
| Approach LOS | D | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 11.3 | | | |
| Intersection Capacity Utilization | | | 39.0% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis

7: Mall Ring Road & Crystal Street

2021 Background PM

01/28/2020



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 121 | 30 | 28 | 188 | 222 | 139 |
| Future Volume (Veh/h) | 121 | 30 | 28 | 188 | 222 | 139 |
| Sign Control | | Stop | Stop | | Free | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 132 | 33 | 30 | 204 | 241 | 151 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | 252 | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 701 | 482 | 633 | 0 | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 701 | 482 | 633 | 0 | 0 | |
| tC, single (s) | 7.1 | 6.5 | 6.5 | 6.2 | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | |
| p0 queue free % | 44 | 92 | 91 | 81 | 85 | |
| cM capacity (veh/h) | 237 | 412 | 338 | 1085 | 1623 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 | SB 2 | |
| Volume Total | 132 | 33 | 234 | 241 | 151 | |
| Volume Left | 132 | 0 | 0 | 241 | 0 | |
| Volume Right | 0 | 0 | 204 | 0 | 151 | |
| cSH | 237 | 412 | 846 | 1623 | 1700 | |
| Volume to Capacity | 0.56 | 0.08 | 0.28 | 0.15 | 0.09 | |
| Queue Length 95th (ft) | 76 | 6 | 28 | 13 | 0 | |
| Control Delay (s) | 37.6 | 14.5 | 10.9 | 7.6 | 0.0 | |
| Lane LOS | E | B | B | A | | |
| Approach Delay (s) | 33.0 | | 10.9 | 4.7 | | |
| Approach LOS | D | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 12.4 | | | |
| Intersection Capacity Utilization | | | 42.1% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis






7: Mall Ring Road & Crystal Street

2021 Total PM
01/28/2020



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 144 | 30 | 28 | 206 | 246 | 169 |
| Future Volume (Veh/h) | 144 | 30 | 28 | 206 | 246 | 169 |
| Sign Control | | Stop | Stop | | Free | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 157 | 33 | 30 | 224 | 267 | 184 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | 252 | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 773 | 534 | 718 | 0 | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 773 | 534 | 718 | 0 | 0 | |
| tC, single (s) | 7.1 | 6.5 | 6.5 | 6.2 | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | |
| p0 queue free % | 23 | 91 | 90 | 79 | 84 | |
| cM capacity (veh/h) | 203 | 378 | 296 | 1085 | 1623 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 | SB 2 | |
| Volume Total | 157 | 33 | 254 | 267 | 184 | |
| Volume Left | 157 | 0 | 0 | 267 | 0 | |
| Volume Right | 0 | 0 | 224 | 0 | 184 | |
| cSH | 203 | 378 | 826 | 1623 | 1700 | |
| Volume to Capacity | 0.77 | 0.09 | 0.31 | 0.16 | 0.11 | |
| Queue Length 95th (ft) | 133 | 7 | 33 | 15 | 0 | |
| Control Delay (s) | 65.7 | 15.4 | 11.3 | 7.7 | 0.0 | |
| Lane LOS | F | C | B | A | | |
| Approach Delay (s) | 57.0 | | 11.3 | 4.5 | | |
| Approach LOS | F | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 17.6 | | | |
| Intersection Capacity Utilization | | | 45.8% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

| Intersection | |
|---------------------------|----|
| Intersection Delay, s/veh | 12 |
| Intersection LOS | B |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 144 | 30 | 28 | 206 | 246 | 169 |
| Future Vol, veh/h | 144 | 30 | 28 | 206 | 246 | 169 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 157 | 33 | 30 | 224 | 267 | 184 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|----------------------------|------|------|------|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 2 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 2 |
| HCM Control Delay | 11.6 | 11.5 | 12.5 |
| HCM LOS | B | B | B |

| Lane | EBLn1 | EBLn2 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 12% | 0% | 0% |
| Vol Right, % | 0% | 0% | 88% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 144 | 30 | 234 | 246 | 169 |
| LT Vol | 144 | 0 | 0 | 246 | 0 |
| Through Vol | 0 | 30 | 28 | 0 | 0 |
| RT Vol | 0 | 0 | 206 | 0 | 169 |
| Lane Flow Rate | 157 | 33 | 254 | 267 | 184 |
| Geometry Grp | 7 | 7 | 4 | 7 | 7 |
| Degree of Util (X) | 0.289 | 0.056 | 0.376 | 0.469 | 0.26 |
| Departure Headway (Hd) | 6.643 | 6.135 | 5.328 | 6.309 | 5.098 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 542 | 584 | 677 | 572 | 705 |
| Service Time | 4.374 | 3.867 | 3.357 | 4.034 | 2.823 |
| HCM Lane V/C Ratio | 0.29 | 0.057 | 0.375 | 0.467 | 0.261 |
| HCM Control Delay | 12.1 | 9.2 | 11.5 | 14.5 | 9.6 |
| HCM Lane LOS | B | A | B | B | A |
| HCM 95th-tile Q | 1.2 | 0.2 | 1.7 | 2.5 | 1 |

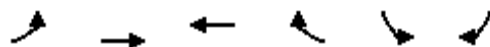
| | | | | |
|-----------------------------|-------------|-------------|-------------|--------------|
| Intersection | | | | |
| Intersection Delay, s/veh | 4.6 | | | |
| Intersection LOS | A | | | |
| Approach | EB | WB | SB | |
| Entry Lanes | 1 | 1 | 2 | |
| Conflicting Circle Lanes | 1 | 1 | 1 | |
| Adj Approach Flow, veh/h | 190 | 254 | 451 | |
| Demand Flow Rate, veh/h | 194 | 259 | 460 | |
| Vehicles Circulating, veh/h | 272 | 160 | 31 | |
| Vehicles Exiting, veh/h | 219 | 306 | 388 | |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | |
| Approach Delay, s/veh | 5.2 | 5.1 | 4.1 | |
| Approach LOS | A | A | A | |
| Lane | Left | Left | Left | Right |
| Designated Moves | LT | TR | L | TR |
| Assumed Moves | LT | TR | L | TR |
| RT Channelized | | | | |
| Lane Util | 1.000 | 1.000 | 0.591 | 0.409 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.535 | 2.535 |
| Critical Headway, s | 4.976 | 4.976 | 4.544 | 4.544 |
| Entry Flow, veh/h | 194 | 259 | 272 | 188 |
| Cap Entry Lane, veh/h | 1046 | 1172 | 1381 | 1381 |
| Entry HV Adj Factor | 0.981 | 0.982 | 0.982 | 0.979 |
| Flow Entry, veh/h | 190 | 254 | 267 | 184 |
| Cap Entry, veh/h | 1026 | 1151 | 1355 | 1351 |
| V/C Ratio | 0.186 | 0.221 | 0.197 | 0.136 |
| Control Delay, s/veh | 5.2 | 5.1 | 4.3 | 3.8 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 1 | 0 |

HCM Unsignalized Intersection Capacity Analysis

7: Mall Ring Road & Crystal Street

2040 Background PM

01/28/2020

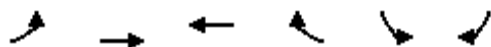


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 121 | 30 | 28 | 188 | 222 | 139 |
| Future Volume (Veh/h) | 121 | 30 | 28 | 188 | 222 | 139 |
| Sign Control | | Stop | Stop | | Free | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 132 | 33 | 30 | 204 | 241 | 151 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | 252 | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 701 | 482 | 633 | 0 | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 701 | 482 | 633 | 0 | 0 | |
| tC, single (s) | 7.1 | 6.5 | 6.5 | 6.2 | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | |
| p0 queue free % | 44 | 92 | 91 | 81 | 85 | |
| cM capacity (veh/h) | 237 | 412 | 338 | 1085 | 1623 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 | SB 2 | |
| Volume Total | 132 | 33 | 234 | 241 | 151 | |
| Volume Left | 132 | 0 | 0 | 241 | 0 | |
| Volume Right | 0 | 0 | 204 | 0 | 151 | |
| cSH | 237 | 412 | 846 | 1623 | 1700 | |
| Volume to Capacity | 0.56 | 0.08 | 0.28 | 0.15 | 0.09 | |
| Queue Length 95th (ft) | 76 | 6 | 28 | 13 | 0 | |
| Control Delay (s) | 37.6 | 14.5 | 10.9 | 7.6 | 0.0 | |
| Lane LOS | E | B | B | A | | |
| Approach Delay (s) | 33.0 | | 10.9 | 4.7 | | |
| Approach LOS | D | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 12.4 | | | |
| Intersection Capacity Utilization | | | 42.1% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

HCM Unsignalized Intersection Capacity Analysis






7: Mall Ring Road & Crystal Street

2040 Total PM.syn
03/12/2020



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 144 | 30 | 28 | 206 | 246 | 169 |
| Future Volume (Veh/h) | 144 | 30 | 28 | 206 | 246 | 169 |
| Sign Control | | Stop | Stop | | Free | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 157 | 33 | 30 | 224 | 267 | 184 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | 252 | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 773 | 534 | 718 | 0 | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 773 | 534 | 718 | 0 | 0 | |
| tC, single (s) | 7.1 | 6.5 | 6.5 | 6.2 | 4.1 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 4.0 | 4.0 | 3.3 | 2.2 | |
| p0 queue free % | 23 | 91 | 90 | 79 | 84 | |
| cM capacity (veh/h) | 203 | 378 | 296 | 1085 | 1623 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 | SB 2 | |
| Volume Total | 157 | 33 | 254 | 267 | 184 | |
| Volume Left | 157 | 0 | 0 | 267 | 0 | |
| Volume Right | 0 | 0 | 224 | 0 | 184 | |
| cSH | 203 | 378 | 826 | 1623 | 1700 | |
| Volume to Capacity | 0.77 | 0.09 | 0.31 | 0.16 | 0.11 | |
| Queue Length 95th (ft) | 133 | 7 | 33 | 15 | 0 | |
| Control Delay (s) | 65.7 | 15.4 | 11.3 | 7.7 | 0.0 | |
| Lane LOS | F | C | B | A | | |
| Approach Delay (s) | 57.0 | | 11.3 | 4.5 | | |
| Approach LOS | F | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 17.6 | | | |
| Intersection Capacity Utilization | | | 45.8% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

| Intersection | |
|---------------------------|----|
| Intersection Delay, s/veh | 12 |
| Intersection LOS | B |






| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 144 | 30 | 28 | 206 | 246 | 169 |
| Future Vol, veh/h | 144 | 30 | 28 | 206 | 246 | 169 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 157 | 33 | 30 | 224 | 267 | 184 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | EB | WB | SB |
|----------------------------|------|------|------|
| Opposing Approach | WB | EB | |
| Opposing Lanes | 1 | 2 | 0 |
| Conflicting Approach Left | SB | | WB |
| Conflicting Lanes Left | 2 | 0 | 1 |
| Conflicting Approach Right | | SB | EB |
| Conflicting Lanes Right | 0 | 2 | 2 |
| HCM Control Delay | 11.6 | 11.5 | 12.5 |
| HCM LOS | B | B | B |

| Lane | EBLn1 | EBLn2 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 100% | 0% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 100% | 12% | 0% | 0% |
| Vol Right, % | 0% | 0% | 88% | 0% | 100% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 144 | 30 | 234 | 246 | 169 |
| LT Vol | 144 | 0 | 0 | 246 | 0 |
| Through Vol | 0 | 30 | 28 | 0 | 0 |
| RT Vol | 0 | 0 | 206 | 0 | 169 |
| Lane Flow Rate | 157 | 33 | 254 | 267 | 184 |
| Geometry Grp | 7 | 7 | 4 | 7 | 7 |
| Degree of Util (X) | 0.289 | 0.056 | 0.376 | 0.469 | 0.26 |
| Departure Headway (Hd) | 6.643 | 6.135 | 5.328 | 6.309 | 5.098 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 542 | 584 | 677 | 572 | 705 |
| Service Time | 4.374 | 3.867 | 3.357 | 4.034 | 2.823 |
| HCM Lane V/C Ratio | 0.29 | 0.057 | 0.375 | 0.467 | 0.261 |
| HCM Control Delay | 12.1 | 9.2 | 11.5 | 14.5 | 9.6 |
| HCM Lane LOS | B | A | B | B | A |
| HCM 95th-tile Q | 1.2 | 0.2 | 1.7 | 2.5 | 1 |

| Intersection | | | | |
|-----------------------------|-------|-------|-------|-------|
| Intersection Delay, s/veh | 4.6 | | | |
| Intersection LOS | A | | | |
| Approach | EB | WB | SB | |
| Entry Lanes | 1 | 1 | 2 | |
| Conflicting Circle Lanes | 1 | 1 | 1 | |
| Adj Approach Flow, veh/h | 190 | 254 | 451 | |
| Demand Flow Rate, veh/h | 194 | 259 | 460 | |
| Vehicles Circulating, veh/h | 272 | 160 | 31 | |
| Vehicles Exiting, veh/h | 219 | 306 | 388 | |
| Ped Vol Crossing Leg, #/h | 0 | 0 | 0 | |
| Ped Cap Adj | 1.000 | 1.000 | 1.000 | |
| Approach Delay, s/veh | 5.2 | 5.1 | 4.1 | |
| Approach LOS | A | A | A | |
| Lane | Left | Left | Left | Right |
| Designated Moves | LT | TR | L | TR |
| Assumed Moves | LT | TR | L | TR |
| RT Channelized | | | | |
| Lane Util | 1.000 | 1.000 | 0.591 | 0.409 |
| Follow-Up Headway, s | 2.609 | 2.609 | 2.535 | 2.535 |
| Critical Headway, s | 4.976 | 4.976 | 4.544 | 4.544 |
| Entry Flow, veh/h | 194 | 259 | 272 | 188 |
| Cap Entry Lane, veh/h | 1046 | 1172 | 1381 | 1381 |
| Entry HV Adj Factor | 0.981 | 0.982 | 0.982 | 0.979 |
| Flow Entry, veh/h | 190 | 254 | 267 | 184 |
| Cap Entry, veh/h | 1026 | 1151 | 1355 | 1351 |
| V/C Ratio | 0.186 | 0.221 | 0.197 | 0.136 |
| Control Delay, s/veh | 5.2 | 5.1 | 4.3 | 3.8 |
| LOS | A | A | A | A |
| 95th %tile Queue, veh | 1 | 1 | 1 | 0 |






| Intersection | |
|---------------------------|-----|
| Intersection Delay, s/veh | 9.6 |
| Intersection LOS | A |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 118 | 80 | 44 | 151 | 88 | 68 |
| Future Vol, veh/h | 118 | 80 | 44 | 151 | 88 | 68 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 136 | 92 | 51 | 174 | 101 | 78 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | WB | NB | SB |
|----------------------------|-----|-----|-----|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 1 |
| Conflicting Approach Left | NB | | WB |
| Conflicting Lanes Left | 1 | 0 | 2 |
| Conflicting Approach Right | SB | WB | |
| Conflicting Lanes Right | 2 | 2 | 0 |
| HCM Control Delay | 9.6 | 9.7 | 9.4 |
| HCM LOS | A | A | A |

| Lane | NBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 23% | 0% | 0% | 0% | 100% |
| Vol Right, % | 77% | 0% | 100% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 195 | 118 | 80 | 88 | 68 |
| LT Vol | 0 | 118 | 0 | 88 | 0 |
| Through Vol | 44 | 0 | 0 | 0 | 68 |
| RT Vol | 151 | 0 | 80 | 0 | 0 |
| Lane Flow Rate | 224 | 136 | 92 | 101 | 78 |
| Geometry Grp | 4 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.293 | 0.227 | 0.123 | 0.165 | 0.116 |
| Departure Headway (Hd) | 4.707 | 6.015 | 4.807 | 5.861 | 5.357 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 760 | 594 | 741 | 610 | 667 |
| Service Time | 2.754 | 3.775 | 2.566 | 3.615 | 3.111 |
| HCM Lane V/C Ratio | 0.295 | 0.229 | 0.124 | 0.166 | 0.117 |
| HCM Control Delay | 9.7 | 10.5 | 8.2 | 9.8 | 8.8 |
| HCM Lane LOS | A | B | A | A | A |
| HCM 95th-tile Q | 1.2 | 0.9 | 0.4 | 0.6 | 0.4 |

| Intersection | |
|---------------------------|-----|
| Intersection Delay, s/veh | 9.4 |
| Intersection LOS | A |






| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 118 | 80 | 44 | 151 | 88 | 68 |
| Future Vol, veh/h | 118 | 80 | 44 | 151 | 88 | 68 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 128 | 87 | 48 | 164 | 96 | 74 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | WB | NB | SB |
|----------------------------|-----|-----|-----|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 1 |
| Conflicting Approach Left | NB | | WB |
| Conflicting Lanes Left | 1 | 0 | 2 |
| Conflicting Approach Right | SB | WB | |
| Conflicting Lanes Right | 2 | 2 | 0 |
| HCM Control Delay | 9.4 | 9.5 | 9.2 |
| HCM LOS | A | A | A |

| Lane | NBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 23% | 0% | 0% | 0% | 100% |
| Vol Right, % | 77% | 0% | 100% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 195 | 118 | 80 | 88 | 68 |
| LT Vol | 0 | 118 | 0 | 88 | 0 |
| Through Vol | 44 | 0 | 0 | 0 | 68 |
| RT Vol | 151 | 0 | 80 | 0 | 0 |
| Lane Flow Rate | 212 | 128 | 87 | 96 | 74 |
| Geometry Grp | 4 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.274 | 0.212 | 0.115 | 0.154 | 0.109 |
| Departure Headway (Hd) | 4.658 | 5.96 | 4.753 | 5.81 | 5.306 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 769 | 600 | 750 | 616 | 674 |
| Service Time | 2.699 | 3.712 | 2.504 | 3.556 | 3.052 |
| HCM Lane V/C Ratio | 0.276 | 0.213 | 0.116 | 0.156 | 0.11 |
| HCM Control Delay | 9.5 | 10.3 | 8.1 | 9.6 | 8.7 |
| HCM Lane LOS | A | B | A | A | A |
| HCM 95th-tile Q | 1.1 | 0.8 | 0.4 | 0.5 | 0.4 |

Intersection






| | |
|---------------------------|-----|
| Intersection Delay, s/veh | 9.9 |
| Intersection LOS | A |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 118 | 116 | 44 | 151 | 115 | 68 |
| Future Vol, veh/h | 118 | 116 | 44 | 151 | 115 | 68 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 136 | 133 | 51 | 174 | 132 | 78 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | WB | NB | SB |
|----------------------------|-----|----|-----|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 1 |
| Conflicting Approach Left | NB | | WB |
| Conflicting Lanes Left | 1 | 0 | 2 |
| Conflicting Approach Right | SB | WB | |
| Conflicting Lanes Right | 2 | 2 | 0 |
| HCM Control Delay | 9.8 | 10 | 9.9 |
| HCM LOS | A | A | A |

| Lane | NBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 23% | 0% | 0% | 0% | 100% |
| Vol Right, % | 77% | 0% | 100% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 195 | 118 | 116 | 115 | 68 |
| LT Vol | 0 | 118 | 0 | 115 | 0 |
| Through Vol | 44 | 0 | 0 | 0 | 68 |
| RT Vol | 151 | 0 | 116 | 0 | 0 |
| Lane Flow Rate | 224 | 136 | 133 | 132 | 78 |
| Geometry Grp | 4 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.301 | 0.23 | 0.182 | 0.219 | 0.119 |
| Departure Headway (Hd) | 4.842 | 6.111 | 4.902 | 5.967 | 5.463 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 737 | 585 | 727 | 599 | 652 |
| Service Time | 2.904 | 3.881 | 2.672 | 3.735 | 3.23 |
| HCM Lane V/C Ratio | 0.304 | 0.232 | 0.183 | 0.22 | 0.12 |
| HCM Control Delay | 10 | 10.7 | 8.8 | 10.4 | 9 |
| HCM Lane LOS | A | B | A | B | A |
| HCM 95th-tile Q | 1.3 | 0.9 | 0.7 | 0.8 | 0.4 |






| Intersection | |
|---------------------------|-----|
| Intersection Delay, s/veh | 9.4 |
| Intersection LOS | A |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 118 | 80 | 44 | 151 | 88 | 68 |
| Future Vol, veh/h | 118 | 80 | 44 | 151 | 88 | 68 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 128 | 87 | 48 | 164 | 96 | 74 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | WB | NB | SB |
|----------------------------|-----|-----|-----|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 1 |
| Conflicting Approach Left | NB | | WB |
| Conflicting Lanes Left | 1 | 0 | 2 |
| Conflicting Approach Right | SB | WB | |
| Conflicting Lanes Right | 2 | 2 | 0 |
| HCM Control Delay | 9.4 | 9.5 | 9.2 |
| HCM LOS | A | A | A |

| Lane | NBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 23% | 0% | 0% | 0% | 100% |
| Vol Right, % | 77% | 0% | 100% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 195 | 118 | 80 | 88 | 68 |
| LT Vol | 0 | 118 | 0 | 88 | 0 |
| Through Vol | 44 | 0 | 0 | 0 | 68 |
| RT Vol | 151 | 0 | 80 | 0 | 0 |
| Lane Flow Rate | 212 | 128 | 87 | 96 | 74 |
| Geometry Grp | 4 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.274 | 0.212 | 0.115 | 0.154 | 0.109 |
| Departure Headway (Hd) | 4.658 | 5.96 | 4.753 | 5.81 | 5.306 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 769 | 600 | 750 | 616 | 674 |
| Service Time | 2.699 | 3.712 | 2.504 | 3.556 | 3.052 |
| HCM Lane V/C Ratio | 0.276 | 0.213 | 0.116 | 0.156 | 0.11 |
| HCM Control Delay | 9.5 | 10.3 | 8.1 | 9.6 | 8.7 |
| HCM Lane LOS | A | B | A | A | A |
| HCM 95th-tile Q | 1.1 | 0.8 | 0.4 | 0.5 | 0.4 |

| Intersection | |
|---------------------------|-----|
| Intersection Delay, s/veh | 9.7 |
| Intersection LOS | A |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---------------------|---|---|---|------|---|---|
| Lane Configurations |  |  |  | |  |  |
| Traffic Vol, veh/h | 118 | 116 | 44 | 151 | 115 | 68 |
| Future Vol, veh/h | 118 | 116 | 44 | 151 | 115 | 68 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 128 | 126 | 48 | 164 | 125 | 74 |
| Number of Lanes | 1 | 1 | 1 | 0 | 1 | 1 |

| Approach | WB | NB | SB |
|----------------------------|-----|-----|-----|
| Opposing Approach | | SB | NB |
| Opposing Lanes | 0 | 2 | 1 |
| Conflicting Approach Left | NB | | WB |
| Conflicting Lanes Left | 1 | 0 | 2 |
| Conflicting Approach Right | SB | WB | |
| Conflicting Lanes Right | 2 | 2 | 0 |
| HCM Control Delay | 9.6 | 9.7 | 9.7 |
| HCM LOS | A | A | A |

| Lane | NBLn1 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|
| Vol Left, % | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 23% | 0% | 0% | 0% | 100% |
| Vol Right, % | 77% | 0% | 100% | 0% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 195 | 118 | 116 | 115 | 68 |
| LT Vol | 0 | 118 | 0 | 115 | 0 |
| Through Vol | 44 | 0 | 0 | 0 | 68 |
| RT Vol | 151 | 0 | 116 | 0 | 0 |
| Lane Flow Rate | 212 | 128 | 126 | 125 | 74 |
| Geometry Grp | 4 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.282 | 0.216 | 0.17 | 0.205 | 0.111 |
| Departure Headway (Hd) | 4.787 | 6.051 | 4.842 | 5.91 | 5.406 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 746 | 591 | 736 | 605 | 659 |
| Service Time | 2.842 | 3.813 | 2.604 | 3.671 | 3.167 |
| HCM Lane V/C Ratio | 0.284 | 0.217 | 0.171 | 0.207 | 0.112 |
| HCM Control Delay | 9.7 | 10.5 | 8.6 | 10.2 | 8.8 |
| HCM Lane LOS | A | B | A | B | A |
| HCM 95th-tile Q | 1.2 | 0.8 | 0.6 | 0.8 | 0.4 |

APPENDIX E

Queuing Analysis Worksheets

Queues

2021 Total PM.syn

1: Abilene Street & West Mall Entrance

03/12/2020



| Lane Group | WBL | WBR | NBT | SBL | SBT |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 55 | 258 | 643 | 275 | 540 |
| v/c Ratio | 0.29 | 0.65 | 0.30 | 0.43 | 0.20 |
| Control Delay | 35.6 | 12.6 | 8.5 | 4.8 | 2.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.6 | 12.6 | 8.5 | 4.8 | 2.7 |
| Queue Length 50th (ft) | 26 | 0 | 67 | 25 | 25 |
| Queue Length 95th (ft) | 53 | 52 | 117 | 62 | 54 |
| Internal Link Dist (ft) | 52 | | 498 | | 672 |
| Turn Bay Length (ft) | | | | 125 | |
| Base Capacity (vph) | 453 | 597 | 2144 | 771 | 2763 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.43 | 0.30 | 0.36 | 0.20 |
| Intersection Summary | | | | | |

Queues

2040 Total PM.syn

03/12/2020

1: Abilene Street & West Mall Entrance



| Lane Group | WBL | WBR | NBT | SBL | SBT |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph) | 51 | 241 | 823 | 275 | 788 |
| v/c Ratio | 0.28 | 0.63 | 0.39 | 0.50 | 0.28 |
| Control Delay | 35.6 | 12.7 | 9.7 | 5.8 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 35.6 | 12.7 | 9.7 | 5.8 | 3.0 |
| Queue Length 50th (ft) | 24 | 0 | 92 | 24 | 39 |
| Queue Length 95th (ft) | 53 | 60 | 188 | 61 | 81 |
| Internal Link Dist (ft) | 52 | | 498 | | 672 |
| Turn Bay Length (ft) | | | | 125 | |
| Base Capacity (vph) | 409 | 551 | 2132 | 694 | 2770 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.12 | 0.44 | 0.39 | 0.40 | 0.28 |
| Intersection Summary | | | | | |

Queues

2021 Total PM.syn

2: Abilene Street & Alameda Avenue

03/12/2020



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 152 | 1616 | 515 | 76 | 1619 | 89 | 451 | 216 | 91 | 124 | 252 | 176 |
| v/c Ratio | 0.52 | 0.81 | 0.59 | 0.41 | 0.92 | 0.14 | 0.76 | 0.36 | 0.15 | 0.64 | 0.27 | 0.33 |
| Control Delay | 64.0 | 40.2 | 9.3 | 81.9 | 32.6 | 1.7 | 60.6 | 37.6 | 2.9 | 70.4 | 40.9 | 7.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.0 | 40.2 | 9.3 | 81.9 | 32.6 | 1.7 | 60.6 | 37.6 | 2.9 | 70.4 | 40.9 | 7.5 |
| Queue Length 50th (ft) | 65 | 461 | 55 | 35 | 160 | 1 | 191 | 142 | 0 | 103 | 91 | 0 |
| Queue Length 95th (ft) | 99 | 526 | 168 | m51 | #598 | m9 | 239 | 228 | 20 | 158 | 132 | 54 |
| Internal Link Dist (ft) | | 425 | | | 641 | | | 672 | | | 415 | |
| Turn Bay Length (ft) | 100 | | | 275 | | 150 | 350 | | 325 | 150 | | 175 |
| Base Capacity (vph) | 403 | 1999 | 875 | 195 | 1765 | 654 | 1001 | 599 | 593 | 301 | 917 | 541 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.38 | 0.81 | 0.59 | 0.39 | 0.92 | 0.14 | 0.45 | 0.36 | 0.15 | 0.41 | 0.27 | 0.33 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.













m Volume for 95th percentile queue is metered by upstream signal.

Queues

2040 Total PM.syn

2: Abilene Street & Alameda Avenue

03/12/2020

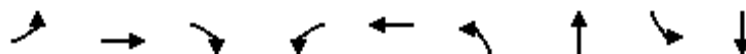
| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 152 | 2362 | 515 | 76 | 2372 | 89 | 451 | 309 | 91 | 117 | 340 | 166 |
| v/c Ratio | 0.53 | 1.05 | 0.59 | 0.58 | 1.22 | 0.13 | 0.77 | 0.56 | 0.16 | 0.64 | 0.42 | 0.34 |
| Control Delay | 64.6 | 69.9 | 13.5 | 84.5 | 128.5 | 1.3 | 61.6 | 45.0 | 3.1 | 72.3 | 46.4 | 9.3 |
| Queue Delay | 0.0 | 21.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.6 | 90.9 | 13.5 | 84.5 | 128.5 | 1.3 | 61.6 | 45.0 | 3.1 | 72.3 | 46.4 | 9.3 |
| Queue Length 50th (ft) | 65 | -829 | 126 | 35 | -896 | 1 | 192 | 225 | 0 | 97 | 132 | 3 |
| Queue Length 95th (ft) | 100 | #920 | 243 | m38 | m#935 | m2 | 241 | 337 | 21 | 159 | 189 | 65 |
| Internal Link Dist (ft) | | 425 | | | 641 | | | 672 | | | 415 | |
| Turn Bay Length (ft) | 100 | | | 275 | | 150 | 350 | | 325 | 150 | | 175 |
| Base Capacity (vph) | 351 | 2249 | 874 | 130 | 1945 | 704 | 715 | 548 | 553 | 234 | 806 | 484 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 269 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.43 | 1.19 | 0.59 | 0.58 | 1.22 | 0.13 | 0.63 | 0.56 | 0.17 | 0.50 | 0.42 | 0.34 |

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
3: Crystal Street & Alameda Avenue

2040 Total PM.syn
03/12/2020



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|-------------------------|------|-------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 129 | 2229 | 206 | 202 | 2358 | 124 | 256 | 65 | 108 |
| v/c Ratio | 0.46 | 1.07 | 0.28 | 0.82 | 1.00 | 0.26 | 0.42 | 0.10 | 0.22 |
| Control Delay | 27.7 | 52.5 | 1.2 | 68.1 | 32.2 | 28.9 | 21.3 | 26.2 | 19.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 37.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 27.7 | 52.5 | 1.2 | 68.1 | 70.1 | 28.9 | 21.3 | 26.2 | 19.6 |
| Queue Length 50th (ft) | 17 | ~769 | 0 | 137 | ~210 | 70 | 91 | 18 | 29 |
| Queue Length 95th (ft) | m17 | m#714 | m0 | m166 | #841 | 117 | 172 | 34 | 82 |
| Internal Link Dist (ft) | | 641 | | | 556 | | 172 | | 354 |
| Turn Bay Length (ft) | 150 | | | 150 | | | | 100 | |
| Base Capacity (vph) | 280 | 2078 | 742 | 264 | 2359 | 581 | 611 | 658 | 482 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 442 | 0 | 0 | 0 | 5 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 1.07 | 0.28 | 0.77 | 1.23 | 0.21 | 0.42 | 0.10 | 0.23 |

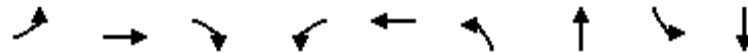
Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues
3: Crystal Street & Alameda Avenue

2040 Total PM.syn

03/12/2020



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|-------------------------|------|-------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 129 | 2229 | 206 | 202 | 2358 | 124 | 256 | 65 | 108 |
| v/c Ratio | 0.46 | 1.07 | 0.28 | 0.82 | 1.00 | 0.26 | 0.42 | 0.10 | 0.22 |
| Control Delay | 27.7 | 52.5 | 1.2 | 68.1 | 32.2 | 28.9 | 21.3 | 26.2 | 19.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 37.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 27.7 | 52.5 | 1.2 | 68.1 | 70.1 | 28.9 | 21.3 | 26.2 | 19.6 |
| Queue Length 50th (ft) | 17 | ~769 | 0 | 137 | ~210 | 70 | 91 | 18 | 29 |
| Queue Length 95th (ft) | m17 | m#714 | m0 | m166 | #841 | 117 | 172 | 34 | 82 |
| Internal Link Dist (ft) | | 641 | | | 556 | | 172 | | 354 |
| Turn Bay Length (ft) | 150 | | | 150 | | | | 100 | |
| Base Capacity (vph) | 280 | 2078 | 742 | 264 | 2359 | 581 | 611 | 658 | 482 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 442 | 0 | 0 | 0 | 5 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 1.07 | 0.28 | 0.77 | 1.23 | 0.21 | 0.42 | 0.10 | 0.23 |

Intersection Summary













- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

2021 Total PM.syn

4: Sable Boulevard & Alameda Avenue

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 151 | 1471 | 218 | 91 | 1486 | 218 | 174 | 362 | 56 | 339 | 514 | 154 |
| v/c Ratio | 0.62 | 0.56 | 0.24 | 0.26 | 0.62 | 0.26 | 0.39 | 0.50 | 0.12 | 0.55 | 0.61 | 0.32 |
| Control Delay | 48.4 | 12.3 | 2.4 | 13.1 | 28.2 | 7.4 | 33.3 | 49.5 | 0.6 | 36.0 | 48.2 | 9.7 |
| Queue Delay | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 48.4 | 12.3 | 2.4 | 13.1 | 28.2 | 7.4 | 33.3 | 49.5 | 0.6 | 36.0 | 48.2 | 9.7 |
| Queue Length 50th (ft) | 87 | 107 | 2 | 15 | 339 | 26 | 53 | 146 | 0 | 109 | 207 | 8 |
| Queue Length 95th (ft) | m136 | 173 | m24 | 27 | 426 | 82 | 81 | 198 | 0 | 150 | 268 | 65 |
| Internal Link Dist (ft) | | 556 | | | 548 | | | 1128 | | | 399 | |
| Turn Bay Length (ft) | 175 | | 175 | 175 | | 100 | 275 | | 265 | 150 | | 150 |
| Base Capacity (vph) | 315 | 2638 | 909 | 353 | 2388 | 829 | 454 | 722 | 451 | 630 | 848 | 487 |
| Starvation Cap Reductn | 0 | 151 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.48 | 0.59 | 0.24 | 0.26 | 0.62 | 0.26 | 0.38 | 0.50 | 0.12 | 0.54 | 0.61 | 0.32 |

Intersection Summary













m Volume for 95th percentile queue is metered by upstream signal.

Queues

2040 Total PM.syn

4: Sable Boulevard & Alameda Avenue

03/12/2020

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Group Flow (vph) | 212 | 2116 | 313 | 128 | 2158 | 318 | 249 | 517 | 74 | 494 | 749 | 217 |
| v/c Ratio | 0.91 | 0.78 | 0.33 | 0.52 | 0.89 | 0.38 | 0.82 | 0.87 | 0.18 | 0.96 | 0.92 | 0.47 |
| Control Delay | 72.7 | 12.8 | 3.0 | 19.4 | 37.5 | 11.8 | 56.1 | 69.1 | 1.0 | 67.1 | 66.4 | 21.4 |
| Queue Delay | 0.0 | 0.3 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 72.7 | 13.1 | 3.0 | 19.4 | 39.9 | 11.8 | 56.1 | 69.1 | 1.0 | 67.1 | 66.4 | 21.5 |
| Queue Length 50th (ft) | 152 | 168 | 9 | 21 | 605 | 78 | 80 | 229 | 0 | 172 | 331 | 63 |
| Queue Length 95th (ft) | m155 | m164 | m9 | 37 | 679 | 149 | #127 | #320 | 0 | #276 | #446 | 144 |
| Internal Link Dist (ft) | | 556 | | | 548 | | | 1128 | | | 399 | |
| Turn Bay Length (ft) | 175 | | 175 | 175 | | 100 | 275 | | 265 | 150 | | 150 |
| Base Capacity (vph) | 237 | 2723 | 936 | 248 | 2419 | 837 | 304 | 597 | 401 | 517 | 817 | 464 |
| Starvation Cap Reductn | 0 | 148 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 159 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.89 | 0.82 | 0.33 | 0.52 | 0.95 | 0.38 | 0.82 | 0.87 | 0.18 | 0.96 | 0.92 | 0.47 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

5: Sable Boulevard & Centrepont Drive

03/12/2020



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 102 | 191 | 78 | 116 | 83 | 448 | 42 | 50 | 772 |
| v/c Ratio | 0.52 | 0.64 | 0.40 | 0.36 | 0.20 | 0.21 | 0.04 | 0.09 | 0.39 |
| Control Delay | 46.6 | 26.9 | 31.9 | 27.8 | 11.9 | 10.4 | 0.1 | 14.0 | 13.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 46.6 | 26.9 | 31.9 | 27.8 | 11.9 | 10.4 | 0.1 | 14.0 | 13.8 |
| Queue Length 50th (ft) | 55 | 46 | 35 | 21 | 21 | 66 | 0 | 13 | 131 |
| Queue Length 95th (ft) | 97 | 97 | 65 | 45 | 49 | 106 | 0 | 37 | 211 |
| Internal Link Dist (ft) | | 248 | | 590 | | 458 | | | 1128 |
| Turn Bay Length (ft) | | | 100 | | 125 | | 125 | 175 | |
| Base Capacity (vph) | 245 | 533 | 199 | 720 | 418 | 2161 | 1037 | 571 | 1971 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.42 | 0.36 | 0.39 | 0.16 | 0.20 | 0.21 | 0.04 | 0.09 | 0.39 |
| Intersection Summary | | | | | | | | | |

Queues

2040 Total PM.syn

5: Sable Boulevard & Centrepoint Drive

03/12/2020

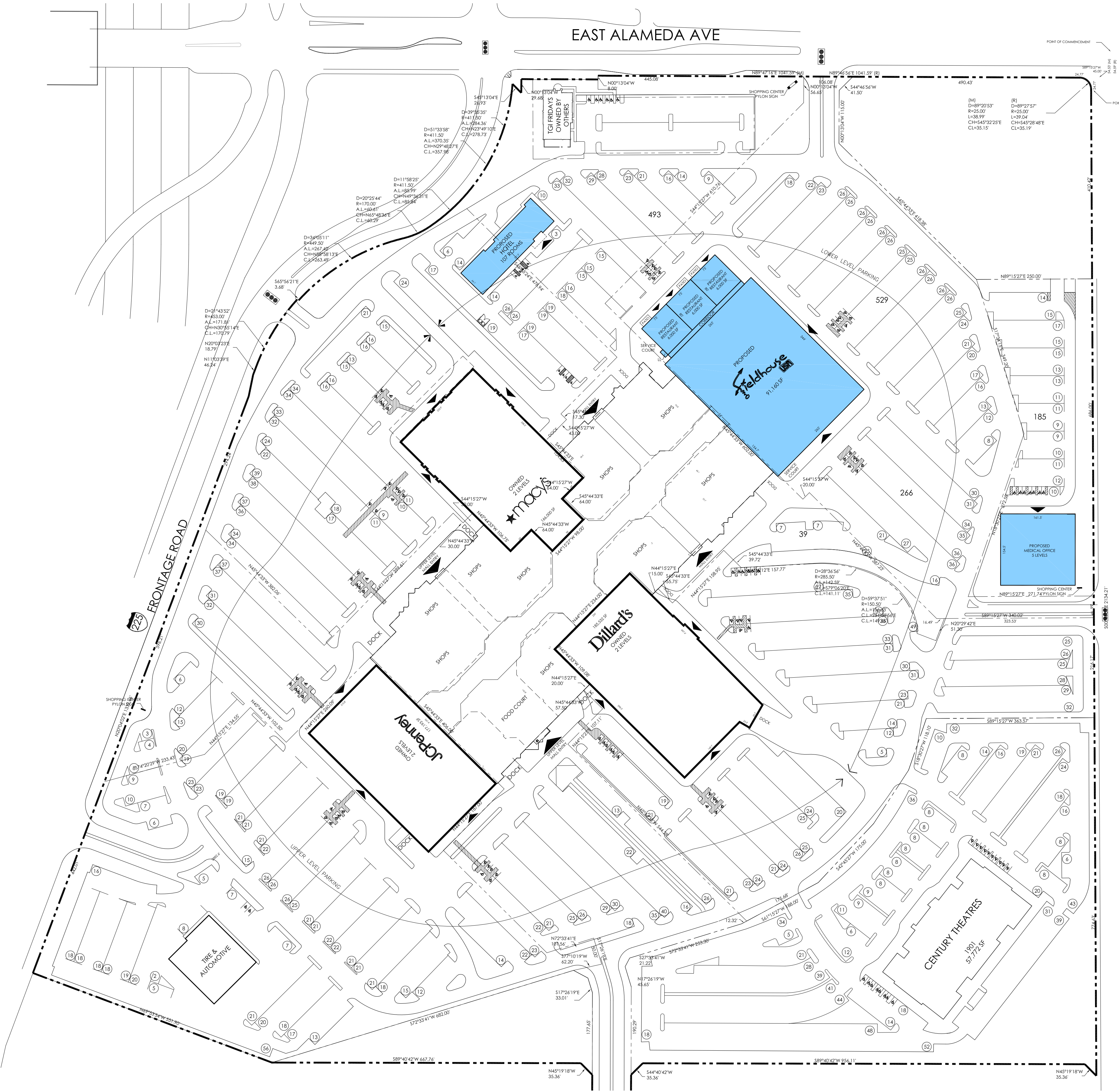
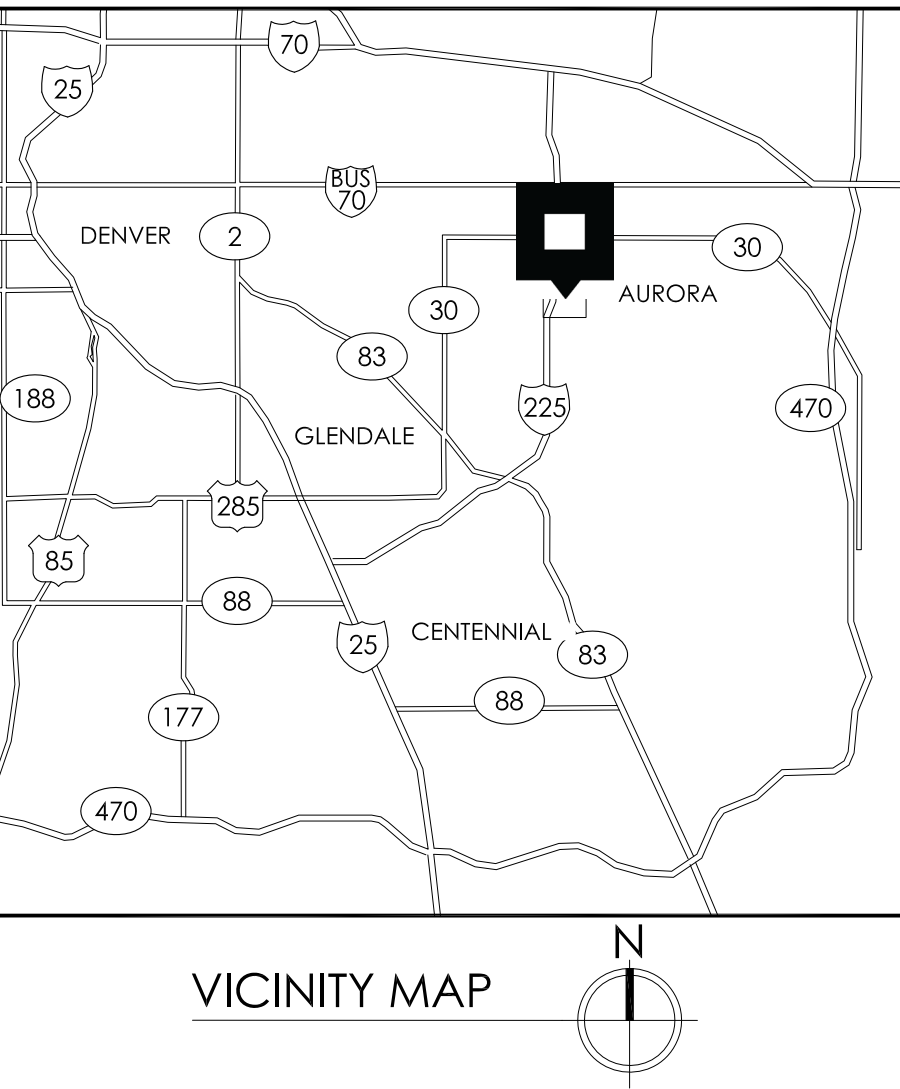


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | NBR | SBL | SBT |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph) | 95 | 176 | 110 | 131 | 80 | 632 | 58 | 72 | 1076 |
| v/c Ratio | 0.35 | 0.64 | 0.50 | 0.31 | 0.29 | 0.32 | 0.06 | 0.13 | 0.54 |
| Control Delay | 29.9 | 28.6 | 34.9 | 21.5 | 16.0 | 13.9 | 0.1 | 14.3 | 15.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 29.9 | 28.6 | 34.9 | 21.5 | 16.0 | 13.9 | 0.1 | 14.3 | 15.7 |
| Queue Length 50th (ft) | 43 | 44 | 51 | 19 | 23 | 109 | 0 | 19 | 206 |
| Queue Length 95th (ft) | 76 | 102 | 86 | 43 | 53 | 171 | 0 | 47 | 314 |
| Internal Link Dist (ft) | | 248 | | 590 | | 458 | | | 1128 |
| Turn Bay Length (ft) | | | 100 | | 125 | | 125 | 175 | |
| Base Capacity (vph) | 274 | 420 | 221 | 724 | 274 | 1964 | 935 | 543 | 1996 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.35 | 0.42 | 0.50 | 0.18 | 0.29 | 0.32 | 0.06 | 0.13 | 0.54 |
| Intersection Summary | | | | | | | | | |

APPENDIX F

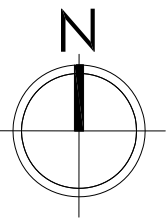
Site Plan

TOWN CENTER
AT AURORA™



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DEVELOPMENT PLAN DP18



TOWN CENTER AT AURORA
14200 E ALAMEDA AVE
AURORA, CO 80012
CORP# 004820

**WASHINGTON
PRIME GROUP**

MODIFIED: December 10, 2019