

Traffic Impact Study Report

455 Hickey Boulevard

Daly City, California

January 31, 2023



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EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis conducted for the proposed office development at 455 Hickey Boulevard in Daly City, as shown in **Figure 1**. The proposed project would replace the existing 81,460 square foot office building, parking facilities with one of two development alternatives.

Project Alternative 1 would construct a new 180,000 square feet (sq. ft.) medical office building with a parking structure. Project Alternative 2 would construct a new 280,000 sq. ft. tech office building with a parking structure.

The project site is accessed via a driveway on Hickey Boulevard and one on Serravista Avenue.

Project Trip Generation

Project trip generation for the proposed project was estimated based on published trip generation rates from the Institute of Transportation Engineers (ITE) publication *Trip Generation 10th Edition*. The project site is currently occupied by an existing 81,460 square foot office building that would be replaced.

The proposed Alternative 1 is expected to generate 5,471 net new daily trips, including 406 net new a.m. peak hour trips (309 in, 97 out) and 529 net new p.m. peak hour trips (159 in, 370 out). The proposed Alternative 2 is expected to generate 1,934 net new daily trips, including 231 net new a.m. peak hour trips (199 in, 32 out) and 228 net new p.m. peak hour trips (36 in, 192 out).

Existing Conditions

Under this scenario, 15 of the 17 study intersections operate at acceptable LOS D or better during both peak hours. The intersection of Hickey Boulevard and Skyline Boulevard operates at LOS E during the a.m. peak hour. The intersection of Serramonte Boulevard at Junipero Serra Boulevard operates at LOS F during both peak hours.

Existing plus Project Alternative 1 Conditions

Under this scenario, 14 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours in accordance with City standards.

The intersection of Hickey Boulevard at Gellert Boulevard degrades in the a.m. peak hour from LOS D to LOS E with an increase of 6.7 seconds of delay. To mitigate this impact, it is recommended to convert one of the northbound through lanes to a shared through-right lane given the heavy northbound right turn volumes. This mitigation improves delay to better than existing conditions. This intersection meets City LOS Policy with the proposed mitigation.

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps continues to operate at LOS F during both peak hours. The project adds 0.2 seconds of delay in the a.m. peak hour and 4.4 seconds of delay in the p.m. peak hour. A feasible mitigation measure to reduce overall delay is to add a westbound left turn lane. With this improvement, the delay in the a.m. peak hour

is 116.8, which is 16.9 seconds less than existing conditions, and 173.6 seconds in the p.m. peak hour, which is 11.1 seconds less than existing conditions.

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 degrades from LOS E with 72.8 seconds to LOS F with 82.7 seconds during the a.m. peak hour. One option to reduce total delay is to convert the eastbound right turn lane to a shared through-right lane, thus providing a second through lane. With this physical improvement, delay is reduced to 67.5 seconds.

These two intersections are operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since these intersections currently exist below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Existing plus Project Alternative 2 Conditions

Under this scenario, 15 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours, thus meeting the City's LOS policy.

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 continues to operate at LOS E with an increase of 7.1 seconds of delay. Based on the physical intersection improvements described in the previous section for Project Alternative 1, delay can be improved to 6.2 seconds less than existing conditions.

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps continues to operate at LOS F during both peak hours with an increase of 2.1 seconds of delay in the p.m. peak hour. Based on the physical intersection improvements described in the previous section for Project Alternative 1, delay is reduced to 13.2 seconds less than existing conditions.

These two intersections are operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since these intersections currently exist below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Cumulative (2035) Conditions

Under this scenario, 14 of the 17 study intersections operate at acceptable LOS D or better during both peak hours. The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 operates at LOS F during the a.m. peak hour. The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps operates at LOS F during both peak hours. The intersection of Hickey Boulevard & I-280 northbound ramps operates at LOS E with 56.2 seconds of delay during the p.m. peak hour.

Cumulative (2035) plus Project Alternative 1 Conditions

Under this scenario, 14 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours. The three intersections that operate below LOS D in the Cumulative Condition continue to operate at the same LOS in the Cumulative plus Project Alternative 1 Conditions.

The intersection of Hickey Boulevard and Skyline Boulevard/SR 35 continues to operate at LOS F during the a.m. peak hour with an additional 9.2 seconds of delay. The physical intersection improvements described in the previous section for Existing plus Project Alternative 1 Conditions would reduce this delay to 85.5 seconds, which is an improvement over Cumulative No Project conditions.

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps operates at LOS F during both peak hours. The project adds 0.1 seconds of delay in the a.m. peak hour and 3.7 seconds of additional delay in the p.m. peak hour. The mitigation measure described in the previous section for Existing plus Project Alternative 1 Conditions would reduce the delay in the a.m. peak hour to 14.1 seconds less than cumulative conditions. In the p.m. peak hour the delay is reduced to 43.2 seconds less than cumulative conditions.

The intersection of Hickey Boulevard & I-280 northbound on-ramps continues to operate at LOS E with an additional 4.2 seconds of delay. There are two identified mitigations and either of them would improve level of service to D, however, they may not be desirable or feasible. One mitigation is to add a southbound left turn pocket, which will reduce delay in the p.m. peak hour to 47.0 seconds. A different mitigation is to add a westbound left turn lane, which will reduce delay to 54.6 seconds.

The improvements identified for these three intersections mitigates the project's impact. These three intersections are operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since these intersections currently exists below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Cumulative (2035) plus Project Alternative 2 Conditions

Under this scenario, 14 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours. The three intersections that operate below LOS D in the Cumulative Condition, continue to operate at the same LOS in the Cumulative plus Project Alternative 2 Conditions.

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 continues to operate at LOS F during the a.m. peak hour with an additional 5.0 seconds of delay. The physical intersection improvements described in the previous section for Existing plus Project Alternative 1 Conditions would reduce this delay to less than cumulative conditions.

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps operates at LOS F during both peak hours. The project adds 1.8 seconds of delay in the p.m. peak hour. The mitigation measure described in the previous section reduces delay by 45.3 seconds less than cumulative conditions.

The intersection of Hickey Boulevard & I-280 Northbound Ramps continues to operate at LOS E with an additional 1.3 seconds of delay during the p.m. peak hour. The mitigation described in the previous section would reduce this delay to below cumulative conditions.

The improvements identified for these three intersections mitigates the project's impact. These three intersections are operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since these intersections currently exists below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Vehicle Miles Traveled

The project is located in Travel Analysis Zone (TAZ) #1918 in the City/County Association of Governments of San Mateo County (C/CAG) model, which is tagged as a Transit Priority Area (TPA) under C/CAG geographical definitions. A TPA is defined as being within one half mile of a transit stop in a high quality corridor with a frequency of service interval of 15minutes or less during the morning and afternoon peak commute periods. Since the project is located within a TPA, the project is screened out from VMT analysis. **This meets Caltrans and C/CAG policy for determination of a less than significant impact.**

Transportation Demand Management Policy

Since this proposed project is located in a TPA, as identified in the VMT analysis above, and defined as a large non-residential project, the target trip reduction is 25% based on the C/CAG TDM Policy. The TDM Policy identifies nine measures which are required of all projects. These required measures add up to the goal of 25% reduction. The nine measures are as follows:

1. Free/Preferential Parking for Carpools
2. TDM Coordinator/Contact Person
3. Actively Participate in Commute.org or a Transportation Management Association Equivalent
4. Carpool or Vanpool Program
5. Transit or Rideshare Passes/Subsidies
6. Pre-Tax Transportation Benefits
7. Secure Bicycle Storage
8. Design Streets to Encourage Bike/Pedestrian Access
9. Showers, Lockers and Changing Rooms for Cyclists

Site Access

Vehicles would access the project site via a driveway on Hickey Boulevard and a driveway on Serravista Avenue. A third access point is restricted to City utility access at the southern edge of the project. Truck access to a loading area is provided via the driveway at Serravista Avenue with appropriate turning radii.

Two vehicle pick-up/drop-off zones are proposed with one at the entry plaza to the building on Serravista Avenue and one at the first level of the parking garage accessible via Hickey Boulevard entrance. Based on Project Alternative 1, it is recommended that at a minimum the drop off space accommodate eight vehicles. Based on Project Alternative 2, it is recommended that at a minimum the drop off space accommodate five vehicles. The project is currently proposing space for five vehicles at the entry plaza on Serravista, and space for five vehicles within the parking garage which is sufficient for both alternatives.

Pedestrian access to the project site is located at the Entry Plaza on Serravista Avenue. Pedestrian access is provided through connections via adequate sidewalks on Serravista Avenue, which connect to sidewalks on Gellert Boulevard and Hickey Boulevard.

Bicyclists can access the site either as a vehicle at the designated driveways or as a pedestrian at the Entry Plaza. The bicycle locker facility is located on the first parking garage level accessible by Hickey Boulevard adjacent to the elevators. Gellert Boulevard south of Serravista Avenue has marked Class II bike lanes and Hickey Boulevard is a marked Class III bicycle route. Serravista Avenue is a low-volume residential roadway that functions easily as a bikeway without specific designation.

Site access for vehicles, trucks, pedestrians and bicycles are **adequate**.

Local Operational Analysis

The operational analysis reveals that in the a.m. peak hour, the queue from northbound vehicles on Gellert Boulevard approaching Hickey Boulevard is 697 feet long and blocks the downstream one-way stop-controlled intersection of Serravista Avenue, which is only 300 feet away.

To reduce this queue, it is recommended that one of the northbound through lanes is converted to a shared through-right lane, to allow for a dual right turn lanes to accommodate heavy right turn volumes. This is the same mitigation measure identified to reduce average vehicle delay.

Reducing the queue at Hickey Boulevard and Gellert Boulevard will improve operations at the intersection of Gellert Boulevard and Serravista Avenue. Vehicles entering and exiting Serravista Avenue will no longer be blocked by the queue resulting in easier access through the intersection.

It is noted that the southbound left turn has a stop bar and STOP legend pavement markings. This can be confusing by leading southbound drivers to believe that the intersection is an all-way stop. It is recommended that this STOP bar and legend be removed.

Another operational issue at this intersection is pedestrian access and safety as this is a major crossing to connect Gellert Park with the residential and commercial area. This pedestrian access is also needed to

access the bus stop on the west side of Gellert Avenue. To enhance pedestrian access and safety at this location, it is recommended to install flashing pedestrian crossing signs and curb bulbouts at the corners.

Parking

The project will provide a total of 900 parking spaces which meet City requirements and exceeds parking generation determined by the Institute of Transportation Engineers. The proposed supply of vehicle parking types such as accessible, electric vehicles charging stations and future stations and bicycle parking is **more than adequate**.

Pedestrian, Bicycle, and Transit Impacts

The project will connect to existing pedestrian facilities and will need to provide on-site circulation through a variety of continuous paths and crosswalks. The project is not expected to create any disruptions or inconsistencies with existing pedestrian facilities or plans. Pedestrians and bicyclists can access the closest transit stops on Gellert Boulevard via a continuous path of sidewalks. However, it is recommended that the project implement pedestrian crossing safety improvements at the intersection of Gellert Boulevard and Serravista Avenue to facilitate access to the transit stop on the west side of Gellert Boulevard. The project is expected to add trips to the existing transit services, which can be accommodated by the existing transit capacity. It is recommended that SamTrans is contacted to determine if the bus stop along the project frontage on Hickey Boulevard requires any modifications or enhancements as there currently is no signage. Therefore, the project is estimated to have a **less than significant** impact to pedestrian, bicycle, and transit facilities.

Recommendations

Based on the findings in this report, TJKM recommends the following:

- It is recommended that the northbound through lane at Gellert Boulevard and Hickey Boulevard be converted to a shared through-right turn lane.
- It is recommended that a flashing pedestrian crossing sign along with curb bulbouts be installed at the intersection of Gellert Boulevard and Serravista Avenue.
- It is recommended that Caltrans be consulted to determine if improvements are needed at the following intersections since they are already operating below LOS D:
 - Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound
 - Hickey Boulevard and Skyline Boulevard/SR-35
 - Hickey Boulevard & I-280 northbound on-ramps

If improvements are needed, the project should contribute a fair share percentage.

- It is recommended that this project implement all nine required TDM measures identified on the C/CAG TDM checklist as outlines in section 7.2. and is summarized as follows:
 - Free/Preferential Parking for Carpools
 - TDM Coordinator/Contact Person
 - Actively Participate in Commute.org or a Transportation Management Association Equivalent
 - Carpool or Vanpool Program
 - Transit or Rideshare Passes/Subsidies
 - Pre-Tax Transportation Benefits
 - Secure Bicycle Storage
 - Design Streets to Encourage Bike/Pedestrian Access
 - Showers, Lockers and Changing Rooms for Cyclists
- It is recommended that the project's vehicle drop-off/pick-up zone accommodate at least eight vehicles in the case of Project Alternative 1, and five vehicles in the case of Project Alternative 2. Signage should be provided which limits parking to a 10 minute loading zone.
- It is recommended that SamTrans be consulted to determine if a bus stop continues to exist on Hickey Boulevard along the project frontage and if additional improvements are needed at this location to accommodate this bus stop.
- It is recommended that the STOP bar and legend is removed from the southbound left turn lane at Gellert Boulevard at Serravista Avenue.

1.0 INTRODUCTION

This report presents the results of the transportation impact analysis conducted for the proposed office development at 455 Hickey Boulevard in Daly City, as shown in **Figure 1**. The proposed project would replace the existing 81,460 square foot office building and its parking facilities with one of two development alternatives.

Project Alternative 1 would construct a new 180,000 square feet (sq. ft.) medical office building with a parking structure. Project Alternative 2 would construct a new 280,000 sq. ft. tech office building with a parking structure.

Transportation impacts include vehicle miles travelled (VMT) analysis in accordance with California Environmental Quality Act (CEQA), as well as local impacts measured in terms of vehicle delay and levels of service at intersections and transportation operations issues such as site access, impacts to active transportation modes and vehicle traffic operations.

1.1 STUDY INTERSECTIONS AND SCENARIOS

TJKM evaluated traffic conditions at seventeen study intersections and two project driveways during the a.m. and p.m. peak hours for a typical weekday. The study intersections were selected based on TJKM's working knowledge of the area with input and approval from Daly City staff.

New peak hour turning movement counts were collected in July 2021. The peak periods observed were between 7:00-9:00 a.m. and 4:00-6:00 p.m. These counts were noted to be low due to irregular traffic volumes resulting from 2020-2021 pandemic conditions. Historical counts at two intersections, at Hickey Boulevard & Skyline Boulevard in November 2017 and at Hickey Boulevard & Junipero Serra Boulevard in November 2019, were used as the basis of adjusting the new turning movement volumes to estimated typical volumes. These adjusted volumes are the basis for analyzing Existing Conditions scenarios. The study intersections, associated traffic controls and responsible jurisdiction are as follows:

1. Serravista Avenue & Gellert Boulevard (one-way stop) – City of Daly City
2. Serravista Avenue & Marbly Avenue (one-way stop) - City of Daly City
3. Serravista Avenue & Victoria Street (two-way stop) – City of Daly City
4. Serravista Avenue & Project Access (one-way stop) – City of Daly City
5. Hickey Boulevard & Junipero Serra Boulevard (signal) – City of South San Francisco
6. Hickey Boulevard & I-280 Northbound Ramps (signal) - Caltrans
7. Hickey Boulevard & I-280 Southbound Ramps (signal) - Caltrans
8. Hickey Boulevard & Project Access (one-way stop) – City of Daly City
9. Hickey Boulevard & Gellert Boulevard (signal) – City of Daly City
10. Hickey Boulevard & Callan Boulevard (signal) – City of Daly City
11. Hickey Boulevard & Campus Drive (signal) – City of Daly City

12. Hickey Boulevard & Skyline Boulevard/SR-35 (signal) - Caltrans
13. Gellert Boulevard & Victoria Street (all-way stop) – City of Daly City
14. Gellert Boulevard & Serramonte Boulevard (signal) – City of Daly City
15. Serramonte Boulevard & I-280 Northbound Ramps (signal) - Caltrans
16. Serramonte Boulevard & I-280 Southbound Ramps (signal) - Caltrans
17. Serramonte Boulevard & Junipero Serra Boulevard/I-280 Northbound Ramps (signal) - Caltrans

Figure 1 illustrates the study intersections and the vicinity map of the proposed project. The detailed inset map shows the existing and proposed project driveways.

This study addresses the following six traffic scenarios:

- **Existing Conditions** – This scenario evaluates the study intersections based on the adjusted existing turning movement counts.
- **Existing plus Project Alternative 1 Conditions** – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed Project Alternative 1.
- **Existing plus Project Alternative 2 Conditions** – This scenario is identical to Existing Conditions, but with the addition of traffic from the proposed Project Alternative 2.
- **Cumulative Conditions** – This scenario is similar to the Existing Conditions but with future turning movement counts which were derived from the City of Daly City’s Traffic Demand Model Buildout Year 2035 based on land uses identified in the City’ General Plan.
- **Cumulative plus Project Alternative 1 Conditions** – This scenario is identical to Cumulative Conditions, but with the addition of traffic from the proposed Project Alternative 1.
- **Cumulative plus Project Alternative 2 Conditions** – This scenario is identical to Cumulative Conditions, but with the addition of traffic from the proposed Project Alternative 2.

Figure 1: Vicinity Map

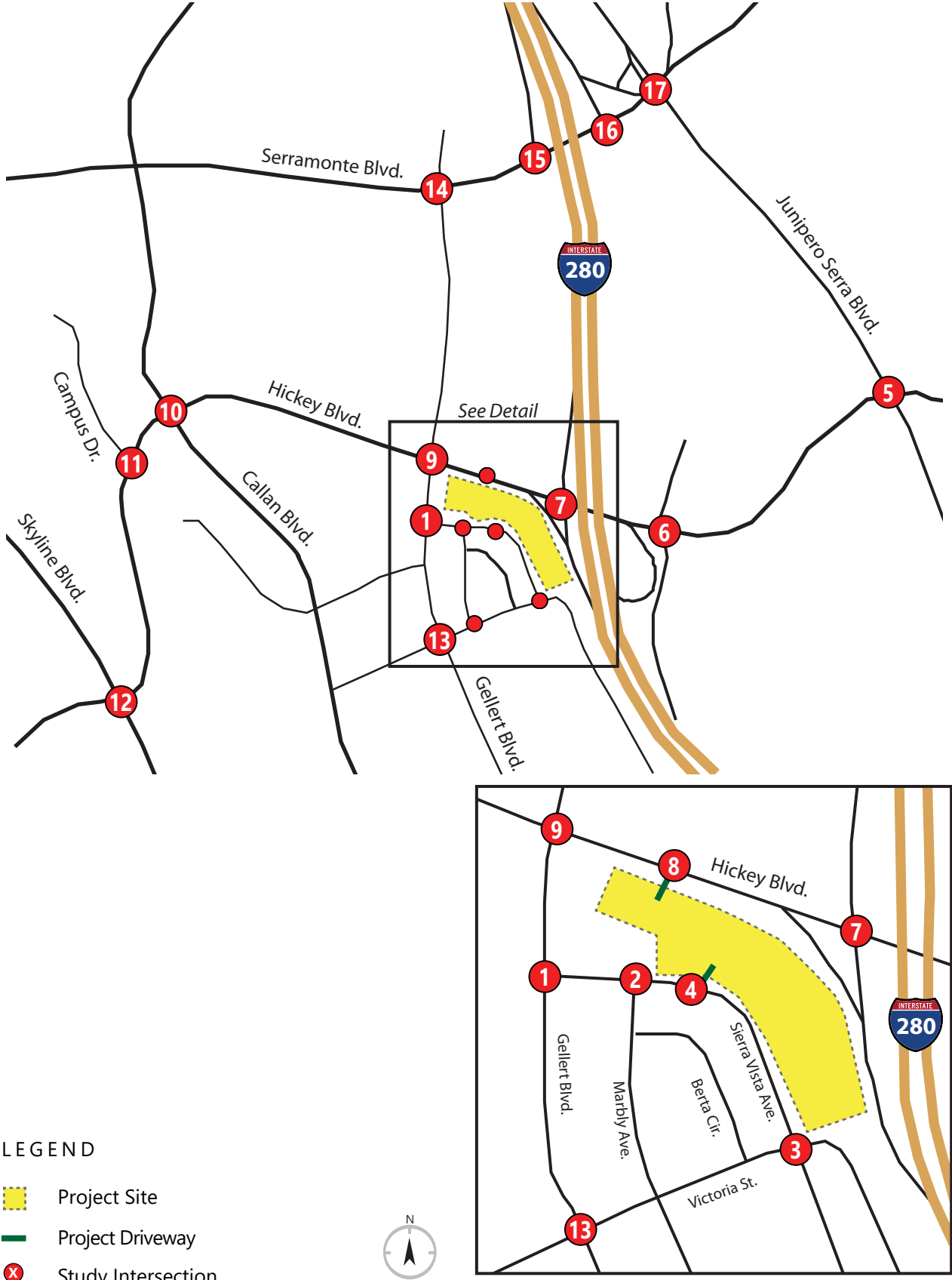


Figure 2a: Site Plan, Alternative 1



SITE PLAN - TECH

455 HICKEY
Daly City, CA 08.08.2022



Figure 2b: Site Plan, Alternative 2



SITE PLAN - MOB

455 HICKEY
Daly City, CA 08.08.2022



2.0 STUDY METHODOLOGY

Transportation impacts related to the proposed project were evaluated for environmental significance as defined in the California Environmental Quality Act (CEQA). Additional analysis include evaluation of conformity with local policies, impact on traffic operations and site access.

As of July 1, 2020, Vehicles Miles Traveled (VMT) is the new measure of traffic impact significance for CEQA purposes. According to a technical advisory published by the Governor's Office of Planning and Research (OPR), vehicle delay is no longer an appropriate measure of environmental impact. The City/County Association of Governments (C/CAG) of San Mateo has adopted policies in accordance with the technical advisory published by the OPR. Although intersection level of service (LOS) is no longer be used to determine significant impacts for CEQA purposes, it can be used to determine conformity with the City of Daly City's adopted General Plan.

2.1 VEHICLE MILES TRAVELED

Reducing Vehicle Miles Travelled (VMT) per capita is an important component for achieving the state's long-term climate goals since half of greenhouse gas emissions are derived from transportation sources. The Governor's Office of Planning and Research (OPR) published the *Technical Advisory on Evaluating Transportation Impacts in CEQA*. This document provides the basis for VMT analysis for this project.

Caltrans also has adopted VMT as the primary metric for traffic impact studies based on the updated Transportation Impact Study Guidelines dated May 20, 2020. These new guidelines are also based on the OPR Technical Advisory document.

The City of Daly City has not adopted formal VMT guidelines. The City/County Association of Governments of San Mateo County (C/CAG) guidelines are used, since Daly City is a member agency.

C/CAG provided a *SB 743 Implementation Decisions* document, published on September 2021 which consists of VMT thresholds and screening criteria for projects within San Mateo County. Within these guidelines, there is a screening criteria which states that if a project is located within a transit priority area (TPA), then the project is exempt from VMT analysis. This is the criteria that is applicable to this project.

2.2 LEVEL OF SERVICE ANALYSIS METHODOLOGY

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience and safety. The operational LOS are given letter designations from A to F, with A representing the free-flow operating conditions and F representing the severely congested flow with high delays. Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets. The following sections provide detailed study methodology based on the type of intersections.

Signalized Intersections

The study intersections were analyzed using the Highway Capacity Manual 6th Edition for signalized intersections (HCM 6th), except two signalized intersections. The intersections of Hickey Boulevard at Skyline Boulevard and the intersection of Serramonte Boulevard & Junipero Serra Boulevard were evaluated using HCM method 2000. This is due to limitations with HCM 6th Edition with respect to the geometric configurations at these intersections. These methodologies determines LOS based on average control delay per vehicle for the overall intersection during peak hour intersection operating conditions.

Table 1 summarizes the relationship between the control delay and LOS for signalized intersections. The LOS assessment under all scenarios is based on current traffic controls and optimized signal timing unless otherwise noted.

Table 1: Level of Service Definitions for Signalized Intersections

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: Highway Capacity Manual

Unsignalized Intersections

LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At one- or two-way stop controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. **Table 2** summarizes the relationship between delay and LOS for stop-controlled intersections. The delay ranges for unsignalized intersections are lower than for signalized intersections, as drivers expect less delay at stop-controlled intersections.

Each of the study intersections were analyzed using Synchro Version 10 software. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted.

Table 2: Level of Service Definitions for Stop Controlled Intersections

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: Highway Capacity Manual

2.3 LEVEL OF SERVICE STANDARDS

In accordance with recently updated CEQA requirements, the standards and levels of significance described below are used to determine compliance with goals and policies for each jurisdiction. They are not used for findings of significance under CEQA. It is observed that as jurisdictions are updating their policies and General Plans, levels of service standards are being replaced with VMT as the metric that satisfies overall goals of multi-modal transportation and transportation safety. This section describes the level of service policy of each jurisdiction.

City of Daly City Intersections

A majority of the study intersections are operated by the City of Daly City. According to the Circulation Element of the City’s adopted General Plan 2030 (adopted March 25, 2013), the level of service standard is LOS D at all intersections.

Policy CE-1 of the General Plan states: Use the City’s traffic model and environmental review process outlined by the California Environmental Quality Act (CEQA) to ensure that the City’s existing roadway network is relatively free flowing during peak traffic periods.

Task CE-1.6 of the General Plan states: Incorporate a Level of Service (LOS) into Daly City’s Local Thresholds of Significance Guidelines and use the standard as an evaluation measure for the traffic impacts created by new discretionary projects and to identify future roadway and intersection improvements in the City’s Capital Improvement Program. This standard shall be applied as follows: Require that a minimum LOS D be maintained at all principal intersections.

Caltrans Intersections

Per the updated Transportation Impact Study Guidelines dated May 20, 2020, Caltrans no longer holds a level of service policy. VMT analysis replaces level of service, the prior widely applied metric used for CEQA transportation analysis. Caltrans' primary review focus for a land use project's impacts is now VMT.

City of Colma Intersections

The signalized intersection of Serramonte Boulevard & Junipero Serra Boulevard/I-280 Northbound Ramps is located in the City of Colma and operated by Caltrans. According to the City's Mobility Element of the 2040 General Plan (adopted March 2022), Goal M2-5 states the following:

Strive to achieve LOS D as the planned operating condition for all arterial and collector roadway segments ("segments") and intersections, except for (1) those specified segments and intersections for which planned LOS conditions are otherwise established; and (2) segments and intersections that are operating at LOS E or lower at the time an application for a proposed development project is submitted, if no feasible improvements exist to improve the LOS. The Town may permit the then-existing LOS to be the minimum acceptable operating condition for those segments and intersections in category (2), provided that the LOS does not deteriorate further due to the proposed development.

City of South San Francisco Intersections

The signalized intersection of Hickey Boulevard & Junipero Serra Boulevard is located within the City of South San Francisco. According to the City's recently adopted Mobility and Access element of the 2040 General Plan (adopted October 12, 2022), there is no mention of a level of service policy. Policy MOB-3.2 states the following:

Optimize traffic operations on City streets. Optimize traffic operations on City streets while avoiding widening roadways or otherwise pursuing traffic operations changes at expense of multimodal safety, transit reliability, or bicycle and pedestrian comfort.

3.0 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway facilities, bicycle and pedestrian facilities, and available transit service. In addition, traffic volumes and operations are presented for the study intersections, including the results of LOS calculations.

3.1 EXISTING SETTING AND ROADWAY SYSTEM

I-280 is a north south, eight lane freeway with a posted speed limit of 65 miles per hour (mph). The north-south freeway connects Daly City with nearby cities such as San Francisco to the north and San Jose to the south. It also provides access to the greater regional freeway network with direct connections to Interstate 380, US Highway 101, State Route 1, and Skyline Boulevard (SR-35). Bicyclists and pedestrians are not allowed on this facility.

Hickey Boulevard is a generally east west, four lane collector with a posted speed limit of 35 mph. Hickey Boulevard connects the project site to I-280, Junipero Serra Boulevard, and Skyline Boulevard. One existing driveway on the project site connects to Hickey Boulevard. Class III shared lane bike route

markings were recently marked near the project. Sideways and crosswalks are provided in the vicinity of the project, although to the east of the project, sidewalks are provided only on one side.

Gellert Boulevard is a north-south collector roadway with a posted speed limit of 30 mph. Gellert Boulevard is two lanes south of Hickey Boulevard and widens up to six lanes between Hickey Boulevard and Serramonte Boulevard. Class II bike lanes are marked south of Serravista Avenue. Sidewalks are provided on both sides of the roadway.

Junipero Serra Boulevard is a north south, four-to-six lane arterial located to the east of the project. The posted speed limit on Junipero Serra Boulevard is 50 mph south of Hickey Boulevard and 40 mph north of Hickey Boulevard. Junipero Serra Boulevard runs roughly parallel to I-280. Class II bike lanes are marked on a majority of Junipero Serra Boulevard in the vicinity of the project. South of Hickey Boulevard sidewalks are not provided.

Skyline Boulevard/SR-35 is a north-south highway located to the west of the project. South of Hickey Boulevard, Skyline Boulevard/SR-35 is two lanes and has a posted speed limit of 45 mph. North of Hickey Boulevard, Skyline Boulevard widens to six lanes and becomes a freeway with a posted speed limit of 55 mph. There are no designated bicycle or pedestrian facilities.

Serramonte Boulevard is an east west, generally four lane collector with a speed limit of 30 mph, located to the north of the project. Class II Bike Lanes are marked from Serramonte Mall to Callan Boulevard. Sidewalks are provided on both sides of the roadway near the project.

Callan Boulevard is a north-south, two lane local roadway with on-street parking, Class II bike lanes and sidewalks.

Serravista Avenue is a north-south two lane local roadway that turns east-west at the project location. On-street parking and sidewalks are available on both sides of the roadway.

Victoria Street is an east-west two lane local roadway with on-street parking and sidewalks on both sides. Between Gellert Boulevard and Callan Boulevard, Class III shared lane bicycle route markings are provided.

3.2 EXISTING PEDESTRIAN FACILITIES

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal “walkable” community includes wide sidewalks, a mix of land uses such as residential, employment, and shopping opportunities, a limited number of conflict points with vehicle traffic, and easy access to transit facilities, and services.

Pedestrian facilities are comprised of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreation facilities.

The project is located on a primarily commercial corridor, with multiple shopping centers and other commercial uses nearby, as well as bordering a residential area. The existing pedestrian facilities in the study area as shown in **Figure 3a**.

Within the project vicinity, there are sidewalks or other walkways present on one or both sides of most streets, as well as numerous marked crosswalks, and pedestrian signal heads at signalized intersections.

3.3 EXISTING BICYCLE FACILITIES

The City of Daly City adopted the *Walk Bike Daly City* Pedestrian and Bicycle Master Plan in 2020. It contains the policy vision, design guidance, and specific recommendations to guide the development of pedestrian and bicycle facilities to make walking and bicycling safer, more convenient and popular. Bicycle facilities include the following:

- Bike Paths/Multi-use Paths (Class I) – Paved trails that are separated from roadways
- Bike Lanes (Class II) – Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs
- Bike Routes/Bike Boulevards (Class III) – Roadways for shared bicycle use designated by signs or other markings that may or may not include additional pavement width for cyclists
- Separated Bikeways (Class IV) – Bikeways that are physically separated from vehicle traffic by vertical elements, such as grade separation, flexible posts, or parking lanes

The existing bicycle facilities in the study area are shown in **Figure 3b**. There currently are no planned bicycle facilities as several of these facilities were recently installed to complete the bicycle network. Within the project vicinity, there are bike lanes on Gellert Boulevard south of Hickey Boulevard and Callan Boulevard. Class III bike routes are located on Serramonte Boulevard, Hickey Boulevard, Gellert Boulevard north of Hickey Boulevard and Victoria Street

3.4 EXISTING TRANSIT FACILITIES

Transit services within the project vicinity are provided by San Mateo County Transit District (SamTrans) and the Bay Area Rapid Transit system (BART). The existing transit facilities are shown in **Figure 3c**.

SamTrans – SamTrans provides local bus routes within San Mateo County, express routes, and multi-city routes. SamTrans also operates multiple local routes with limited service to high schools. **Table 3** describes weekday and weekend bus services and frequency as they are currently operating.

Within a half-mile of the project, there are several bus stops that serve multiple bus routes. Routes 112 and 120 provide service to Colma BART station. Route 122 provides service to South San Francisco BART and San Francisco State. Route 130 provides service to Daly City BART. Route 35 provides local service to El Camino High School.

According to the SamTrans website, there is an existing bus stop for Route 130 providing service to Daly City BART located along the project frontage on Hickey Boulevard. However, there is no signage for this bus stop. It is recommended that SamTrans be contacted to determine if a stop is currently operating at this location.

BART - BART provides passenger service within the metropolitan Bay Area. BART currently has five main operating lines: Antioch-SFO/Millbrae, Dublin/Pleasanton-Daly City, Berryessa/North San Jose-Richmond, Berryessa/North San Jose-Daly City, and Richmond-Millbrae. There are also connectors to Oakland International Airport (OAK) and San Francisco International Airport (SFO). BART operates between 5:00 a.m. and midnight on weekdays and between 6:00 a.m. and midnight on Saturdays and between 8:00 a.m. and midnight on Sundays. On weekdays, most lines operate at 15-minute intervals through most of the

day and 30-minute intervals after 8:00 p.m. The closest BART station is approximately 1.5 miles east located in South San Francisco just off El Camino Real.

Table 3: Existing Bus Routes

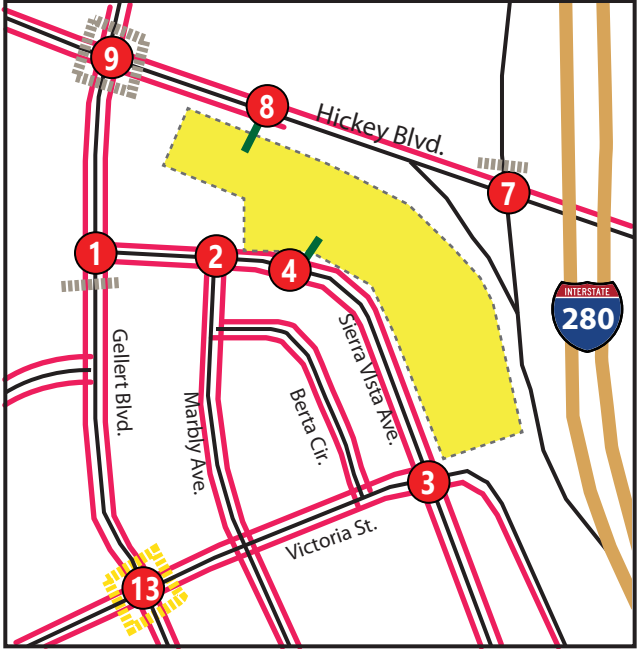
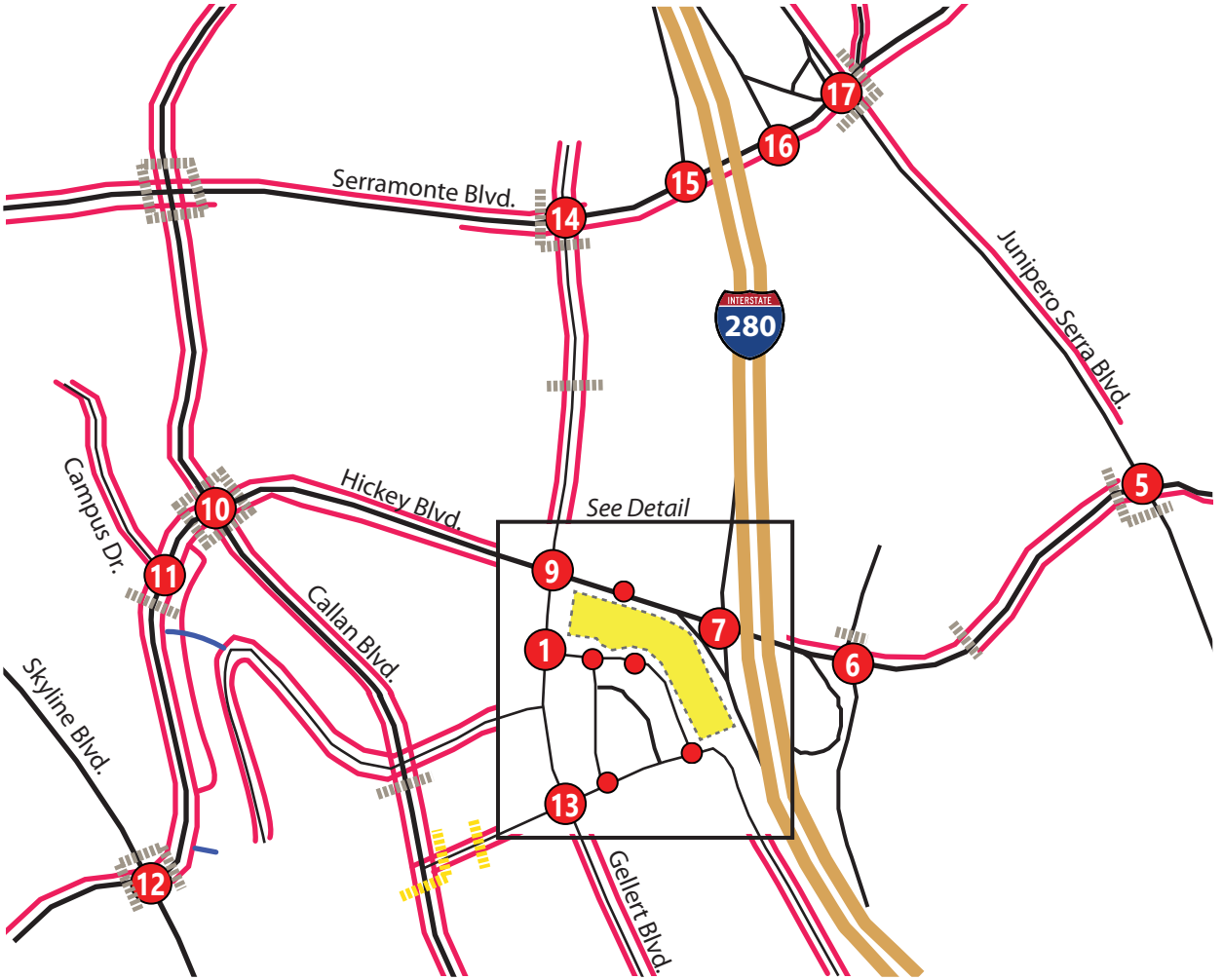
No.	From	To	Weekdays		Saturday		Sunday	
			Operating Hours	Headway (minutes)	Operating Hours	Headway (minutes)	Operating Hours	Headway (minutes)
35 ¹	El Camino High	Warwick / Christen	7:55 – 8:30 a.m., 2:45 – 3:45 p.m.	10	-	-	-	-
112	Colma BART	Linda Mar Park & Ride	6:00 a.m. – 9:45 p.m.	60	8:00 a.m. – 8:45 p.m.	60	8:00 a.m. – 8:45 p.m.	60
120	Colma BART	Brunswick/ Templeton	4:00 a.m. – 11:45 p.m.	10 peak, 30 off-peak	4:00 a.m. – 11:45 p.m.	15-45	4:00 a.m. – 11:00 p.m.	15-45
121	Skyline College	Pope/ Bellevue	6:30 a.m. – 10:30 p.m.	60	7:30 a.m. – 10:30 p.m.	60	7:30 a.m. – 9:00 p.m.	60
122	Stonestown/ SF State	South San Francisco BART	5:15 a.m. – 11:30 p.m.	30	8:00 a.m. – 11:30 p.m.	30	8:00 a.m. – 11:30 p.m.	30
130	Airport/Linden	Daly City BART	5:00 a.m. – midnight	15 peak, 30 off-peak	7:00 a.m. – 9:15 p.m.	30	6:45 a.m. – 8:00 p.m.	30

Notes:

¹ Operates on school days only

Source: www.samtrans.com accessed June 10, 2021.

Figure 3a: Existing Pedestrian Facilities



LEGEND








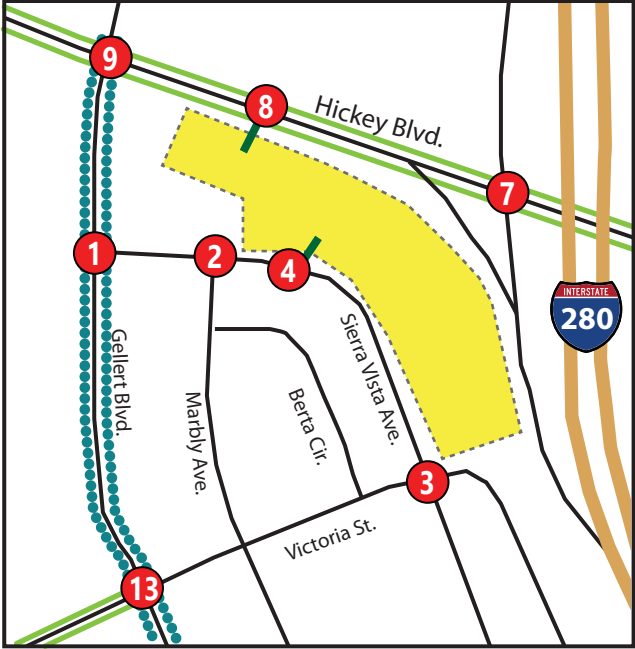
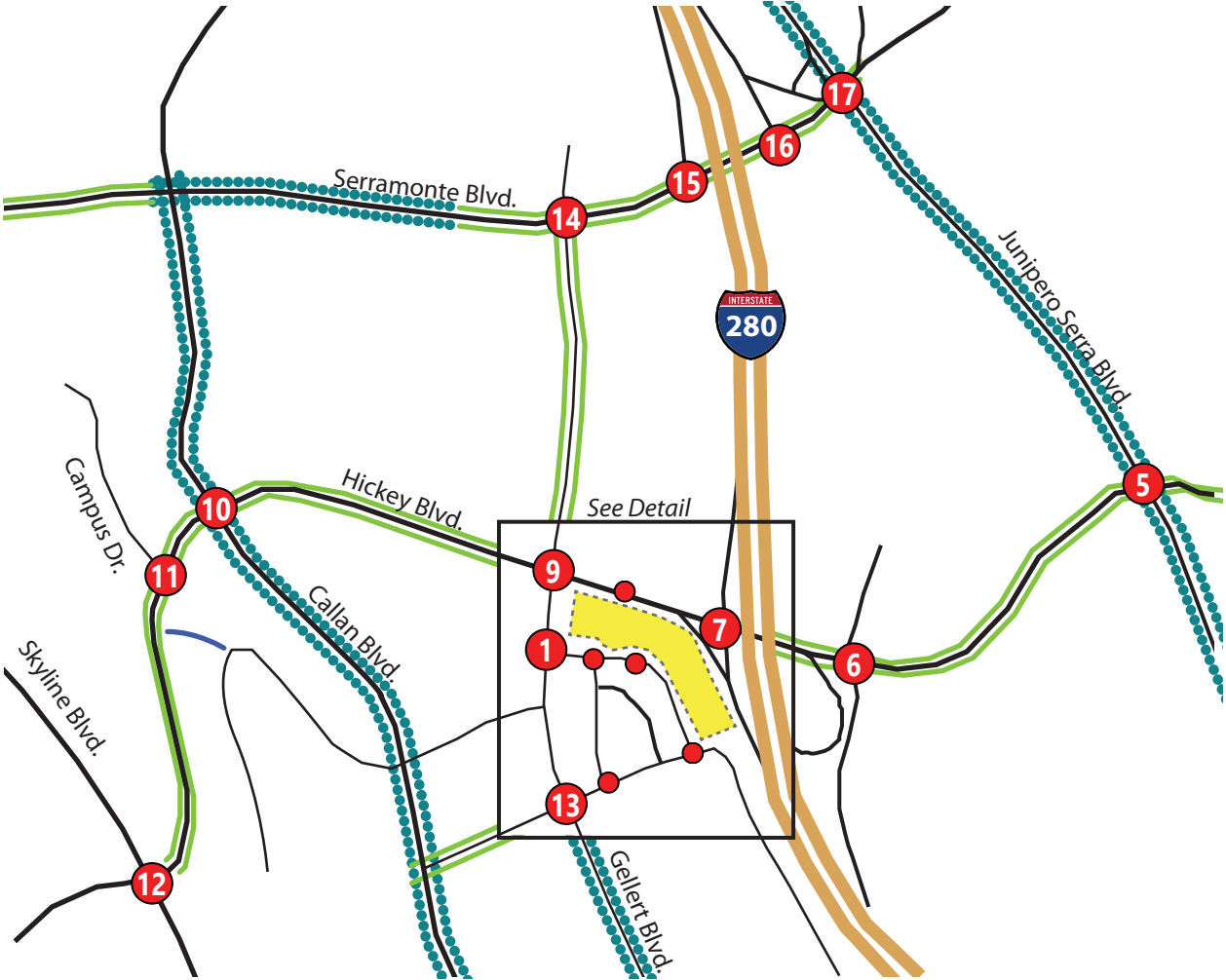
-  Project Site
-  Project Driveway
-  Study Intersection
-  Sidewalk
-  Marked Crosswalk
-  Marked Crosswalk
-  Footpath



Figure 3b: Existing Bicycle Facilities



LEGEND







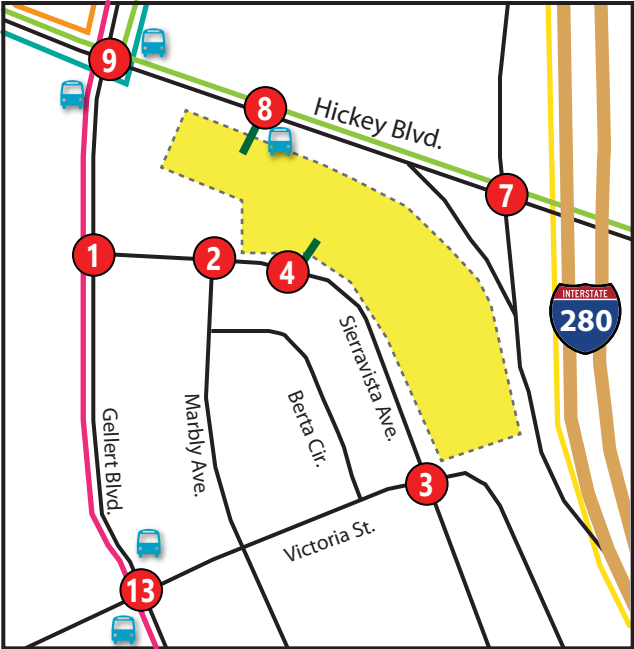










-  Project Site
-  Project Driveway
-  Study Intersection
-  Class II Bike Lane
-  Class III Bike Route
-  Footpath



Figure 3c: Existing Transit Facilities



LEGEND

-  Project Site
-  Project Driveway
-  Study Intersection
-  Bus Route 120
-  Bus Route 121
-  Bus Route 122
-  Bus Route 16
-  Bus Route 112
-  Bus Route 130
-  Bus Stop

3.5 ESTIMATED EXISTING PEAK HOUR TRAFFIC VOLUMES

The existing operations of the seventeen study intersections were evaluated for the highest one-hour volumes during weekday morning (7-9 a.m.) and evening (4-6 p.m.) peak periods. This study began in May 2021. Peak hour turning movement counts were collected on Tuesday, July 20th, 2021. These counts were compared to turning movement counts which were collected prior to the Covid pandemic at the intersections of Junipero Serra Boulevard (collected November 2019) at Hickey Boulevard and Skyline Boulevard at Hickey Boulevard (collected November 2017). The turning movement counts were much lower than expected due to continued disrupted travel patterns due to the Covid pandemic.

In consultation with the City of Daly City staff, turning movement volumes were adjusted using a factor of 1.88 for the a.m. peak hour counts and 1.18 for the p.m. peak hour counts. These factors were based on the two intersections with comparable counts, to conservatively adjust volumes up to a pre-pandemic level.

Appendix A includes the raw data collected for the existing turning movement volumes for the study intersections.

3.6 INTERSECTION LEVEL OF SERVICE ANALYSIS – EXISTING CONDITIONS

The existing operations of the study intersections were evaluated for the highest one-hour volume during the weekday morning and evening peak periods based on the adjusted existing vehicle volumes as described above. The results of the LOS analysis using the Synchro 10 software program for Existing Conditions are summarized in **Table 4**. LOS worksheets are provided in **Appendix B**.

Under this scenario, 15 of the 17 study intersections operate at acceptable LOS D or better during both peak hours.

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 operates at LOS E during the a.m. peak hour.

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 NB Ramp operates at LOS F during both peak hours.

Both of these signalized intersections are operated by Caltrans which no longer has a LOS policy. The intersection of Hickey Boulevard at Skyline Boulevard/SR-35 is located in Daly City and does not meet the City's General Plan policy for level of service D or better.

Table 4: Intersection Level of Service Analysis – Existing Conditions

ID	Study Intersections	Control	Peak Hour ¹	Delay ²	LOS ³
1	Serravista Ave. & Gellert Blvd.	One-Way Stop	AM PM	25.5 16.6	D C
2	Serravista Ave. & Marbly Ave.	One-Way Stop	AM PM	10.6 9.5	B A
3	Serravista Ave. & Victoria St.	Two-Way Stop	AM PM	10.5 9.0	B A
4	Serravista Ave. & Project Driveway	One-Way Stop	AM PM	0.0 8.7	A A
5	Hickey Blvd. & Junipero Serra Blvd.	Signal	AM PM	19.7 30.2	B C
6	Hickey Blvd. & I-280 NB Ramps	Signal	AM PM	35.8 41.9	D D
7	Hickey Blvd. & I-280 SB Ramps	Signal	AM PM	16.8 14.6	B B
8	Hickey Blvd. & Project Driveway	One-Way Stop	AM PM	0.0 14.9	A B
9	Hickey Blvd. & Gellert Blvd.	Signal	AM PM	49.7 32.8	D C
10	Hickey Blvd. & Callan Blvd.	Signal	AM PM	21.8 27.4	C C
11	Hickey Blvd. & Campus Dr.	Signal	AM PM	15.2 11.0	B B
12	Hickey Blvd. & Skyline Blvd./SR-35	Signal	AM PM	72.8 46.0	E D
13	Gellert Blvd. & Victoria St.	All-Way Stop	AM PM	28.1 28.9	D D
14	Gellert Blvd. & Serramonte Blvd.	Signal	AM PM	20.8 35.5	C D
15	Serramonte Blvd. & I-280 SB Ramps	Signal	AM PM	11.3 22.2	B C
16	Serramonte Blvd. & I-280 NB Ramps	Signal	AM PM	3.0 4.4	A A
17	Serramonte Blvd. & Junipero Serra Blvd./I-280 NB Ramps	Signal	AM PM	154.5 201.5	F F

Notes:

¹ AM – morning peak hour, PM – evening peak hour² Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.³ LOS – Level of Service**Bold** text indicates intersection operates below level of service D.

Figure 4: Existing Lane Geometry and Traffic Controls

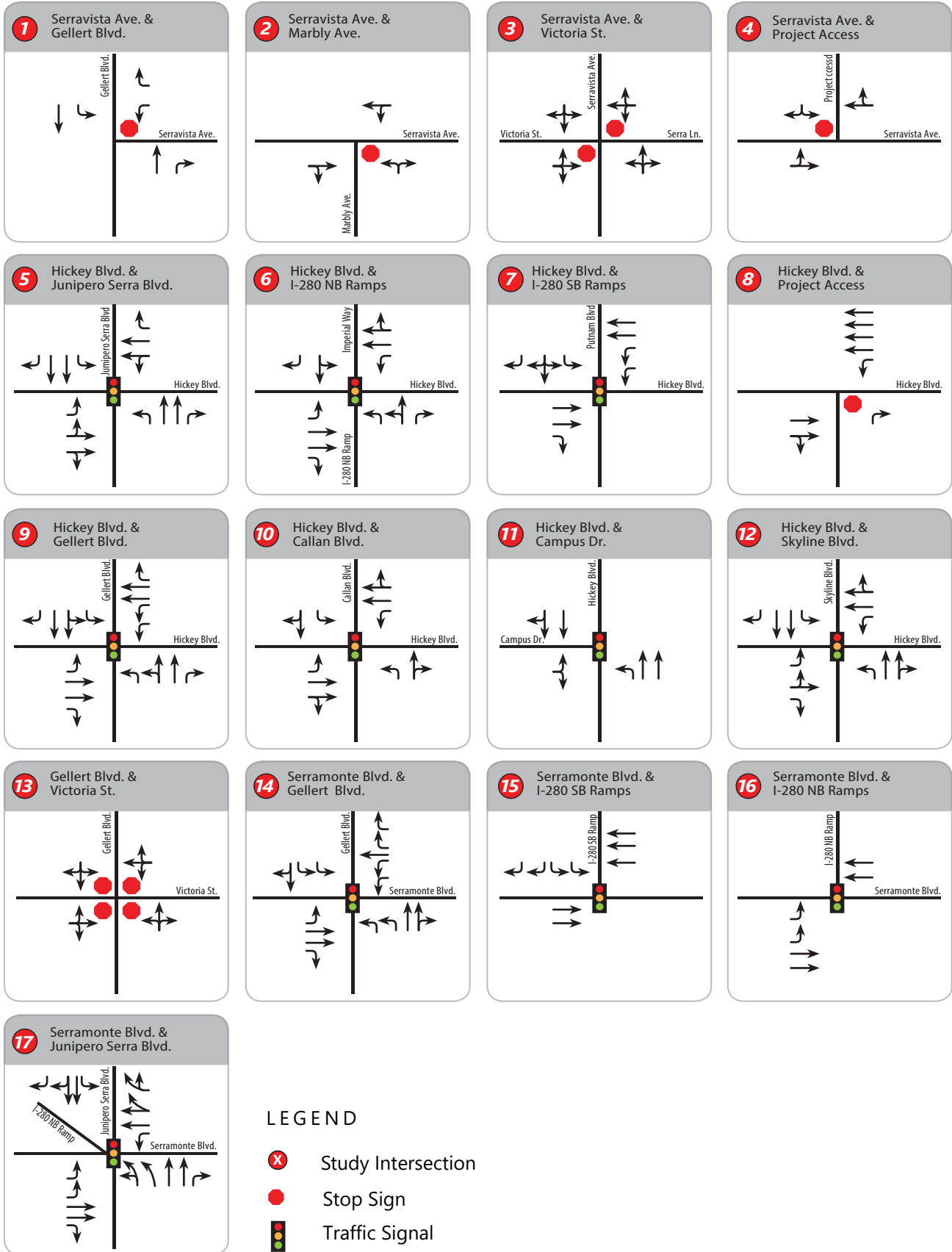
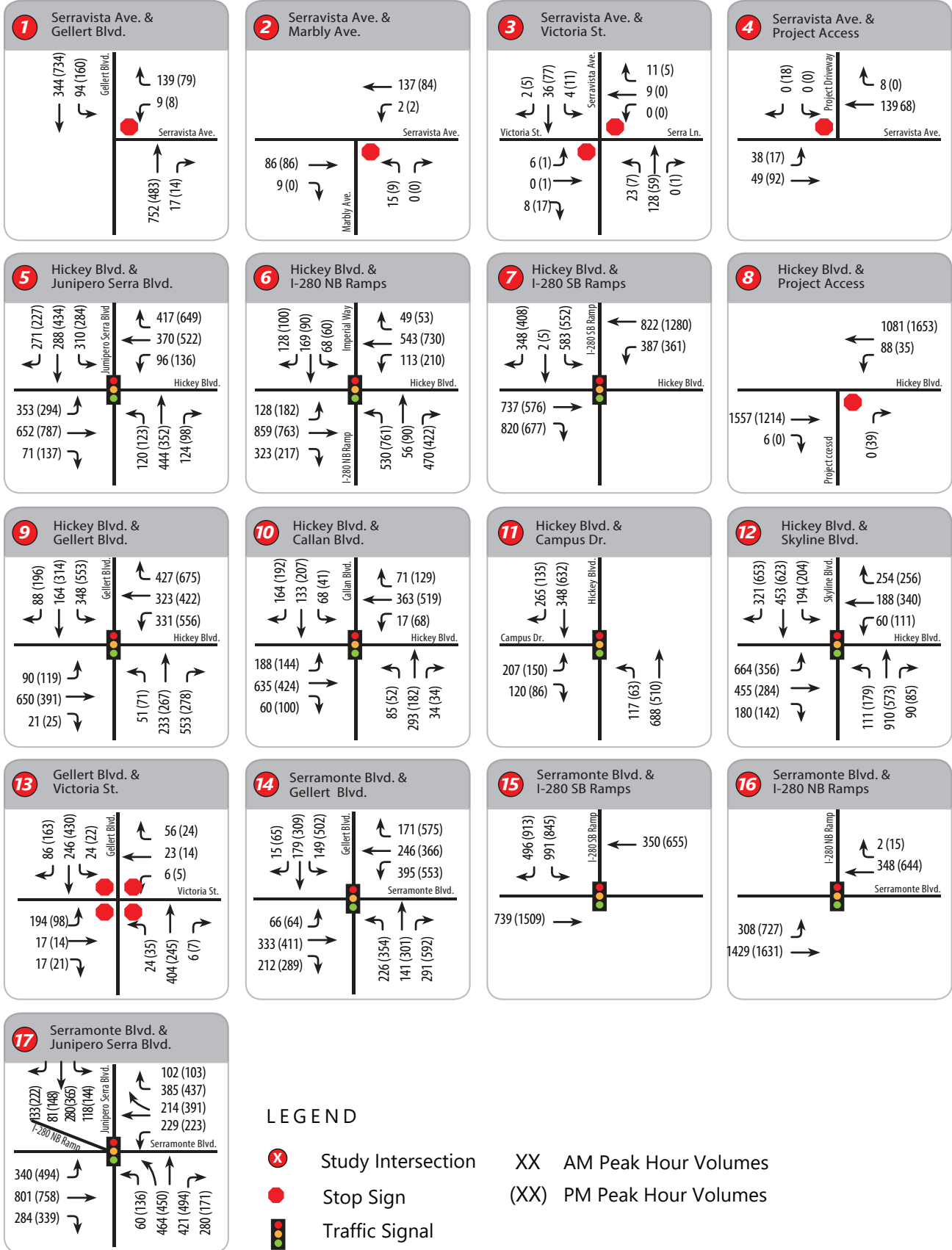


Figure 5: Existing Conditions AM & PM Peak Hour Traffic Volumes



4.0 EXISTING PLUS PROJECT CONDITIONS

This analysis scenario presents the impacts of the proposed project at 455 Hickey Boulevard on the study intersections. This scenario is similar to Existing Conditions, but with the addition of projected traffic from the proposed development.

4.1 PROJECT TRIP GENERATION

TJKM developed estimated project trip generation for the proposed project based on published trip generation rates from the Institute of Transportation Engineers (ITE) publication *Trip Generation 10th Edition*. For the proposed project, TJKM used published trip rates for the ITE land uses General Office Building (ITE Code 710) and Medical-Dental Office Building (ITE Code 720). The project site is currently occupied by an existing 81,460 square foot office building that would be replaced. Trips generated by the existing uses were estimated with trip rates for General Office Building (ITE Code 710). Estimated existing trips were deducted from the project trip generation for each project alternative for the purpose of level of service impact as these trips already exist on the roadway network.

As shown in **Table 5a**, the proposed Alternative 1 is expected to generate 5,471 net new daily trips, including 406 net new a.m. peak hour trips (309 in, 97 out) and 529 net new p.m. peak hour trips (159 in, 370 out). As shown in **Table 5b**, the proposed Alternative 2 is expected to generate 1,934 net new daily trips, including 231 net new a.m. peak hour trips (199 in, 32 out) and 228 net new p.m. peak hour trips (36 in, 192 out).

Table 5a: Project Net Trip Generation – Project Alternative 1

Land Use (ITE Code) ¹	Size (ksf)	Daily		A.M. Peak					P.M. Peak				
		Rate	Trips	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Proposed Uses													
Medical-Dental Office Building (720)	180	34.80	6,264	2.78	78:22	390	110	500	3.46	28:72	174	449	623
<i>Proposed Subtotal</i>			6,264			390	110	500			174	449	623
Existing Uses													
General Office Building (710)	81.46	9.74	793	1.16	86:14	81	13	94	1.15	16:84	15	79	94
Net New Trips			5,471			309	97	406			159	370	529

Notes:

¹ Source: ITE *Trip Generation 10th Edition*

Table 5b: Project Net Trip Generation – Project Alternative 2

Land Use (ITE Code) ¹	Size (ksf)	Daily		A.M. Peak					P.M. Peak				
		Rate	Trips	Rate	In:Out	In	Out	Total	Rate	In:Out	In	Out	Total
Proposed Uses													
General Office Building (710)	280	9.74	2,727	1.16	86:14	280	45	325	1.15	16:84	52	270	322
<i>Proposed Subtotal</i>			2,727			280	45	325			51	271	322
Existing Uses													
General Office Building (710)	81.46	9.74	793	1.16	86:14	81	13	94	1.15	16:84	15	79	94
Net New Trips			1,934			199	32	231			36	192	228

Notes:

¹ Source: ITE *Trip Generation 10th Edition*

4.2 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution is a process that determines in what proportion vehicles are expected to travel between the project site and various destinations outside the project study area. Assignment determines the various routes that vehicles would take from the project site to each destination using the estimated trip distribution. Trip distribution assumptions were determined in consultation with City of Daly City staff.

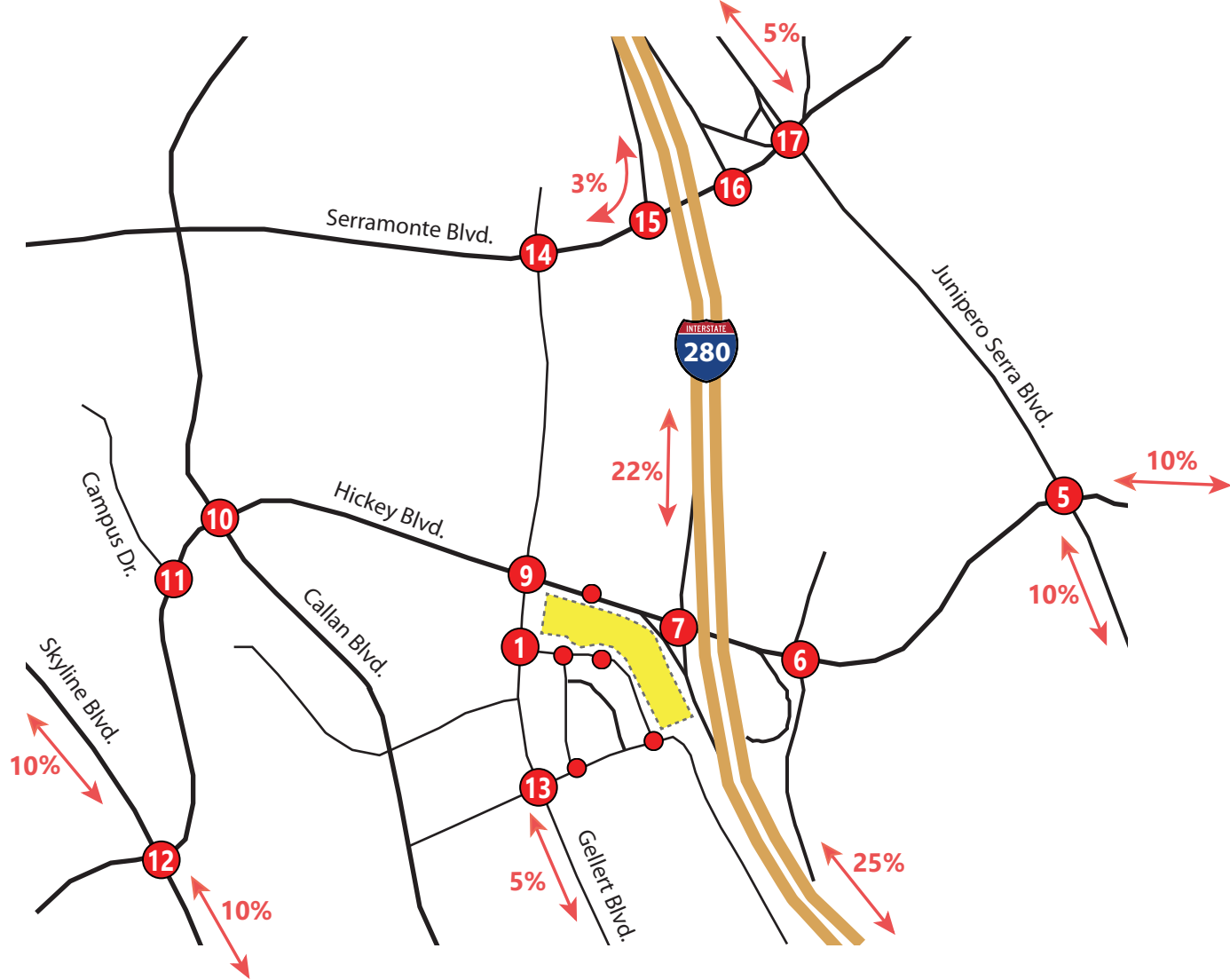
Net new trips associated with the proposed project were distributed as follows:

- 25 percent to/from I-280 to/from the south
- 22 percent to/from I-280 to/from the north via Hickey Boulevard
- 3 percent to/from I-280 to/from the north via Serramonte Boulevard
- 10 percent to/from Hickey Boulevard to/from the east
- 10 percent to/from Junipero Serra Boulevard to/from the south
- 10 percent to/from Skyline Boulevard to/from the south
- 10 percent to/from Skyline Boulevard to/from the north
- 5 percent to/from Gellert Boulevard to/from the south
- 5 percent to/from Junivero Serra Boulevard to/from the north

According to the project site plans shown in **Figure 2**, both development alternatives include a new parking structure with one driveway on Hickey Boulevard and one on Serravista Avenue. The Hickey Boulevard driveway would retain its existing access pattern with left and right turns into the parking structure with a median left turn pocket, but would restrict outbound vehicles to right turns only. 57% of the entering and existing traffic is forecast to utilize the Hickey Boulevard driveway due to direct access and reduced travel distance via a right turn out to the destinations east and south of the project. 43% of the project traffic is forecast to utilize the Serravista Avenue driveway.

Figure 6 illustrates the trip distribution percentages and the trip assignment developed for the proposed project. The assigned project trips were then added to the adjusted existing traffic volumes under Existing Conditions, to generate Existing plus Project Conditions traffic volumes.

Figure 6a: Project Trip Distribution



LEGEND

- Project Site
- Project Driveway
- Study Intersection
- Trip Distribution



Figure 6b: Project Trip Assignment, Alternative 1

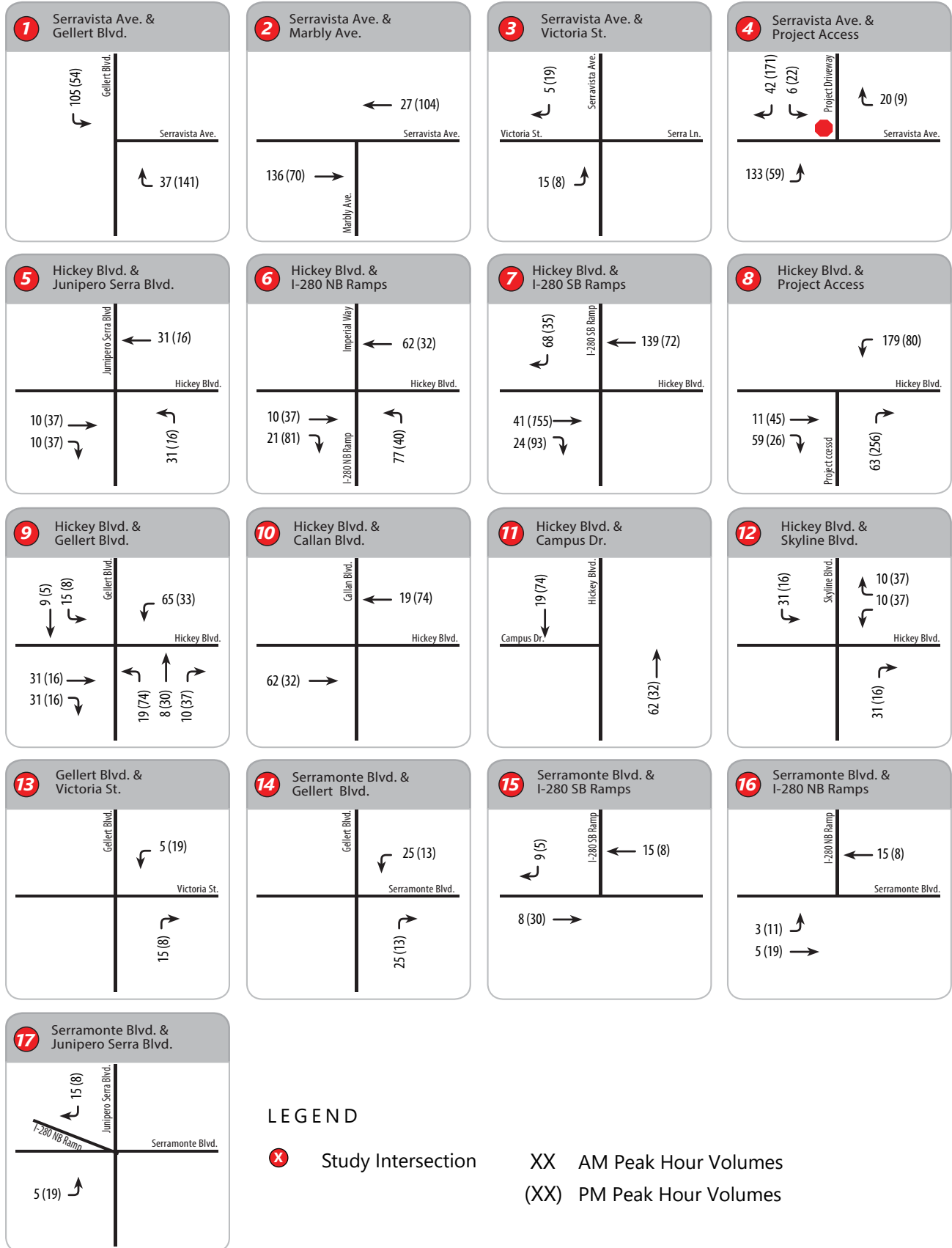
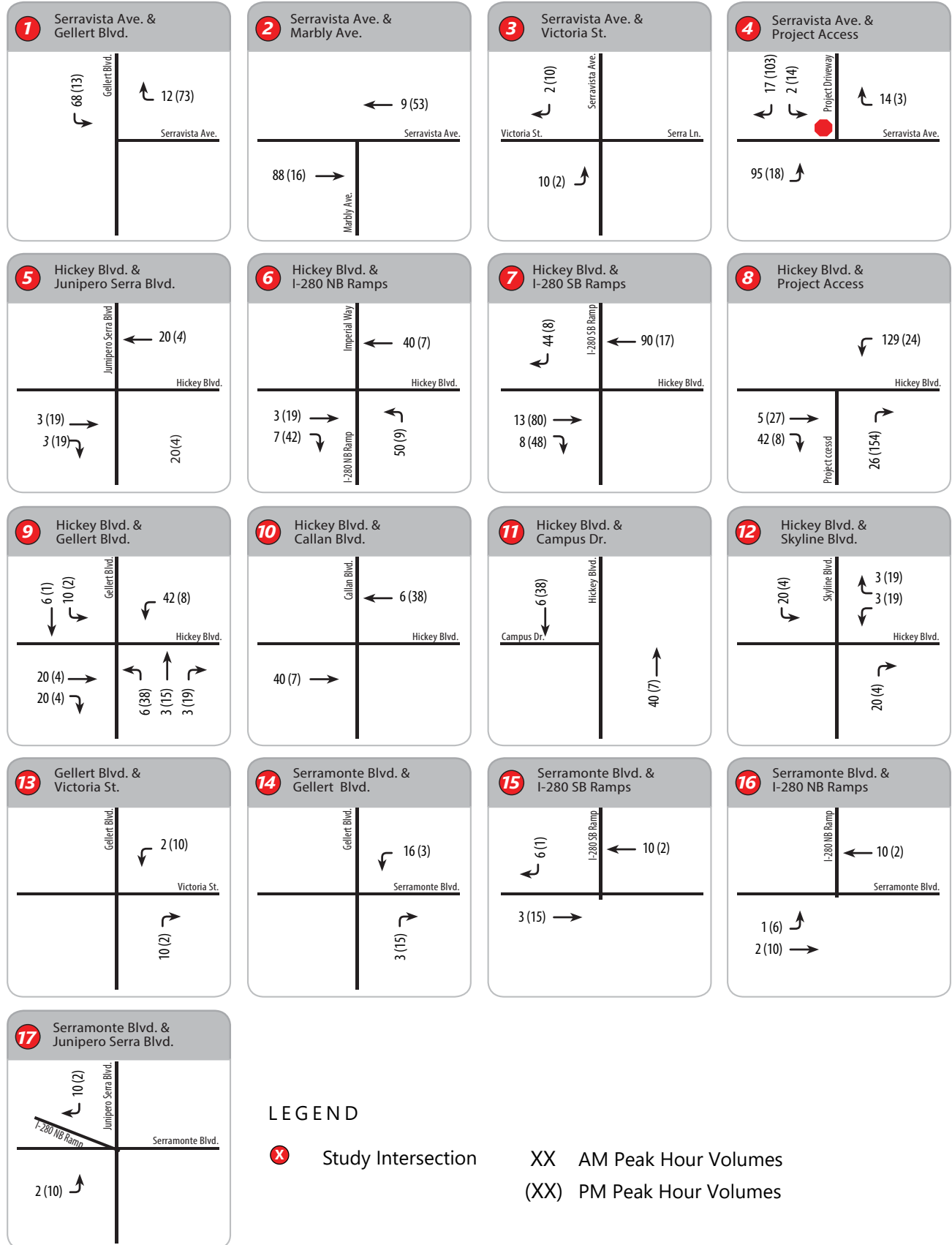


Figure 6c: Project Trip Assignment, Alternative 2



4.4 INTERSECTION LEVEL OF SERVICE ANALYSIS – EXISTING PLUS PROJECT ALTERNATIVE 1 CONDITIONS

Figure 7a summarizes the project turning movement volumes at the study intersections for the Existing plus Project Alternative 1 Conditions. The intersection LOS analysis results are summarized in **Table 7a**. LOS worksheets and are provided in **Appendix C**.

Under this scenario, 14 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours.

Hickey Boulevard at Gellert Boulevard

The intersection of Hickey Boulevard at Gellert Boulevard degrades in the a.m. peak hour from LOS D at 49.7 seconds of delay to LOS E with 56.4 seconds of delay for an increase of 6.7 seconds of delay. This intersection is the closest signalized intersection to the project. The project adds 189 vehicles to this intersection during the a.m. peak hour. To mitigate this impact and also to address queuing issues (discussed in more detail in section 7.3), it is recommended to convert one of the northbound through lanes to a shared through-right lane given the heavy northbound right turn volumes. This mitigation reduces total control delay to 35.7 seconds, thus improving it to better than existing conditions. This mitigation does not require any traffic signal modifications since the timing plan is already running a split phase. The only physical improvements to implement this mitigation are pavement markings and signage. This intersection meets City of Daly City LOS policy with the proposed mitigation.

Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps continues to operate at LOS F during both peak hours. The project adds 0.2 seconds of delay in the a.m. peak hour and 4.4 seconds of delay in the p.m. peak hour for a total of 133.9 seconds and 189.1 seconds, respectively. The project adds 20 vehicles to this intersection during the a.m. peak hour and 27 vehicles during the p.m. peak hour. This intersection is located in the City of Colma and operated by Caltrans.

If a mitigation is desirable, the most feasible mitigation measure to reduce overall delay is to add a westbound left turn lane. This intersection improvement would eliminate the median in order to accommodate the additional lane. With this improvement, the delay in the a.m. peak hour is 116.8, which is 16.9 seconds less than existing conditions, and 173.6 seconds in the p.m. peak hour, which is 11.1 seconds less than existing conditions. This improvement more than mitigates the project's impact on the intersection.

Based on the City of Colma's LOS policy, since this intersection is already operating at LOS F, this is the baseline for measurement of impact. This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Hickey Boulevard and Skyline Boulevard/SR-35

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 degrades from LOS E with 72.8 seconds to LOS F with 82.7 seconding during the a.m. peak hour. This is an increase of 9.9 seconds of delay. The project adds 82 trips to this intersection during the a.m. peak hour.

To reduce the delay to pre-project levels, physical improvements are required. One option to reduce total delay is to convert the eastbound right turn lane to a shared through-right lane, thus providing a second through lane. This would require modifying the intersection by eliminating the right turn channelization islands for the eastbound and northbound directions, as well as installing a larger signal mast arm for the southbound direction. This physical improvement delay is reduced to 67.5 seconds. This improvement more than mitigates the project's impact on the intersection but still does not meet City of Daly City LOS policy.

This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service, this project should contribute a fair share toward this improvement, if it is deemed necessary.

4.5 INTERSECTION LEVEL OF SERVICE ANALYSIS – EXISTING PLUS PROJECT ALTERNATIVE 2 CONDITIONS

Figure 7b shows projected turning movement volumes at all of the study intersections for Existing plus Project Conditions. The intersection LOS analysis results are summarized in **Table 7b** for Project Alternative 2. LOS worksheets are provided in **Appendix D**.

Under this scenario, 15 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours.

Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps continues to operate at LOS F during both peak hours. The project adds 2.1 seconds of delay in the p.m. peak hour. The project adds 12 vehicles to this intersection during the a.m. peak hour and 12 vehicles during the p.m. peak hour.

If the same mitigation measure described in section 4.4 is implemented, the delay is reduced to 171.5 seconds, which is 13.2 seconds less than existing conditions. This improvement more than mitigates the project's impact on the intersection.

Based on the City of Colma's LOS policy, since this intersection is already operating at LOS F, this is the baseline for measurement of impact. This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Hickey Boulevard and Skyline Boulevard/SR-35

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 continues to operate at LOS E with 72.8 seconds of increasing to 79.9 seconds during the a.m. peak hour. This is an increase of 7.1 seconds of delay. The project adds 46 vehicles during the a.m. peak hour to the intersection.

Based on the physical intersection improvements described in the previous section for Project Alternative 1, delay can be improved to 66.6 seconds, which is 6.2 seconds less than existing conditions. This improvement more than mitigates the project's impact on the intersection but still does not meet City of Daly City LOS policy.

This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Table 7a: Intersection Level of Service Analysis – Existing plus Project Alternative 1 Conditions

ID	Study Intersections	Control ⁶	Peak Hour ¹	Existing Conditions		Existing Plus Alt. 1 Conditions		Change in Delay
				Delay ²	LOS ³	Delay ²	LOS ³	
1	Serravista Ave. & Gellert Blvd.	One-Way Stop	AM	25.5	D	33.0	D	7.5
			PM	16.6	C	19.8	C	3.2
2	Serravista Ave. & Marbly Ave.	One-Way Stop	AM	10.6	B	13.1	B	2.5
			PM	9.5	A	11.3	B	1.8
3	Serravista Ave. & Victoria St.	Two-Way Stop	AM	10.5	B	12.4	B	1.9
			PM	9.0	A	9.5	A	0.5
4	Serravista Ave. & Project Driveway	One-Way Stop	AM	0.0	A	9.8	A	9.8
			PM	8.7	A	10.0	A	1.3
5	Hickey Blvd. & Junipero Serra Blvd.	Signal	AM	19.7	B	21.5	C	1.8
			PM	30.2	C	33.1	C	2.9
6	Hickey Blvd. & I-280 NB Ramps	Signal	AM	35.8	D	39.5	D	3.7
			PM	41.9	D	45.6	D	3.7
7	Hickey Blvd. & I-280 SB Ramps	Signal	AM	16.8	B	17.5	B	0.7
			PM	14.6	B	16.3	B	1.7
8	Hickey Blvd. & Project Driveway	One-Way Stop	AM	0.0	A	21.4	C	21.4
			PM	14.9	B	31.4	D	16.5
9	Hickey Blvd. & Gellert Blvd.	Signal	AM	49.7	D	56.4	E	6.7
			PM	32.8	C	35.7	D	2.9
10	Hickey Blvd. & Callan Blvd.	Signal	AM	21.8	C	22.2	C	0.4
			PM	27.4	C	29.7	C	2.3
11	Hickey Blvd. & Campus Dr.	Signal	AM	15.2	B	15.2	B	0.0
			PM	11.0	B	11.8	B	0.8
12	Hickey Blvd. & Skyline Blvd./SR-35	Signal	AM	72.8	E	82.7	F	9.9
			PM	46.0	D	48.7	D	2.7
13	Gellert Blvd. & Victoria St.	All-Way Stop	AM	28.1	D	30.9	D	2.8
			PM	28.9	D	31.5	D	2.6
14	Gellert Blvd. & Serramonte Blvd.	Signal	AM	20.8	C	21.3	C	0.5
			PM	35.5	D	35.9	D	0.4
15	Serramonte Blvd. & I-280 SB Ramps	Signal	AM	11.3	B	11.4	B	0.1
			PM	22.2	C	23.5	C	1.3
16	Serramonte Blvd. & I-280 NB Ramps	Signal	AM	3.0	A	3.0	A	0.0
			PM	4.4	A	4.5	A	0.1
17	Serramonte Blvd. & Junipero Serra Blvd./I-280 NB Ramp	Signal	AM	133.7	F	133.9	F	0.2
			PM	184.7	F	189.1	F	4.4

Notes:

¹ AM – morning peak hour, PM – evening peak hour² Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.³ LOS – Level of Service**Bold** text indicates intersection operates below level of service. D

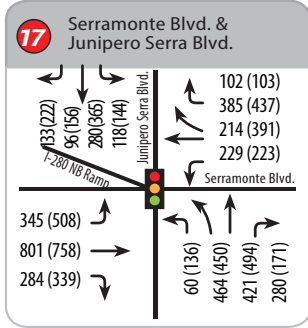
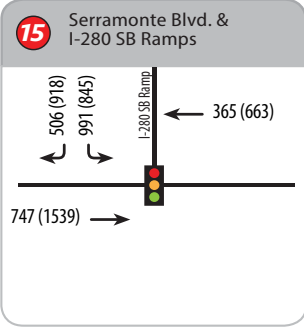
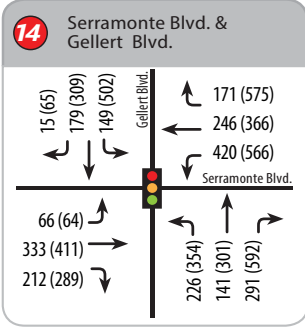
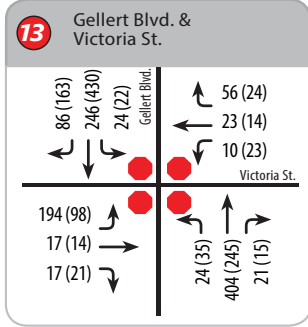
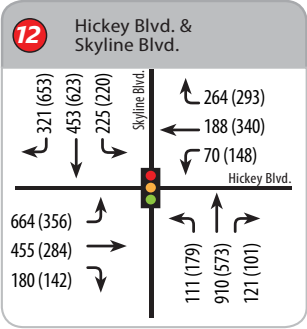
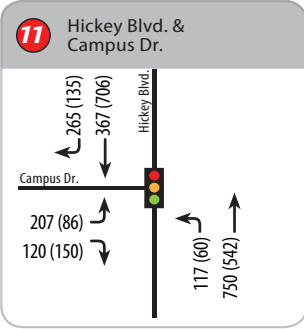
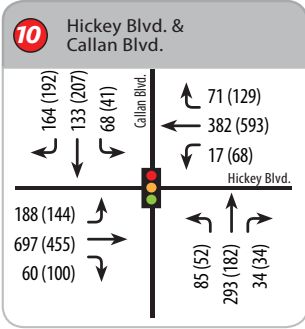
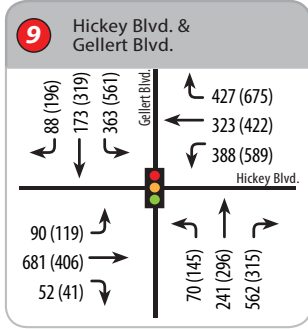
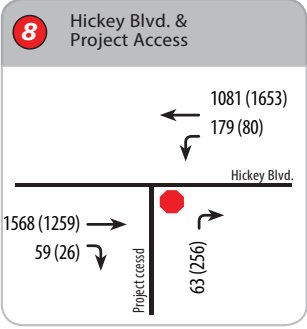
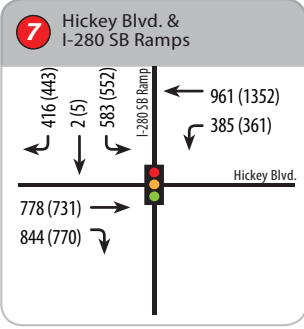
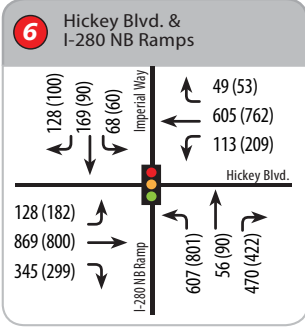
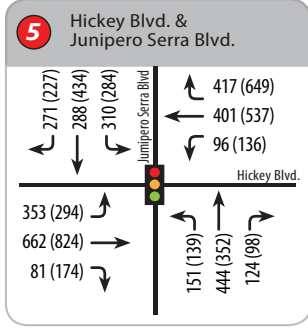
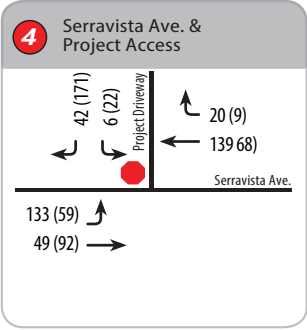
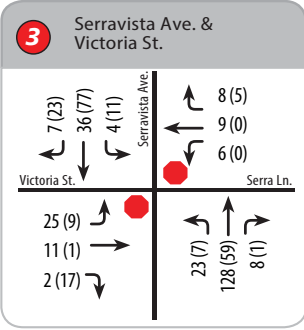
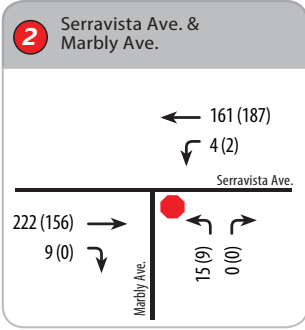
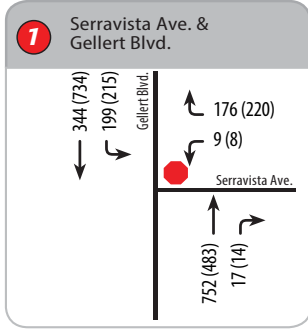
Table 7b: Intersection Level of Service Analysis – Existing plus Project Alternative 2 Conditions

ID	Study Intersections	Control ⁶	Peak Hour ¹	Existing Conditions		Existing Plus Alt. 2 Conditions		Change in Delay
				Delay ²	LOS ³	Delay ²	LOS ³	
1	Serravista Ave. & Gellert Blvd.	One-Way Stop	AM	25.5	D	27.9	D	2.4
			PM	16.6	C	17.0	C	0.4
2	Serravista Ave. & Marbly Ave.	One-Way Stop	AM	10.6	B	12.0	B	1.4
			PM	9.5	A	10.3	A	0.8
3	Serravista Ave. & Victoria St.	Two-Way Stop	AM	10.5	B	12.1	B	1.6
			PM	9.0	A	9.2	A	0.2
4	Serravista Ave. & Project Driveway	One-Way Stop	AM	0.0	A	9.4	A	9.4
			PM	8.7	A	9.4	A	0.7
5	Hickey Blvd. & Junipero Serra Blvd.	Signal	AM	19.7	B	20.8	C	1.1
			PM	30.2	C	30.9	C	0.7
6	Hickey Blvd. & I-280 NB Ramps	Signal	AM	35.8	D	38.0	D	2.2
			PM	41.9	D	43.1	D	1.2
7	Hickey Blvd. & I-280 SB Ramps	Signal	AM	16.8	B	17.0	B	0.2
			PM	14.6	B	15.2	B	0.6
8	Hickey Blvd. & Project Driveway	One-Way Stop	AM	0.0	A	18.5	C	18.5
			PM	14.9	B	19.6	C	4.7
9	Hickey Blvd. & Gellert Blvd.	Signal	AM	49.7	D	51.8	D	2.1
			PM	32.8	C	33.8	C	1.0
10	Hickey Blvd. & Callan Blvd.	Signal	AM	21.8	C	22.0	C	0.2
			PM	27.4	C	28.5	C	1.1
11	Hickey Blvd. & Campus Dr.	Signal	AM	15.2	B	15.2	B	0.0
			PM	11.0	B	11.5	B	0.5
12	Hickey Blvd. & Skyline Blvd./SR-35	Signal	AM	72.8	E	79.9	E	7.1
			PM	46.0	D	47.1	D	1.1
13	Gellert Blvd. & Victoria St.	Signal	AM	28.1	D	30.8	D	2.7
			PM	28.9	D	34.8	D	5.9
14	Gellert Blvd. & Serramonte Blvd.	All-Way Stop	AM	20.8	C	21.1	C	0.3
			PM	35.5	D	35.6	D	0.1
15	Serramonte Blvd. & I-280 SB Ramps	Signal	AM	11.3	B	11.4	B	0.1
			PM	22.2	C	22.8	C	0.6
16	Serramonte Blvd. & I-280 NB Ramps	Signal	AM	3.0	A	3.0	A	0.0
			PM	4.4	A	4.4	A	0.0
17	Serramonte Blvd. & Junipero Serra Blvd./I-280 NB Ramps	Signal	AM	133.7	F	133.7	F	0.0
			PM	184.7	F	186.7	F	2.0

Notes:

¹ AM – morning peak hour, PM – evening peak hour² Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.³ LOS – Level of Service⁴ Total project trips added to intersection**Bold** text indicates intersection operates below level of service. D

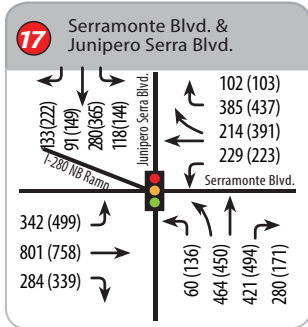
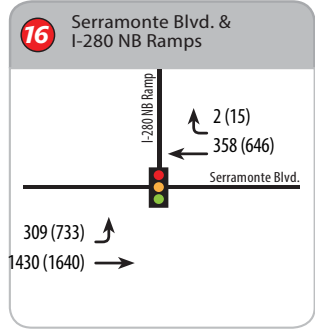
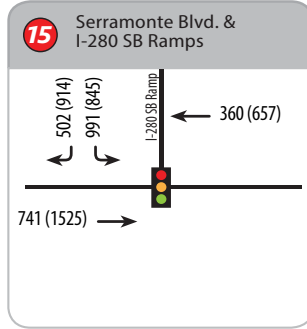
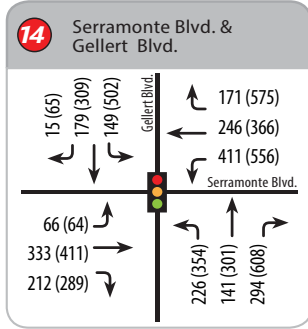
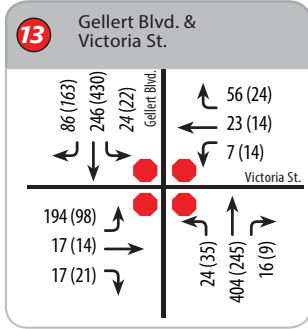
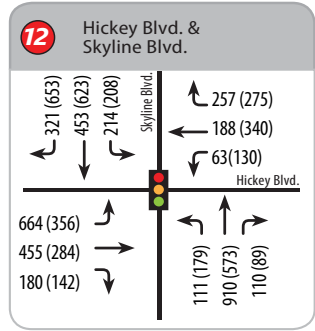
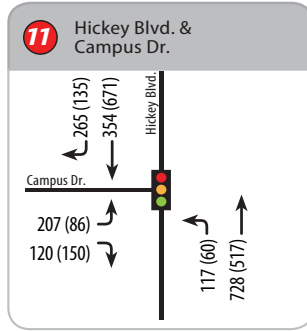
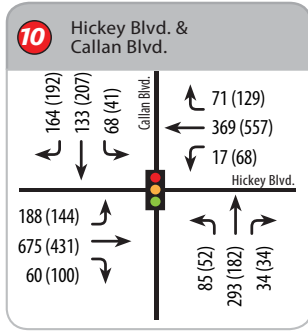
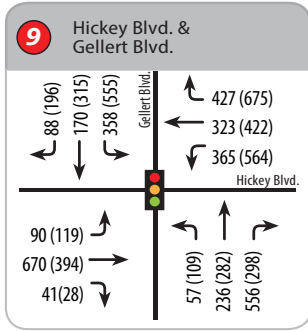
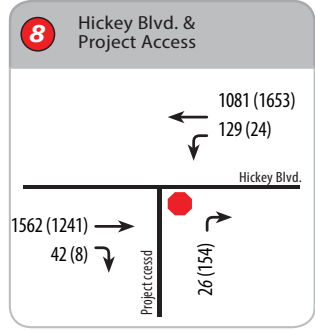
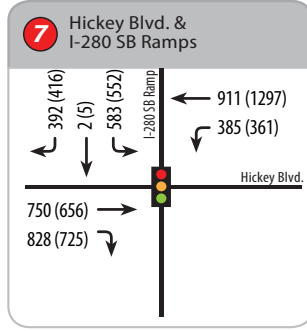
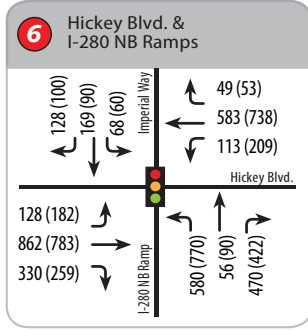
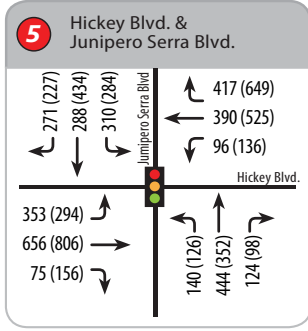
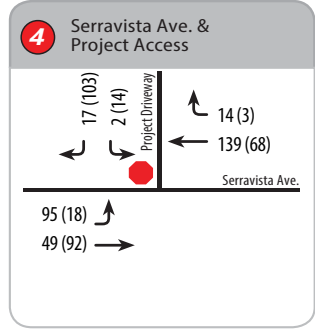
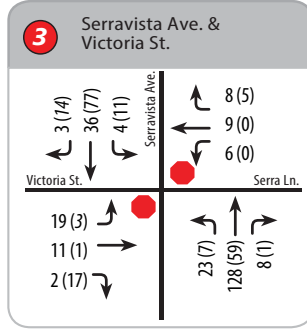
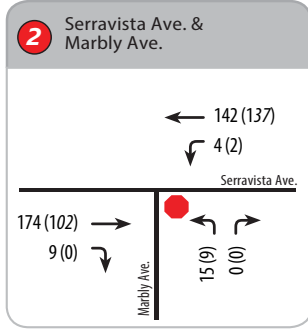
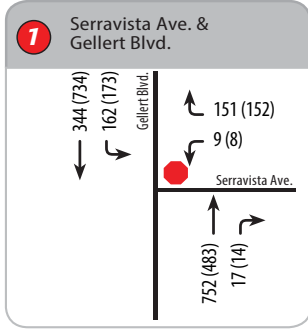
7a: Existing plus Project Alternative 1 Peak Hour Traffic Volumes



LEGEND

- Study Intersection
- Stop Sign
- Traffic Signal
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes

7b: Existing plus Project Alternative 2 Peak Hour Traffic Volumes



LEGEND

- Study Intersection
- Stop Sign
- Traffic Signal

- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes

5.0 CUMULATIVE (2035) CONDITIONS

This section details expected traffic conditions at the study intersections under a future Cumulative (No Project) Conditions based on General Plan land uses. Cumulative turning movement volumes for future year 2035 were obtained from the consultant that manages the City of Daly City's traffic demand model.

Figure 8 shows projected turning movement volumes at all study intersections for Cumulative Conditions.

5.1 INTERSECTION LEVEL OF SERVICE ANALYSIS - CUMULATIVE CONDITIONS

The intersection LOS analysis results for Cumulative Conditions are summarized in **Table 8**. Peak hour factors and intersection signal timing and phasing are identical to Existing Conditions. LOS worksheets are provided in **Appendix E**.

Under this scenario, 14 of the 17 study intersections operate at acceptable LOS D or better during both peak hours.

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 operates at LOS F during the a.m. peak hour.

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps operates at LOS F during both peak hours.

The intersection of Hickey Boulevard & I-280 northbound ramps operates at LOS E with 56.2 seconds of delay during the p.m. peak hour.

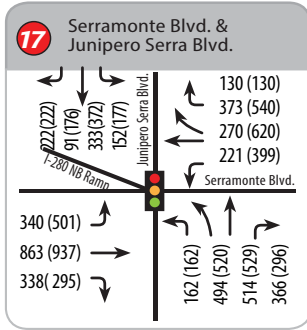
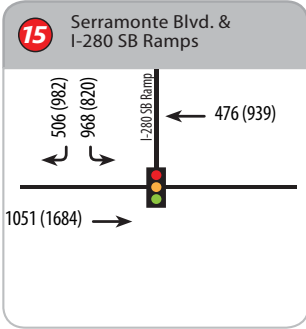
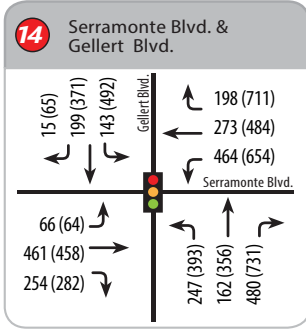
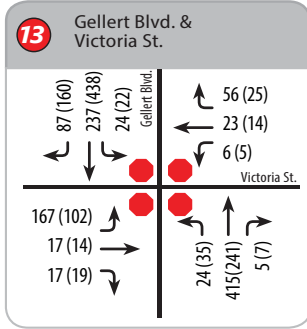
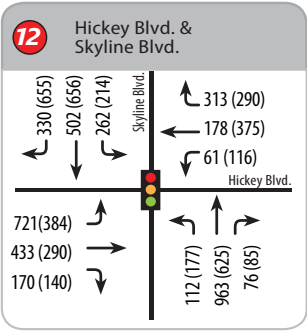
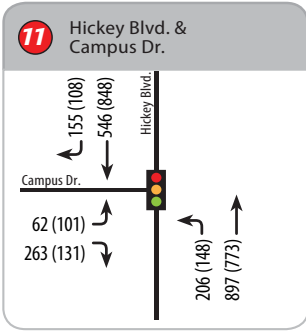
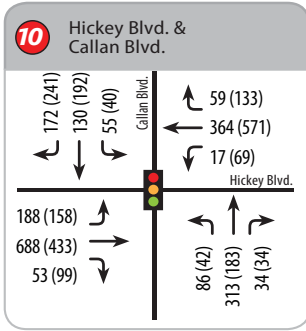
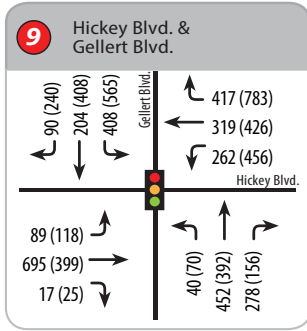
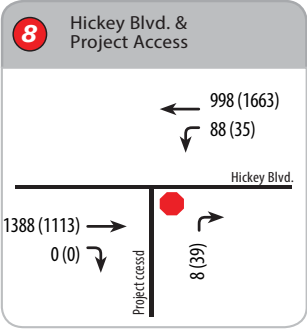
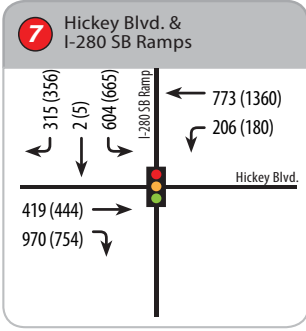
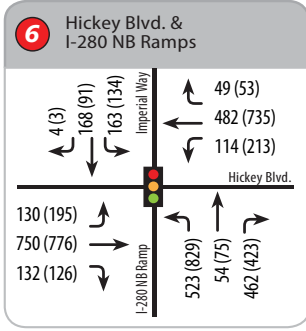
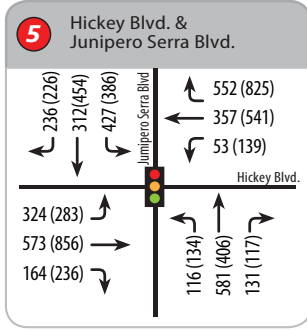
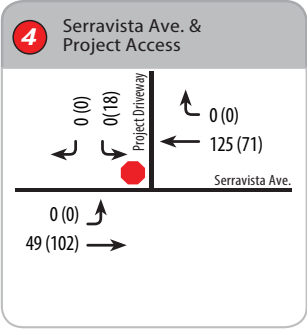
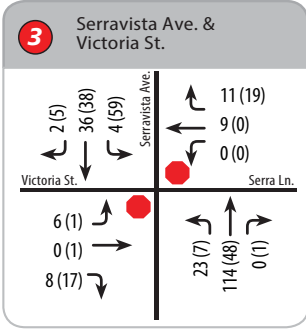
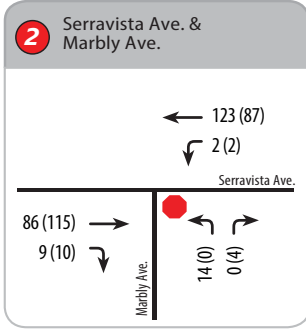
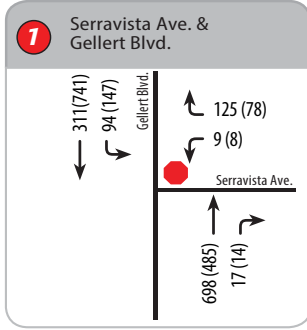
Table 8: Intersection Level of Service Analysis – Cumulative Conditions

ID	Study Intersections	Control	Peak Hour ¹	Delay ²	LOS ³
1	Serravista Ave. & Gellert Blvd.	One-Way Stop	AM	21.4	C
			PM	16.5	C
2	Serravista Ave. & Marbly Ave.	One-Way Stop	AM	10.5	B
			PM	9.0	A
3	Serravista Ave. & Victoria St.	Two-Way Stop	AM	10.4	B
			PM	8.9	A
4	Serravista Ave. & Project Driveway	One-Way Stop	AM	0.0	A
			PM	9.6	A
5	Hickey Blvd. & Junipero Serra Blvd.	Signal	AM	36.2	D
			PM	35.3	D
6	Hickey Blvd. & I-280 NB Ramps	Signal	AM	41.6	D
			PM	56.2	E
7	Hickey Blvd. & I-280 SB Ramps	Signal	AM	11.7	B
			PM	15.2	B
8	Hickey Blvd. & Project Driveway	One-Way Stop	AM	14.0	B
			PM	15.0	B
9	Hickey Blvd. & Gellert Blvd.	Signal	AM	31.2	C
			PM	49.7	D
10	Hickey Blvd. & Callan Blvd.	Signal	AM	22.1	C
			PM	32.4	C
11	Hickey Blvd. & Campus Dr.	Signal	AM	22.5	C
			PM	15.8	B
12	Hickey Blvd. & Skyline Blvd./SR-35	Signal	AM	99.2	F
			PM	51.8	D
13	Gellert Blvd. & Victoria St.	All-Way Stop	AM	26.1	D
			PM	30.0	D
14	Gellert Blvd. & Serramonte Blvd.	Signal	AM	24.8	C
			PM	44.5	D
15	Serramonte Blvd. & I-280 SB Ramps	Signal	AM	19.5	B
			PM	35.0	C
16	Serramonte Blvd. & I-280 NB Ramps	Signal	AM	3.8	A
			PM	5.5	A
17	Serramonte Blvd. & Junipero Serra Blvd./I-280 NB Ramps	Signal	AM	183.9	F
			PM	269.1	F

Notes:

¹ AM – morning peak hour, PM – evening peak hour² Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.³ LOS – Level of Service**Bold** text indicates intersection operates below level of service D

8: Cumulative Conditions Peak Hour Traffic Volumes



LEGEND

- Study Intersection
- Stop Sign
- Traffic Signal
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes

6.0 CUMULATIVE (2035) PLUS PROJECT CONDITIONS

This scenario is similar to the Cumulative Conditions, with the addition of projected traffic from the proposed project. Trip generation, distribution, and assignment for the proposed project are identical to that assumed under Existing plus Project Conditions.

6.1 INTERSECTION LEVEL OF SERVICE ANALYSIS - CUMULATIVE PLUS PROJECT ALTERNATIVE 1 CONDITIONS

Figure 9a shows projected turning movement volumes at all of the study intersections for Cumulative plus Project Alternative 1 Conditions. The intersection LOS analysis results are summarized in **Table 9a**. LOS worksheets are provided in **Appendix F**.

Under this scenario, 14 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours. The three intersections that operate below LOS D in the Cumulative Condition, continue to operate at the same LOS in the Cumulative plus Project Alternative 1 Conditions.

Hickey Boulevard and Skyline Boulevard/SR 35

The intersection of Hickey Boulevard and Skyline Boulevard/SR 35 continues to operate at LOS F during the a.m. peak hour with an additional 9.2 seconds of delay for a total of 108.4 seconds of delay. The physical intersection improvements described in Section 4.4 would reduce this delay to 85.5 seconds, which is an improvement over Cumulative No Project conditions.

The physical improvement is to convert the eastbound right turn lane to a shared through-right lane, thus providing a second through lane. This would require modifying the intersection by eliminating the right turn channelization islands for the eastbound and northbound directions, as well as installing a larger signal mast arm for the southbound direction. This improvement more than mitigates the project's impact on the intersection but still does not meet City of Daly City LOS policy.

This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps operates at LOS F during both peak hours. The project adds 0.1 second of delay for a total of 184.0 second in the a.m. peak hour and 3.7 seconds of additional delay in the p.m. peak hour for a total of 272.8 seconds.

The mitigation measure described in section 4.4 is the addition of a westbound left turn lane. With this physical improvement, the delay in the a.m. peak hour is reduced to 169.8 seconds, which is 14.1 seconds less than cumulative conditions. In the p.m. peak hour the delay is reduced to 225.9 seconds, which is 43.2 seconds less than cumulative conditions. This improvement more than mitigates the project's impact on the intersection.

Based on the City of Colma's LOS policy, since this intersection is already operating at LOS F, this is the baseline for measurement of impact. This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Hickey Boulevard & I-280 northbound On-Ramps

The intersection of Hickey Boulevard & I-280 northbound on-ramps continues to operate at LOS E with an additional 4.2 seconds of delay for a total of 60.4 seconds of delay during the p.m. peak hour.

Adding a southbound left turn pocket will reduce delay in the p.m. peak hour to 47.0 seconds, thus improving the level of service back to an acceptable level of service. However, this improvement requires modification of the existing median, removal of a large tree in the median and is located on private property.

An alternate mitigation is to add a second westbound left turn lane which would reduce delay to 54.6 second. This would require modifying the median and widening the receiving I-280 on-ramp to receive two lanes of traffic. This presents its own challenges with the existing eastbound right-turn merge area and the potential for adding a second merging movement in the same area. This mitigation may not be feasible or desirable. Both of these potential improvements mitigates the project's impact on the intersection and would meet the City of Daly City's LOS policy of LOS D or better.

This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this, this project should contribute a fair share toward this improvement, if it is deemed necessary.

6.2 INTERSECTION LEVEL OF SERVICE ANALYSIS - CUMULATIVE PLUS PROJECT ALTERNATIVE 2
CONDITIONS

Figure 9b shows projected turning movement volumes at all of the study intersections for Cumulative plus Project Alternative 2 Conditions. The intersection LOS analysis results are summarized in **Table 9b**. LOS worksheets are provided in **Appendix G**.

Under this scenario, 14 of the 17 study intersections continue to operate at acceptable LOS D or better during both peak hours. The three intersections that operate below LOS D in the Cumulative Condition, continue to operate at the same LOS in the Cumulative plus Project Alternative 2 Conditions, similar to Cumulative plus Project Alternative 1 Conditions, but with less added delay.

Hickey Boulevard and Skyline Boulevard/SR-35

The intersection of Hickey Boulevard and Skyline Boulevard/SR-35 continues to operate at LOS F during the a.m. peak hour with an additional 5.0 seconds of delay for a total of 104.2 seconds of delay. The

mitigation described in Section 4.4 would reduce this delay to 81.9 seconds. This improvement more than mitigates the project's impact on the intersection but still does not meet City of Daly City LOS policy.

This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps

The intersection of Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound Ramps operates at LOS F during both peak hours. The project adds 1.8 seconds of delay for a total of 270.9 seconds in the p.m. peak hour.

The mitigation measure described in section 4.4 is the addition of a second westbound left turn lane. With this physical improvement, the delay in the p.m. peak hour is reduced to 223.8 seconds, which is 45.3 seconds less than cumulative conditions. This improvement more than mitigates the project's impact on the intersection.

Based on the City of Colma's LOS policy, since this intersection is already operating at LOS F, this is the baseline for measurement of impact. This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this project adds a marginal number of trips, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Hickey Boulevard & I-280 Northbound Ramps

The intersection of Hickey Boulevard & I-280 Northbound Ramps continues to operate at LOS E with an additional 1.3 seconds of delay for a total of 57.5 seconds of delay during the p.m. peak hour. The mitigation of adding a southbound left turn lane described in Section 4.4 would reduce this delay to 44.6 seconds. The mitigation of adding a second westbound left turn lane would reduce this delay to 51.7 seconds.

Both of these potential improvements mitigates the project's impact on the intersection and would meet the City of Daly City's LOS policy of LOS D or better.

This intersection is operated by Caltrans which no longer has a level of service policy. Caltrans should be consulted to determine what, if any, improvements are necessary at this intersection. Since this intersection currently exists below an acceptable level of service and this, this project should contribute a fair share toward this improvement, if it is deemed necessary.

Table 9a: Intersection Level of Service Analysis – Cumulative plus Project Alternative 1 Conditions

ID	Study Intersections	Control ⁶	Peak Hour ¹	Cumulative Conditions		Cumulative Plus Alt. 1 Conditions		Change in Delay
				Delay ²	LOS ³	Delay ²	LOS ³	
1	Serravista Ave. & Gellert Blvd.	One-Way Stop	AM	21.4	C	26.3	D	4.9
			PM	16.5	C	19.6	C	3.1
2	Serravista Ave. & Marbly Ave.	One-Way Stop	AM	10.5	B	12.8	B	2.3
			PM	9.0	A	9.4	A	0.4
3	Serravista Ave. & Victoria St.	Two-Way Stop	AM	10.4	B	11.1	B	0.7
			PM	8.9	A	9.7	A	0.8
4	Serravista Ave. & Project Driveway	One-Way Stop	AM	0.0	A	9.7	A	9.7
			PM	9.6	A	10.0	A	0.4
5	Hickey Blvd. & Junipero Serra Blvd.	Signal	AM	36.2	D	36.2	D	0.0
			PM	35.3	D	38.4	D	3.1
6	Hickey Blvd. & I-280 NB Ramps	Signal	AM	41.6	D	44.8	D	3.2
			PM	56.2	E	60.4	E	4.2
7	Hickey Blvd. & I-280 SB Ramps	Signal	AM	11.7	B	12.2	B	0.5
			PM	15.2	B	16.3	B	1.1
8	Hickey Blvd. & Project Driveway	One-Way Stop	AM	14.0	B	18.6	C	4.6
			PM	15.0	B	29.5	D	14.5
9	Hickey Blvd. & Gellert Blvd.	Signal	AM	31.2	C	35.5	D	4.3
			PM	49.7	D	51.5	D	1.8
10	Hickey Blvd. & Callan Blvd.	Signal	AM	22.1	C	22.7	C	0.6
			PM	32.4	C	36.0	D	3.6
11	Hickey Blvd. & Campus Dr.	Signal	AM	22.5	C	22.8	C	0.3
			PM	15.8	B	17.4	B	1.6
12	Hickey Blvd. & Skyline Blvd.	Signal	AM	99.2	F	108.4	F	9.2
			PM	51.8	D	54.9	D	3.1
13	Gellert Blvd. & Victoria St.	All-Way Stop	AM	26.1	D	28.8	D	2.7
			PM	30.0	D	33.0	D	3.0
14	Gellert Blvd. & Serramonte Blvd.	Signal	AM	24.8	C	26.6	C	1.8
			PM	44.5	D	45.4	D	0.9
15	Serramonte Blvd. & I-280 SB Ramps	Signal	AM	19.5	B	20.3	C	0.5
			PM	35.0	C	37.8	D	2.8
16	Serramonte Blvd. & I-280 NB Ramps	Signal	AM	3.8	A	3.8	A	0.0
			PM	5.5	A	5.6	A	0.1
17	Serramonte Blvd. & Junipero Serra Blvd.	Signal	AM	183.9	F	184.0	F	0.1
			PM	269.1	F	272.8	F	3.7

Notes:

¹ AM – morning peak hour, PM – evening peak hour² Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.³ LOS – Level of Service**Bold** text indicates intersection operates below level of service D.

Table 9b: Intersection Level of Service Analysis – Cumulative plus Project Alternative 2 Conditions

ID	Study Intersections	Control ⁶	Peak Hour ¹	Cumulative Conditions		Cumulative Plus Alt. 2 Conditions		Change in Delay
				Delay ²	LOS ³	Delay ²	LOS ³	
1	Serravista Ave. & Gellert Blvd.	One-Way Stop	AM	21.4	C	23.2	C	1.8
			PM	16.5	C	16.9	C	0.4
2	Serravista Ave. & Marbly Ave.	One-Way Stop	AM	10.5	B	11.8	B	1.3
			PM	9.0	A	9.1	A	0.1
3	Serravista Ave. & Victoria St.	Two-Way Stop	AM	10.4	B	10.8	B	0.4
			PM	8.9	A	9.1	A	0.2
4	Serravista Ave. & Project Driveway	One-Way Stop	AM	0.0	A	9.4	A	9.4
			PM	9.6	A	9.4	A	-0.2
5	Hickey Blvd. & Junipero Serra Blvd.	Signal	AM	36.2	D	36.1	D	0.0
			PM	35.3	D	35.9	D	0.6
6	Hickey Blvd. & I-280 NB Ramps	Signal	AM	41.6	D	43.4	D	1.8
			PM	56.2	E	57.5	E	1.3
7	Hickey Blvd. & I-280 SB Ramps	Signal	AM	11.7	B	11.9	B	0.2
			PM	15.2	B	15.5	B	0.3
8	Hickey Blvd. & Project Driveway	One-Way Stop	AM	14.0	B	16.6	C	2.6
			PM	15.0	B	18.7	C	3.7
9	Hickey Blvd. & Gellert Blvd.	Signal	AM	31.2	C	33.8	C	2.6
			PM	49.7	D	50.3	D	0.6
10	Hickey Blvd. & Callan Blvd.	Signal	AM	22.1	C	22.4	C	0.3
			PM	32.4	C	34.1	C	1.7
11	Hickey Blvd. & Campus Dr.	Signal	AM	22.5	C	22.5	C	0.0
			PM	15.8	B	16.6	B	0.8
12	Hickey Blvd. & Skyline Blvd.	Signal	AM	99.2	F	104.2	F	5.0
			PM	51.8	D	53.0	D	1.2
13	Gellert Blvd. & Victoria St.	All-Way Stop	AM	26.1	D	27.5	D	1.4
			PM	30.0	D	31.4	D	1.4
14	Gellert Blvd. & Serramonte Blvd.	Signal	AM	24.8	C	25.9	C	1.1
			PM	44.5	D	44.7	D	0.2
15	Serramonte Blvd. & I-280 SB Ramps	Signal	AM	19.5	B	20.0	B	0.2
			PM	35.0	C	36.2	D	1.2
16	Serramonte Blvd. & I-280 NB Ramps	Signal	AM	3.8	A	3.8	A	0.0
			PM	5.5	A	5.5	A	0.0
17	Serramonte Blvd. & Junipero Serra Blvd.	Signal	AM	183.9	F	183.8	F	-0.1
			PM	269.1	F	270.9	F	1.8

Notes:

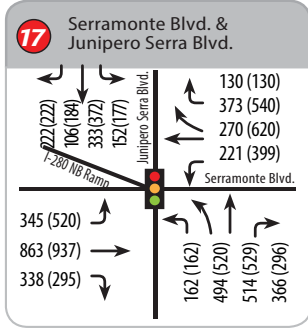
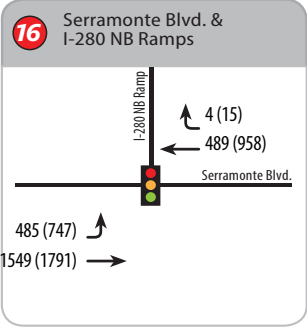
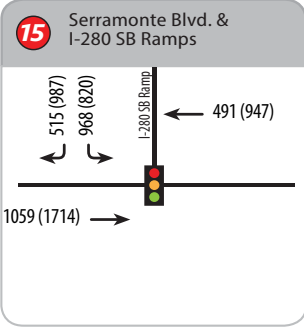
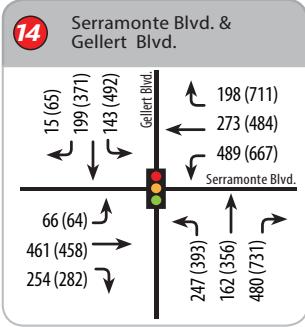
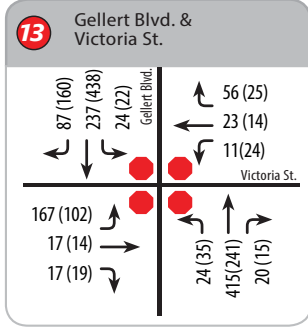
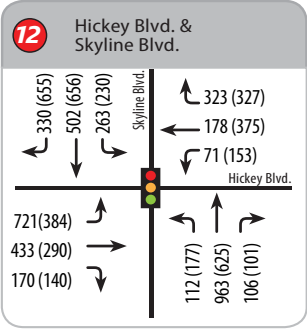
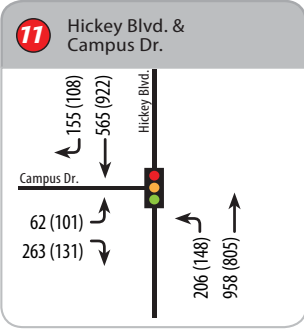
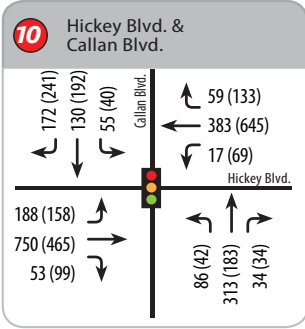
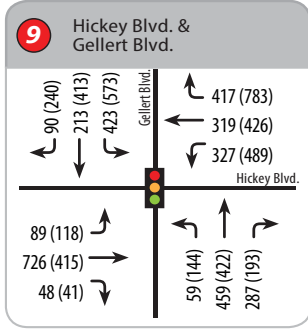
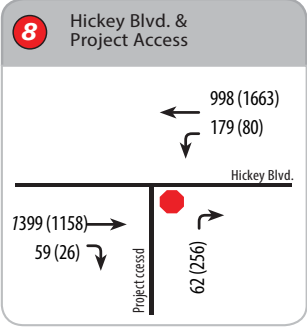
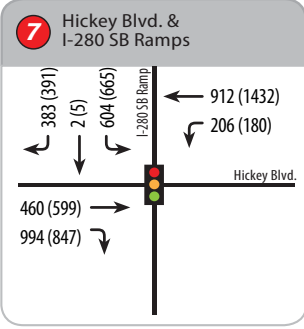
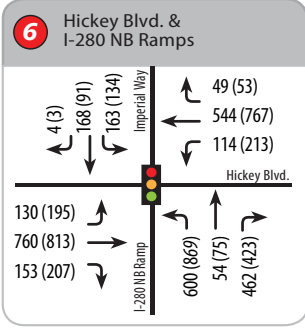
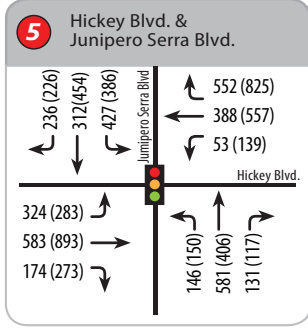
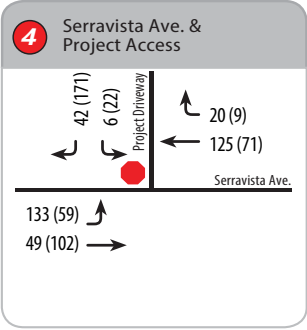
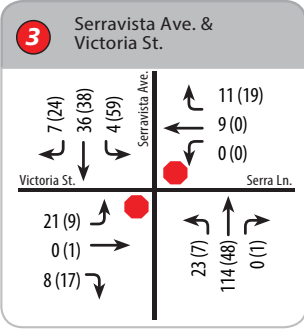
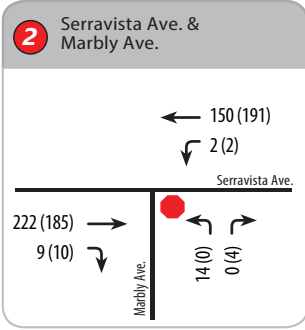
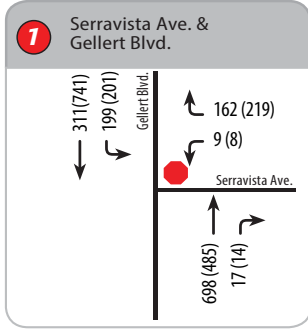
¹ AM – morning peak hour, PM – evening peak hour

² Delay – Whole intersection weighted average control delay expressed in seconds per vehicle for signalized and all-way stop controlled intersections. Total control delay for the worst movement is presented for side-street stop controlled intersections.

³ LOS – Level of Service

Bold text indicates intersection operates below level of service D

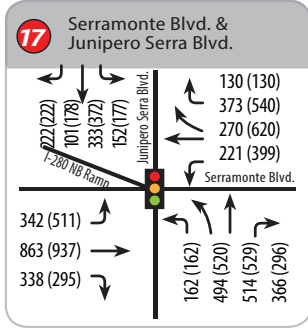
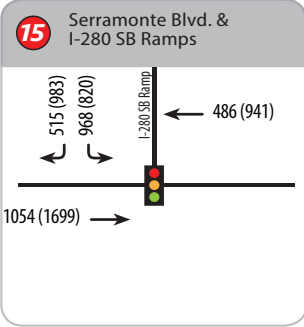
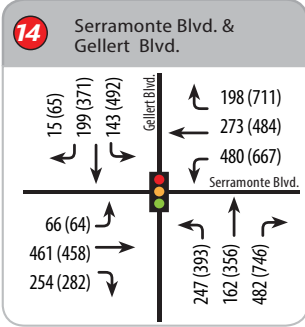
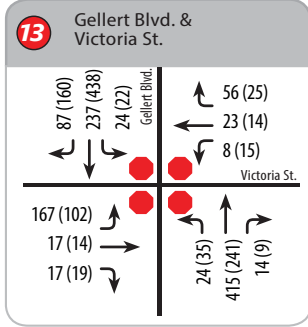
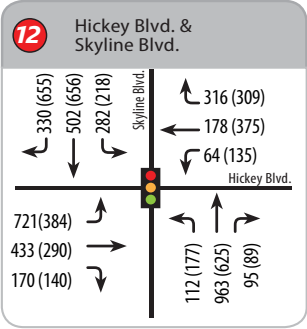
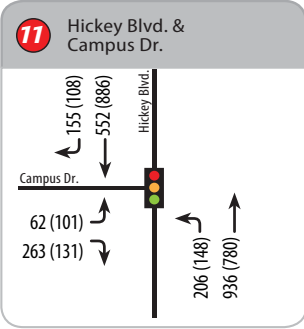
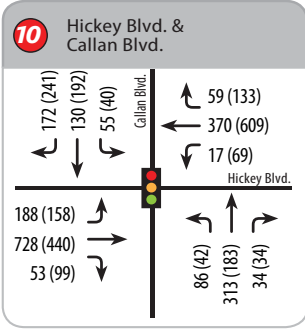
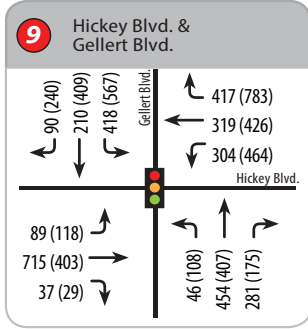
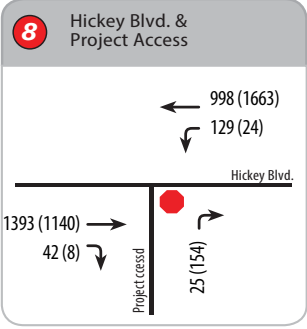
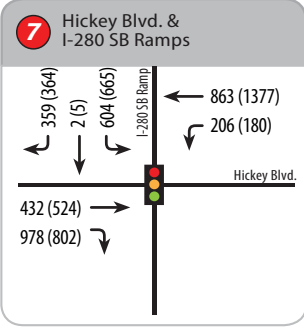
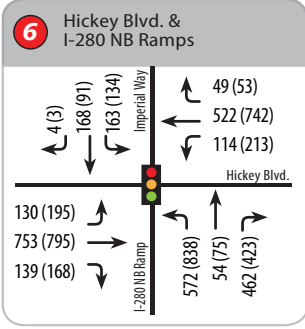
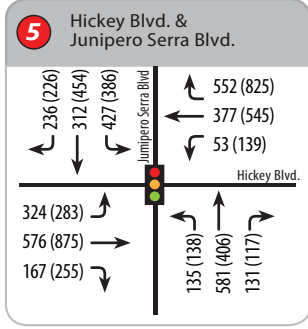
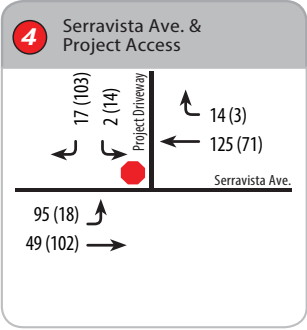
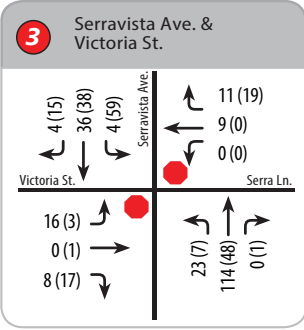
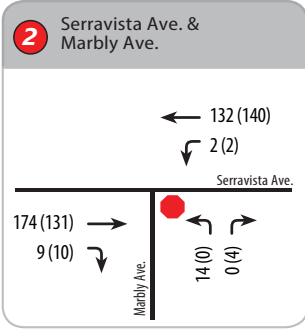
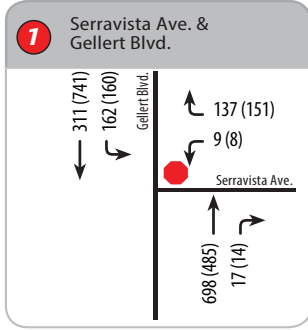
9a: Cumulative plus Project Alternative 1 Peak Hour Traffic Volumes



LEGEND

- Study Intersection
- Stop Sign
- Traffic Signal
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes

9b: Cumulative plus Project Alternative 2 Peak Hour Traffic Volumes



LEGEND

- Study Intersection
- Stop Sign
- Traffic Signal
- XX AM Peak Hour Volumes
- (XX) PM Peak Hour Volumes

7.0 VEHICLES MILES TRAVELED & TRANSPORTATION DEMAND MANAGEMENT

7.1 VEHICLE MILES TRAVELED

Senate Bill (SB) 743 requires analysis of Vehicles Miles Traveled (VMT) as the measure of California Environmental Quality Act (CEQA) for transportation impacts. Reducing VMT per capita is an important component for achieving the state's long-term climate goals since half of greenhouse gas emissions are derived from transportation sources.

For VMT analysis, as Daly City has not adopted formal SB743 guidelines, the City/County Association of Governments of San Mateo County (C/CAG) guidelines were used, since Daly City is a member agency.

C/CAG provided a SB 743 Implementation Decisions document, published on September 2021 which consists of VMT thresholds and screening criteria for projects within San Mateo County, along with a VMT screening tool based off their travel demand model. Within these guidelines, there is a screening criteria which states that if a project is located within a transit priority area (TPA), then the project is exempt from VMT analysis and its VMT impact is insignificant.

TJKM inserted the 455 Hickey Project details into the C/CAG VMT Estimation Tool. The project is located in Travel Analysis Zone (TAZ) #1918 in the C/CAG model, which is tagged as a TPA under C/CAG geographical definitions. Since the project is located within a TPA, the project is screened out from VMT analysis and has an **insignificant impact on VMT**.

Output from the C/CAG VMT Estimation Tool can be found in **Appendix H**.

7.2 TRANSPORTATION DEMAND MANAGEMENT (TDM) POLICY

C/CAG is the designated Congestion Management Agency for San Mateo County. The Land Use Impact Analysis Program is a legally required component of the Congestion Management Program. This program was updated in September 2021 with a Transportation Demand Management (TDM) Policy Update Approach that requires participation by all member jurisdictions, such as the City of Daly City. This policy reflects TDM best practices, provides updated performance targets and standardizes monitoring and reporting requirements.

According to the TDM Policy Implementation Guide (April 2022), any project that generates more than 100 average daily trips is subject to the TDM policy and therefore must complete a TDM checklist and implement associated measure to mitigate traffic impacts.

Since this proposed project is located in a high quality transit zone, as identified in the VMT analysis above, and defined as a large non-residential project, the target trip reduction is 25% based on TDM Policy. The TDM Policy identifies nine measures which are required of all projects. These required measures add up to the goal of 25% reduction. There are additional measures which are not required. See **Appendix I** for the TDM checklist provided by C/CAG (ccagtdm.org).

It is recommended that this project implement all nine required measures identified on the C/CAG TDM checklist as follows:

1. Provide free or preferential parking, including reserved spaces near entrances or other desirable locations to incentivize ridesharing.
2. Provide a TDM coordinator/liason for tenants. May be contracted through 3rd party provider such as Commute.org.
3. Obtain certification of registration from Commute.org or equivalent transportation management association.
4. Establish carpool or vanpool program for tenants and register program with Commute.org.
5. Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or \$50, whichever is lower.
6. Offer option for tenants to participate in a pre-tax transit program to encourage the use of sustainable transportation modes and leverage pre-tax income to pay for commute trip costs.
7. Comply with CalGREEN for minimum bicycle parking requirements.
8. Design adjacent streets or roadways to facilitate multimodal travel.
9. Provide showers, lockers and changing rooms for cyclists and other active modes.

8.0 ADDITIONAL TRANSPORTATION ANALYSIS

The following sections provide additional analyses of other transportation issues associated with the project site, including:

- Site access;
- Local Operational Analysis;
- Parking analysis;
- Pedestrian, bicycle and transit access and impacts;

The analyses in these sections are based on professional judgment in accordance with the standards and methods employed by traffic engineers.

8.1 SITE ACCESS AND ON-SITE CIRCULATION

This section analyzes site access and internal circulation for vehicles, pedestrians, and bicycles, based on the site plan presented in **Figure 2**. TJKM reviewed available documents for internal and external access for the project site for vehicles, pedestrians, and bicycles and on-site vehicle circulation.

Site Access

Vehicles would access the project site via two existing driveways into the parking structure. According to the project site plans shown in **Figure 2**, one driveway is located at the existing driveway on Hickey Boulevard and the other driveway near the existing driveway on Serravista Avenue. The Hickey Boulevard driveway would retain its existing access pattern with median-protected left turns into the parking structure, but would restrict outbound vehicles to right turns only. A third access point is restricted to City

utility access at the southern edge of the project. Truck access to a loading area is provided via the driveway at Serravista Avenue with appropriate turning radii.

Two vehicle pick-up/drop-off areas are proposed for the project. One is at the entry plaza to the building on Serravista Avenue and another is inside the first level of the parking garage accessible via Hickey Boulevard at the lower lobby. This analysis assumes that four percent of peak hour trips result in pick-up or drop-off activity and the curbside wait time is ten minutes.

Based on Project Alternative 1, it is projected that eight spaces will accommodate loading vehicles 95% of the time, and space for 15 loading vehicles is needed to accommodate 100% of the time. It is recommended that at a minimum, space for a total of eight vehicles are provided.

Based on Project Alternative 2, it is projected that five spaces will accommodate loading vehicles 95% of the time, and space for ten vehicles is needed to accommodate 100% of the time. It is recommended that at a minimum, space for a total of five vehicles are provided.

The Serravista Avenue loading zone proposes to accommodate 5 vehicles. The parking garage loading zone proposes to accommodate five vehicles with one curbside and four designated loading zone parking spaces.

Pedestrian access to the project site is located at the Entry Plaza on Serravista Avenue. Pedestrian access is provided through connections via adequate sidewalks on Serravista Avenue which connect to sidewalks on Gellert Boulevard and Hickey Boulevard. ADA-compliant pedestrian crossings are located at the signalized intersection of Gellert Boulevard and Hickey Boulevard.

Bicyclists can access the site either as a vehicle at the designated driveways or as a pedestrian at the Entry Plaza. Gellert Boulevard south of Serravista Avenue has marked Class II bike lanes and Hickey Boulevard is a marked Class III bicycle route. Serravista Avenue is a low-volume residential roadway that functions easily as a bikeway without specific designation.

8.2 LOCAL OPERATIONAL ANALYSIS

Gellert Boulevard at Hickey Boulevard

The operational analysis reveals that in the a.m. peak hour, the queue from northbound vehicles on Gellert Boulevard approaching Hickey Boulevard is 697 feet long and blocks the downstream one-way stop-controlled intersection of Serravista Avenue, which is only 300 feet away. This can impede vehicles at the downstream intersection of Serravista Avenue, as well as create safety issues.

To remedy this operational issue, it is recommended that one of the northbound through lanes at the signalized intersection of Gellert Boulevard and Hickey Boulevard be converted to a shared through-right lane, to allow for dual right turn lanes to accommodate heavy right turn volumes. This improvement reduces the queue to 181 feet. This improvement can be implemented without changes to signal timing since the signal is already running a split phase for north and southbound movements. This is the same mitigation measure identified in section 4.3 to reduce average vehicle delay. It is also recommended that two lanes be delineated all the way to Serravista Avenue allowing for two distinct queues.

Gellert Boulevard at Serravista Avenue

Reducing this queue will improve operations at the intersection of Gellert Boulevard and Serravista Avenue. Vehicles entering and exiting Serravista Avenue will no longer be blocked by the queue resulting in easier access through the intersection.

The intersection of Serravista Avenue and Gellert Boulevard was evaluated for traffic signal warrants. With the addition of project traffic, traffic volumes are projected to meet the peak hour traffic signal warrant. The Signal Warrant Analysis Worksheet is provided in **Appendix J**.

Although this intersection meets warrants for a traffic signal, there are other factors to consider when installing a traffic signal, such as proximity to adjacent signals. A signal at this location would need to be coordinated with the signal at Gellert Avenue and Hickey Boulevard in order to avoid vehicles queuing and blocking Hickey Boulevard.

Often times an intermediate traffic control measure to a traffic signal is an all-way stop controlled intersection. However, this is not recommended as it will create a back-up onto the adjacent intersection at Hickey Boulevard as well as increase average delay to 122.4.

By reducing the queue that blocks this intersection, operational issues may be addressed and a traffic signal may not be needed. It is noted in the level of service analysis, that the delay for the southbound left turn is an average of 11.3 seconds if the intersection is not blocked.

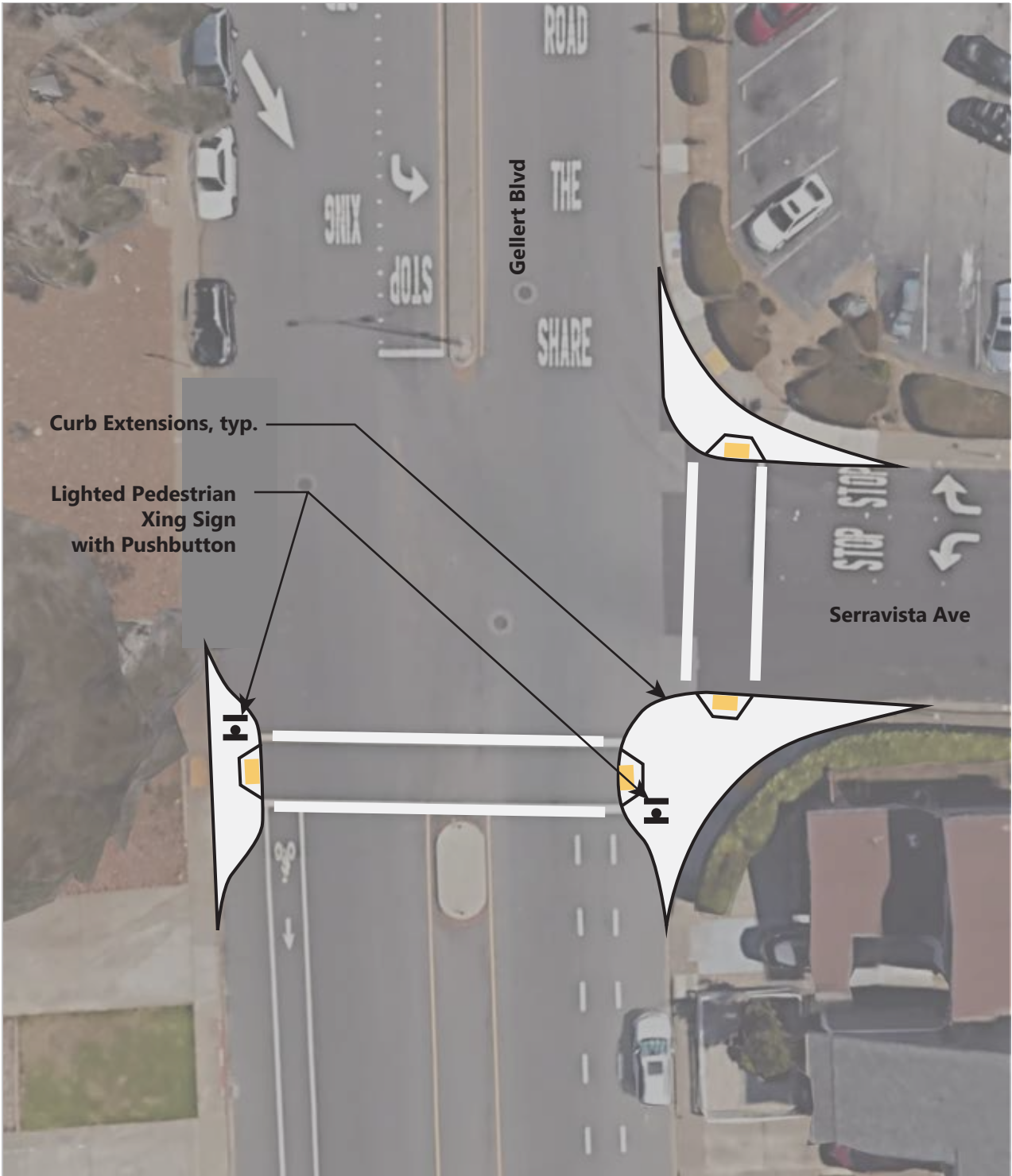
It is noted that the southbound left turn has a stop bar and STOP legend pavement markings. This can be confusing by leading southbound drivers to believe that the intersection is an all-way stop. It is common traffic law that a left turning vehicle must yield to on-coming. It is recommended that this STOP bar and legend be removed. It is noted that per City of Daly City traffic engineering staff, this was installed to address vehicles failing to yield.

Another operational issue at this intersection is pedestrian access and safety. To the west of the intersection is Gellert Park, which includes many amenities including a clubhouse, a library, tennis courts, soccer and baseball fields. There is also a bus stop on the west side of Gellert Boulevard. For the residents directly east, as well as pedestrians from the proposed project, the intersection of Serravista Avenue and Gellert Boulevard is the most direct intersection to cross Gellert Boulevard. It is recommended to enhance pedestrian access and safety at this location by installing flashing pedestrian crossing signs and curb bulbouts at the corners. See Figure 10 for an illustration of improvements. The bulbouts will narrow the crossing distance for pedestrians crossing Gellert Boulevard by as much as 30% as well as provide more visibility by placing them closer to the edge of the bicycle travel lane. The bulbouts also offer a visual constriction of the roadway which has the effect of reducing vehicle speeds. These improvements overall communicate to southbound motorists that they are entering a residential area which will also improve yielding to pedestrians.

To summarize, it is recommended that the northbound through lane at Gellert Boulevard and Hickey Boulevard is converted to a shared through-right turn lane with two lanes marked through to the intersection of Serravista Avenue. It is also recommended that the STOP bar and legend be removed from the southbound left turn lane at Gellert Boulevard at Serravista Avenue. It is also recommended that curb

bulbouts along with flashing pedestrian crossing signs are installed at Gellert Boulevard and Serravista Avenue.

Figure 10: Recommended Intersection Improvements at Gellert Blvd and Serravista Avenue



8.3 PARKING ANALYSIS

This section discusses vehicle parking for the proposed project and includes an assessment of whether the proposed parking supply is adequate based on the proposed project size, zoning regulations, and planned operation. Parking is a crucial component of the project due to the proximity of the residential area and the need to avoid parking spillover into the neighborhood. However, providing too much vehicle parking can also be a waste of resources, considering the cost of a parking structure, and can encourage single occupant vehicles.

The project is proposing to provide 900 parking spaces in a parking garage.

During the pre-application process, City Staff identified a rate of five parking spaces per 1000 square feet for the medical office building proposed in Project Alternative 1 and a rate of three parking spaces per 1,000 square feet for the office building proposed in Project Alternative 2. These rates vary slightly from the Daly City Municipal Code as the land uses for parking requirements in the code are very general.

To determine parking sufficiency, these rates were compared with the Institute of Transportation Engineers Parking Generation Manual 5th Edition. See Table 10 for the comparison of the parking requirements. The proposed project has shown to meet City parking requirements as well as being well above the ITE parking recommendations. Based on this information, the project is projected to avoid parking spillover into the neighborhood.

However, it should also be noted that parking behavior can result in some vehicles being parked on-street in the neighborhood, even with sufficient parking in the garage. Most of the on-street spaces occupied would be along Serravista Avenue which is lined with residential backyards, rather than residential frontages. This would mostly avoid the situation with project visitor vehicles being parked in front of neighbor’s homes. However, if it should become an issue, this residential area could become permit parking restricted for residents only. The City of Daly City offers a Residential Parking Permit program for other areas of the City impacted by commuters parking in residential areas near transportation hubs.

Table 10: Comparison of Parking Requirements

<i>Peak Parking Demand Analysis</i>	<i>Size</i>							
			<i>ITE Avg. Rate¹</i>	<i>Spaces</i>	<i>ITE 95th% Rate</i>	<i>Spaces</i>	<i>Daly City Rate</i>	<i>Spaces</i>
Alternative 1: Medical Office Building								
Medical-Dental Office Building (720)	180.00	ksf	3.23	581	3.42	616	5	900
Alternative 2: Tech Office Building								
General Office Building (710)	280.00	ksf	2.39	669	2.50	700	3	840

¹ Based on Institute of Transportation Engineers (ITE) Parking Generation Manual 5th Edition

The proposed project identifies 18 accessible parking spaces near building entrances which meets the 2% requirement. Two of these spaces should be van accessible spaces.

The project proposes 152 compact parking spaces which is less than the 20 percent maximum of the total supply allowed according to Daly City Zoning Code Section 17.43.010.

Daly City Zoning Code Section 5.106.5.3.1 requires that 10% of the available parking spaces be equipped with Level 2 electric vehicle charging stations (EVCS), an additional 10% shall be Level 1 electric vehicle (EV) ready spaces and an additional 30% shall be EV capable. The proposed project meets these requirements with 90 EVCS, 90 EV ready and 270 EV capable.

The 2016 California Green Building Standards Code (CalGREEN) provides minimum standards for bicycle parking for non-residential structures. This standard is also a requirement of the C/CAG TDM Policy as noted in Section 7.2. The amount of bicycle parking required is an amount that is 5% of vehicle parking. Bicycle parking is provided as a mix of short-term parking such as bike racks and long-term parking such as bike lockers. Bike racks should be provided in a visible area within 50-200 feet of the building entrance. Acceptable long term bicycle parking facilities include secure bicycle lockers, covered lockable enclosures or bicycle rooms with permanently anchored racks.

The mix between short-term and long-term bicycle parking is determined based on the mix of visitors and occupants/employees, with visitors using bike racks, and occupants using bike lockers or other secure bicycle storage. The project proposes eight short term bicycle parking spots with four racks located in the Entry Plaza. Long term bicycle parking is provided via a bicycle cage located near the building elevator on the first floor of the parking structure, easily accessible via the Hickey Boulevard entrance. The cage will provide secure space for at least 45 bicycles.

Based on the various requirements, the proposed supply of vehicle parking, bike parking, and truck loading spaces is **more than adequate**.

8.4 PEDESTRIAN, BICYCLE, AND TRANSIT IMPACTS

Significant impacts are evaluated based on consistency with applicable adopted plans.

Pedestrian Impacts

An impact to pedestrians occurs if the proposed project disrupts existing pedestrian's facilities; or creates inconsistencies with planned pedestrian facilities or adopted pedestrian system plans, guidelines, policies, or standards. The project will connect to existing pedestrian facilities and provides adequate on-site pedestrian access and circulation through a variety of continuous, accessible paths and crosswalks.

As discussed in section 8.2, pedestrian improvements are recommended for the intersection of Gellert Boulevard and Serravista Avenue to enhance pedestrian safety and access from the project to the bus stop and the community park to the west of Gellert Avenue. These pedestrian improvements also enhance traffic operations and safety at the intersection of Gellert Avenue and Serravista Avenue.

As discussed in section 3.2 and shown in **Figure 3a** there are continuous pedestrian facilities and generally ADA-compliant curb ramps are present on most streets within the immediate project vicinity. The project is not expected to create any disruptions or inconsistencies with existing pedestrian facilities or plans. Therefore, the impact to pedestrian facilities is **less-than-significant**.

Bicycle Impacts

An impact to bicycles occurs if the proposed project disrupts existing bicycle facilities; or creates inconsistencies with planned bicycle facilities or adopted bicycle system plans, guidelines, policies, or standards. The proposed project will have adequate bicycle access to the project site from the surrounding area and is not expected to create any inconsistencies with bicycle facilities or plans. Therefore, the impact to bicycle facilities is **less-than-significant**.

Transit Impacts

A proposed project is considered to have a significant impact on transit if it conflicts with existing or planned transit facilities, or is expected to generate additional transit trips and does not provide adequate facilities for pedestrians and bicyclists to access transit routes and stops. Pedestrians and bicyclists can access the closest transit stops on Gellert Boulevard and Hickey Boulevard via a continuous path of sidewalks and crosswalks.

It is noted that the SamTrans website identifies a bus stop at the project frontage on Hickey Boulevard for Route 130 with service to South San Francisco BART, however, there does not appear to be signage for this stop. It is recommended that SamTrans is consulted to determine if indeed a stop exists at this location and if additional improvements are requested at this location to accommodate this bus stop.

The transit service within the immediate project vicinity operates within capacity, and additional trips generated by the proposed project could be accommodated by existing bus services. Therefore, impacts to transit service are expected to be **less-than-significant**.

8.5 RECOMMENDATIONS

Based on the findings in this report, TJKM recommends the following:

- It is recommended that the northbound through lane at Gellert Boulevard and Hickey Boulevard be converted to a shared through-right turn lane.
- It is recommended that a flashing pedestrian crossing sign along with curb bulbouts be installed at the intersection of Gellert Boulevard and Serravista Avenue.
- It is recommended that Caltrans be consulted to determine if improvements are needed at the following intersections since they are already operating below LOS D:
 - Serramonte Boulevard at Junipero Serra Boulevard/I-280 Northbound
 - Hickey Boulevard and Skyline Boulevard/SR-35
 - Hickey Boulevard & I-280 northbound on-ramps

If improvements are needed, the project should contribute a fair share percentage.

- It is recommended that this project implement all nine required TDM measures identified on the C/CAG TDM checklist as outlines in section 7.2. and is summarized as follows:
 - Free/Preferential Parking for Carpools
 - TDM Coordinator/Contact Person
 - Actively Participate in Commute.org or a Transportation Management Association Equivalent
 - Carpool or Vanpool Program

- Transit or Rideshare Passes/Subsidies
- Pre-Tax Transportation Benefits
- Secure Bicycle Storage
- Design Streets to Encourage Bike/Pedestrian Access
- Showers, Lockers and Changing Rooms for Cyclists
- It is recommended that the project's proposed vehicle drop-off/pick-up zone be at least 125 feet in the case of Project Alternative 1 and 75 feet in the case of Project Alternative 2. Signage should be provided which limits parking to a 10 minute loading zone.
- It is recommended that SamTrans be consulted to determine if a bus stop continues to exist on Hickey Boulevard along the project frontage and if additional improvements are needed at this location to accommodate this bus stop.
- It is recommended that the STOP bar and legend is removed from the southbound left turn lane at Gellert Boulevard at Serravista Avenue.

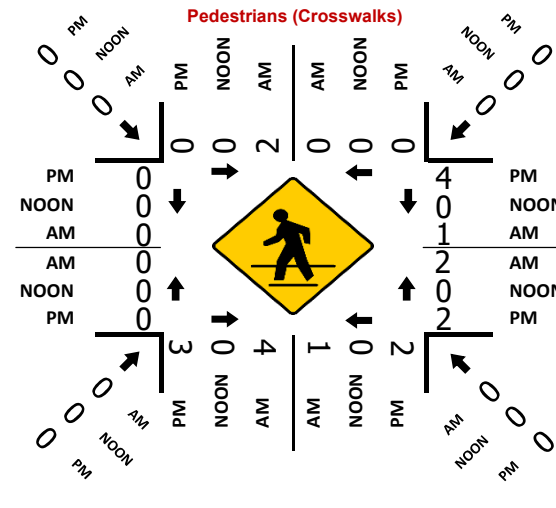
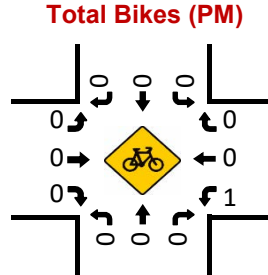
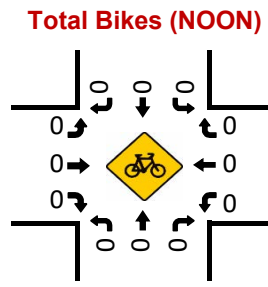
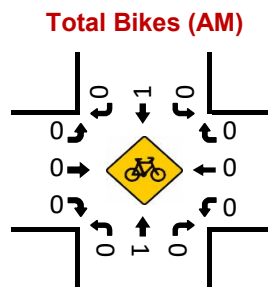
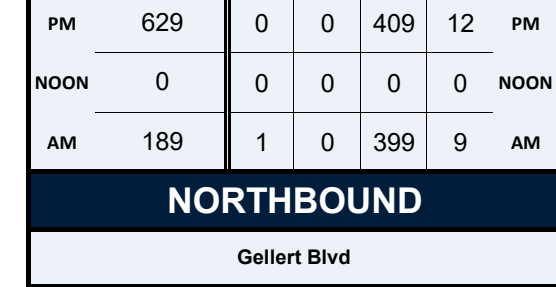
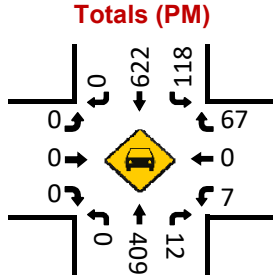
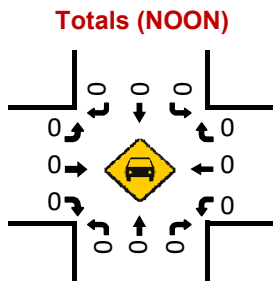
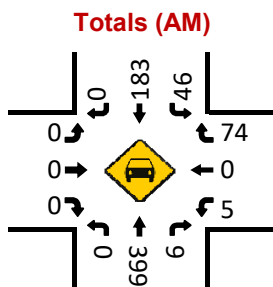
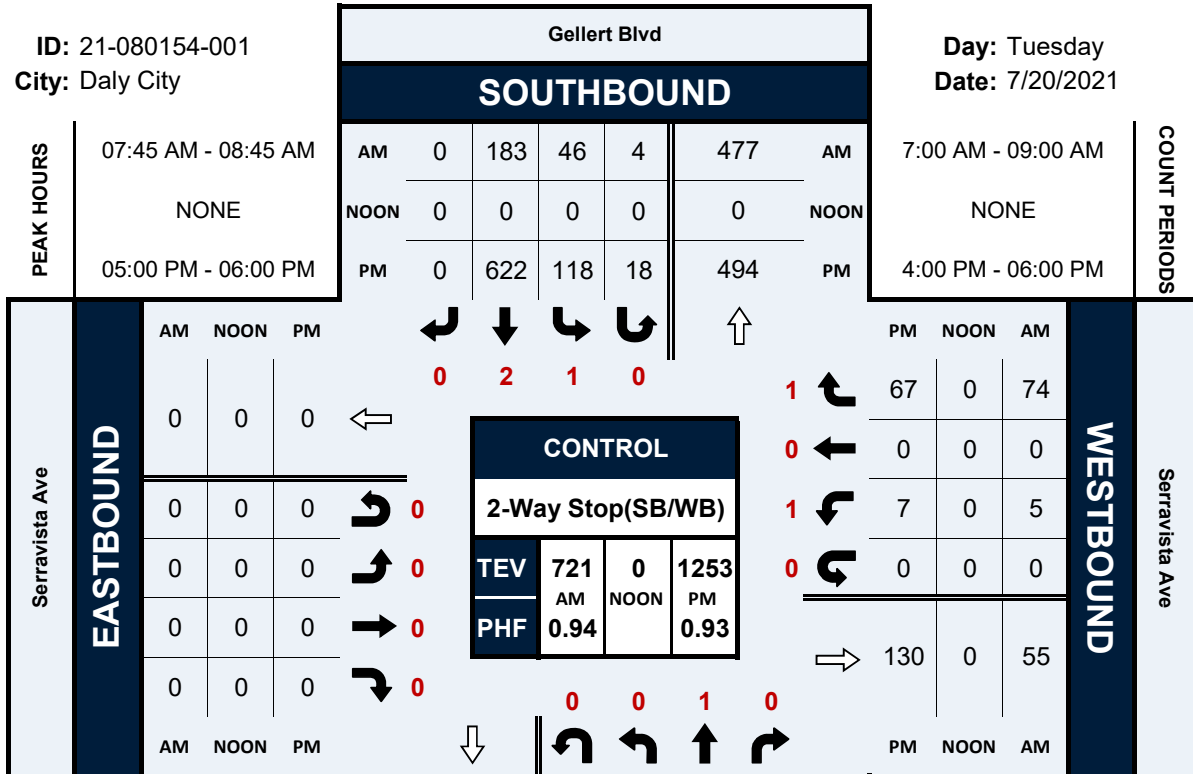
Appendix A – Traffic Counts Worksheets

Gellert Blvd & Serravista Ave

Peak Hour Turning Movement Count

ID: 21-080154-001
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Serravista Ave
City: Daly City
Control: 2-Way Stop(SB/WB)

Project ID: 21-080154-001
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Serravista Ave				Serravista Ave					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	1	2	0	0	0	0	0	0	1	0	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	7:00 AM	65	2	0	7	32	0	2	0	0	0	0	0	0	11	0	117	
	7:15 AM	0	102	4	0	13	23	0	2	0	0	0	0	1	0	11	0	156
	7:30 AM	0	93	6	0	7	40	0	0	0	0	0	0	1	0	22	0	169
	7:45 AM	0	110	2	1	12	37	0	1	0	0	0	0	2	0	12	0	177
	8:00 AM	0	100	1	0	13	52	0	0	0	0	0	0	2	0	15	0	183
	8:15 AM	0	82	3	0	13	44	0	1	0	0	0	0	1	0	26	0	170
	8:30 AM	0	107	3	0	8	50	0	2	0	0	0	0	0	0	21	0	191
8:45 AM	0	72	4	0	21	60	0	0	0	0	0	0	0	0	15	0	172	
TOTAL VOLUMES :	0	731	25	1	94	338	0	6	0	0	0	0	7	0	133	0	1335	
APPROACH %'s :	0.00%	96.57%	3.30%	0.13%	21.46%	77.17%	0.00%	1.37%	0	0	0	0	5.00%	0.00%	95.00%	0.00%		
PEAK HR :	07:45 AM - 08:45 AM																TOTAL	
PEAK HR VOL :	0	399	9	1	46	183	0	4	0	0	0	0	5	0	74	0	721	
PEAK HR FACTOR :	0.000	0.907	0.750	0.250	0.885	0.880	0.000	0.500	0.000	0.000	0.000	0.000	0.625	0.000	0.712	0.000	0.944	
			0.905				0.896								0.731			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	1	2	0	0	0	0	0	0	1	0	1	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	4:00 PM	76	4	0	28	144	0	4	0	0	0	0	7	0	17	0	280	
	4:15 PM	0	84	0	0	33	115	0	2	0	0	0	0	4	0	18	0	256
	4:30 PM	0	109	2	0	30	124	0	3	0	0	0	0	1	0	16	0	285
	4:45 PM	0	94	3	0	27	135	0	8	0	0	0	0	2	0	22	0	291
	5:00 PM	0	95	5	0	36	130	0	4	0	0	0	0	2	0	21	0	293
	5:15 PM	0	97	2	0	24	160	0	3	0	0	0	0	1	0	14	0	301
	5:30 PM	0	108	1	0	33	168	0	5	0	0	0	0	2	0	19	0	336
5:45 PM	0	109	4	0	25	164	0	6	0	0	0	0	2	0	13	0	323	
TOTAL VOLUMES :	0	772	21	0	236	1140	0	35	0	0	0	0	21	0	140	0	2365	
APPROACH %'s :	0.00%	97.35%	2.65%	0.00%	16.73%	80.79%	0.00%	2.48%	0	0	0	0	13.04%	0.00%	86.96%	0.00%		
PEAK HR :	05:00 PM - 06:00 PM																TOTAL	
PEAK HR VOL :	0	409	12	0	118	622	0	18	0	0	0	0	7	0	67	0	1253	
PEAK HR FACTOR :	0.000	0.938	0.600	0.000	0.819	0.926	0.000	0.750	0.000	0.000	0.000	0.000	0.875	0.000	0.798	0.000	0.932	
			0.931				0.920								0.804			

National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Serravista Ave
City: Daly City
Control: 2-Way Stop(SB/WB)

Project ID: 21-080154-001
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Serravista Ave				Serravista Ave					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	1	2	0	0	0	0	0	0	1	0	1	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	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
	7:30 AM	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	1	0	0	0	0	0	0	0	0	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL VOLUMES :	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	TOTAL
	APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0	0	0	0	0	0	0	0	2
	PEAK HR :	07:45 AM - 08:45 AM																TOTAL
	PEAK HR VOL :	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	1	2	0	0	0	0	0	0	1	0	1	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
	4:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	0	4
	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	0	0	0	0	0
	5:15 PM	0	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	1	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL VOLUMES :	0	1	0	0	1	0	0	3	0	0	0	0	2	0	0	0	TOTAL
	APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	25.00%	0.00%	0.00%	75.00%	0	0	0	0	100.00%	0.00%	0.00%	0.00%	7
	PEAK HR :	05:00 PM - 06:00 PM																TOTAL
	PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250

National Data & Surveying Services **Intersection Turning** Movement Count

Location: Gellert Blvd & Serravista Ave
City: Daly City

Project ID: 21-080154-001
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Gellert Blvd		Gellert Blvd		Serravista Ave		Serravista Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	2	1	2	1	0	0	0	6
7:15 AM	0	0	0	3	0	0	0	0	3
7:30 AM	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	1	0	1	0	0	0	2
8:15 AM	2	0	0	0	0	0	0	0	2
8:30 AM	0	0	2	1	1	1	0	0	5
8:45 AM	0	0	0	1	0	0	0	0	1
TOTAL VOLUMES :	EB 2	WB 3	EB 5	WB 7	NB 3	SB 1	NB 0	SB 0	TOTAL 21
APPROACH %'s :	40.00%	60.00%	41.67%	58.33%	75.00%	25.00%			
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	2	0	4	1	2	1	0	0	10
PEAK HR FACTOR :	0.250	0.250	0.500	0.250	0.500	0.250			0.500
			0.417		0.375				

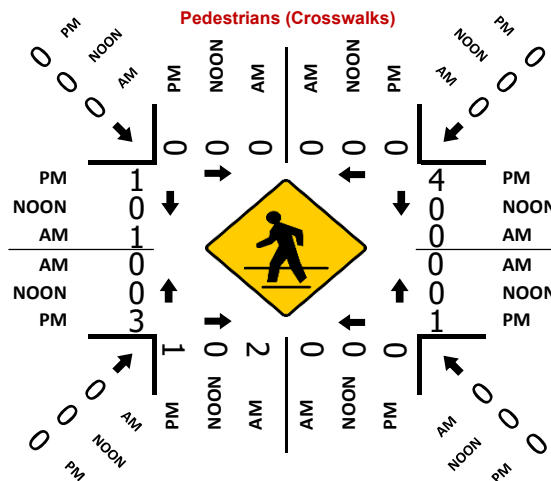
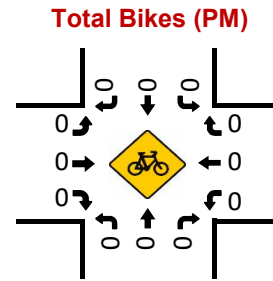
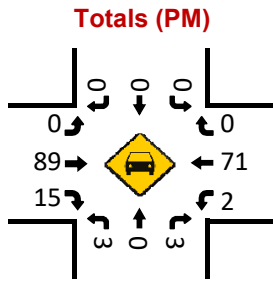
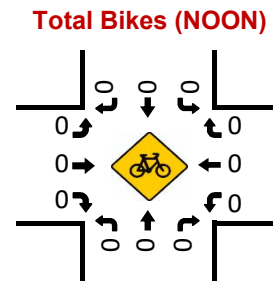
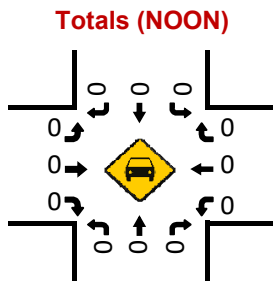
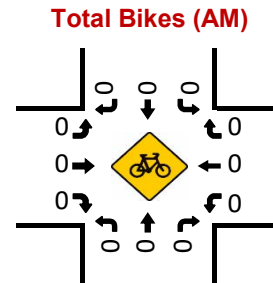
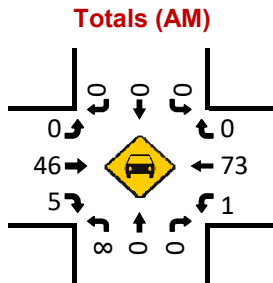
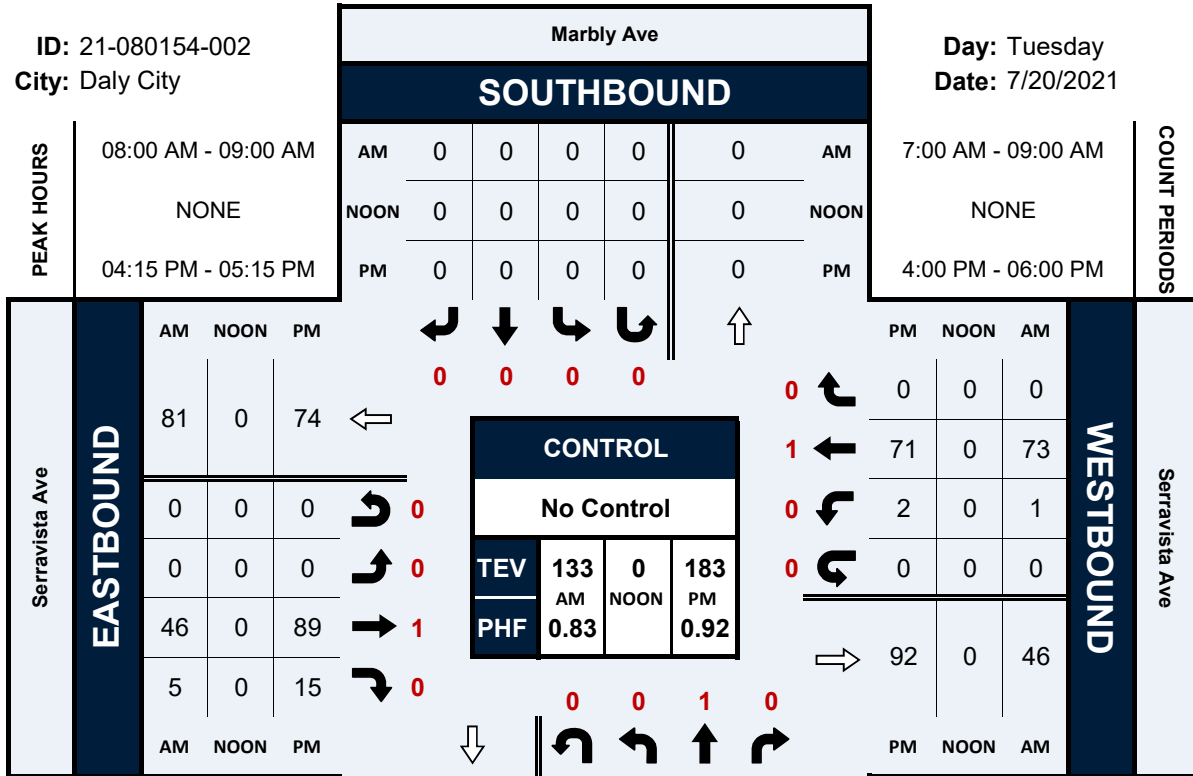
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0		3	1	1	0	0	5
4:15 PM	0	0	0	1	0	1	0	0	2
4:30 PM	0	0	1	0	0	2	0	0	3
4:45 PM	0	0	0	1	1	0	0	0	2
5:00 PM	0	0	1	0	1	0	0	0	2
5:15 PM	0	0	2	0	0	0	0	0	2
5:30 PM	0	0	0	2	1	3	0	0	6
5:45 PM	0	0	0	0	0	1	0	0	1
TOTAL VOLUMES :	EB 0	WB 0	EB 4	WB 7	NB 4	SB 8	NB 0	SB 0	TOTAL 23
APPROACH %'s :			36.36%	63.64%	33.33%	66.67%			
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	3	2	2	4	0	0	11
PEAK HR FACTOR :			0.375	0.250	0.500	0.333			0.458
			0.625		0.375				

Marbly Ave & Serravista Ave

Peak Hour Turning Movement Count

ID: 21-080154-002
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Marbly Ave & Serravista Ave
City: Daly City
Control: No Control

Project ID: 21-080154-002
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Marbly Ave				Marbly Ave				Serravista Ave				Serravista Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	0	3	0	0	0	10	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	7	1	0	0	13	0	0	0
7:45 AM	1	0	0	0	0	0	0	0	0	4	1	1	0	19	0	0	0
8:00 AM	1	0	0	0	0	0	0	0	0	7	0	0	0	11	0	0	0
8:15 AM	3	0	0	0	0	0	0	0	0	7	1	0	0	12	0	0	0
8:30 AM	3	0	0	0	0	0	0	0	0	10	3	0	0	23	0	0	0
8:45 AM	1	0	0	0	0	0	0	0	0	9	0	0	0	21	0	0	0
8:45 AM	1	0	0	0	0	0	0	0	0	20	1	0	1	17	0	0	0
TOTAL VOLUMES :	11	0	0	0	0	0	0	0	0	67	7	1	1	126	0	0	0
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	89.33%	9.33%	1.33%	0.79%	99.21%	0.00%	0.00%	0.00%
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	8	0	0	0	0	0	0	0	0	46	5	0	1	73	0	0	0
PEAK HR FACTOR :	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.575	0.417	0.000	0.250	0.793	0.000	0.000	0.000
	0.667																0.831

NS/EW Streets:	Marbly Ave				Marbly Ave				Serravista Ave				Serravista Ave				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
4:15 PM	5	0	0	0	0	0	0	0	0	12	6	0	1	15	0	0	0
4:30 PM	1	0	1	0	0	0	0	0	0	22	4	0	1	14	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	25	2	0	0	15	0	0	0
5:00 PM	1	0	1	0	0	0	0	0	0	20	2	0	0	23	0	0	0
5:15 PM	1	0	0	0	0	0	0	0	0	22	7	0	1	19	0	0	0
5:30 PM	2	0	0	0	0	0	0	0	0	19	2	0	1	11	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	24	1	0	0	19	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	17	5	0	0	12	0	0	0
TOTAL VOLUMES :	10	0	3	0	0	0	0	0	0	161	29	0	4	128	0	0	0
APPROACH %'s :	76.92%	0.00%	23.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	84.74%	15.26%	0.00%	3.03%	96.97%	0.00%	0.00%	0.00%
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	3	0	3	0	0	0	0	0	0	89	15	0	2	71	0	0	0
PEAK HR FACTOR :	0.750	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.890	0.536	0.000	0.500	0.772	0.000	0.000	0.000
	0.750																0.915

National Data & Surveying Services Intersection Turning Movement Count

Location: Marbly Ave & Serravista Ave
City: Daly City
Control: No Control

Project ID: 21-080154-002
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Marbly Ave				Marbly Ave				Serravista Ave				Serravista Ave					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	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
	7:30 AM	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
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL	
APPROACH %'s :																		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	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	0	0	0	0	0
	5:15 PM	0	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	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	TOTAL	
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%		
PEAK HR :	04:15 PM - 05:15 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services **Intersection Turning** Movement Count

Location: Marbly Ave & Serravista Ave
City: Daly City

Project ID: 21-080154-002
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Marbly Ave		Marbly Ave		Serravista Ave		Serravista Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	1	2	0	0	0	3
7:15 AM	0	0	0	2	0	0	0	0	2
7:30 AM	0	0	1	0	0	0	2	0	3
7:45 AM	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	1	2
8:30 AM	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	4	3	2	0	2	1	12
			57.14%	42.86%	100.00%	0.00%	66.67%	33.33%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	1	3
PEAK HR FACTOR :			0.500	0				0.250	0.375
				0.500				0.250	

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	1	1	0	0	0	1	3
4:15 PM	0	0	0	0	1	1	0	0	2
4:30 PM	0	0	1	0	0	0	1	0	2
4:45 PM	0	0	0	0	0	0	2	0	2
5:00 PM	0	0	0	0	0	3	0	1	4
5:15 PM	0	0	0	2	0	0	2	1	5
5:30 PM	0	0	0	2	0	0	0	2	4
5:45 PM	0	0	0	0	1	1	0	0	2
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	2	5	2	5	5	5	24
			28.57%	71.43%	28.57%	71.43%	50.00%	50.00%	
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	0	1	0	1	4	3	1	10
PEAK HR FACTOR :			0.250	0	0.250	0.333	0.375	0.250	0.625
				0.250		0.417		0.500	

National Data & Surveying Services Intersection Turning Movement Count

Location: Serravista Ave & Victoria St/Serra Ln/Montevista Ln
 City: Daly City

Project ID: 21-080154-003
 Date: 7/20/2021

Data - Pedestrians (Crosswalks)

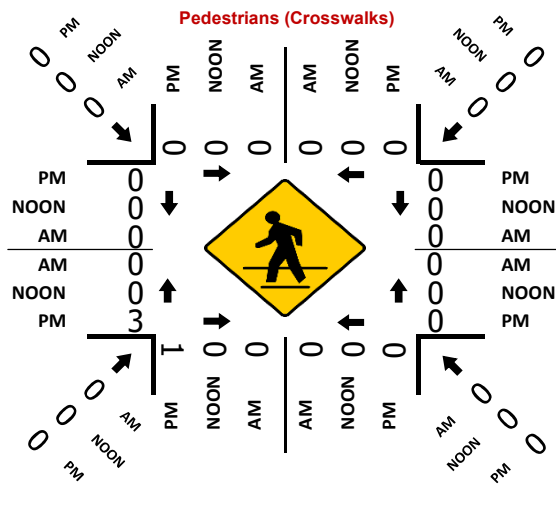
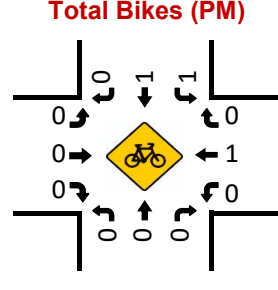
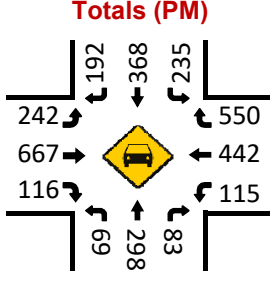
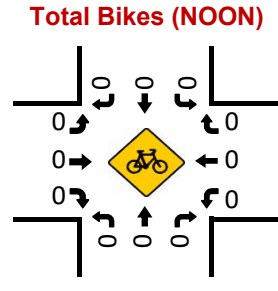
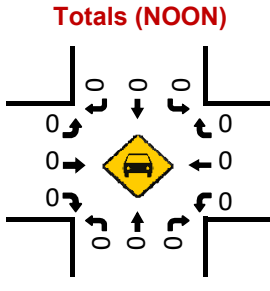
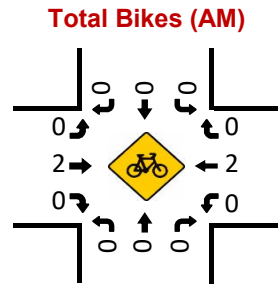
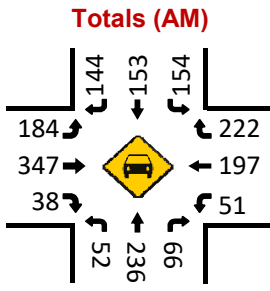
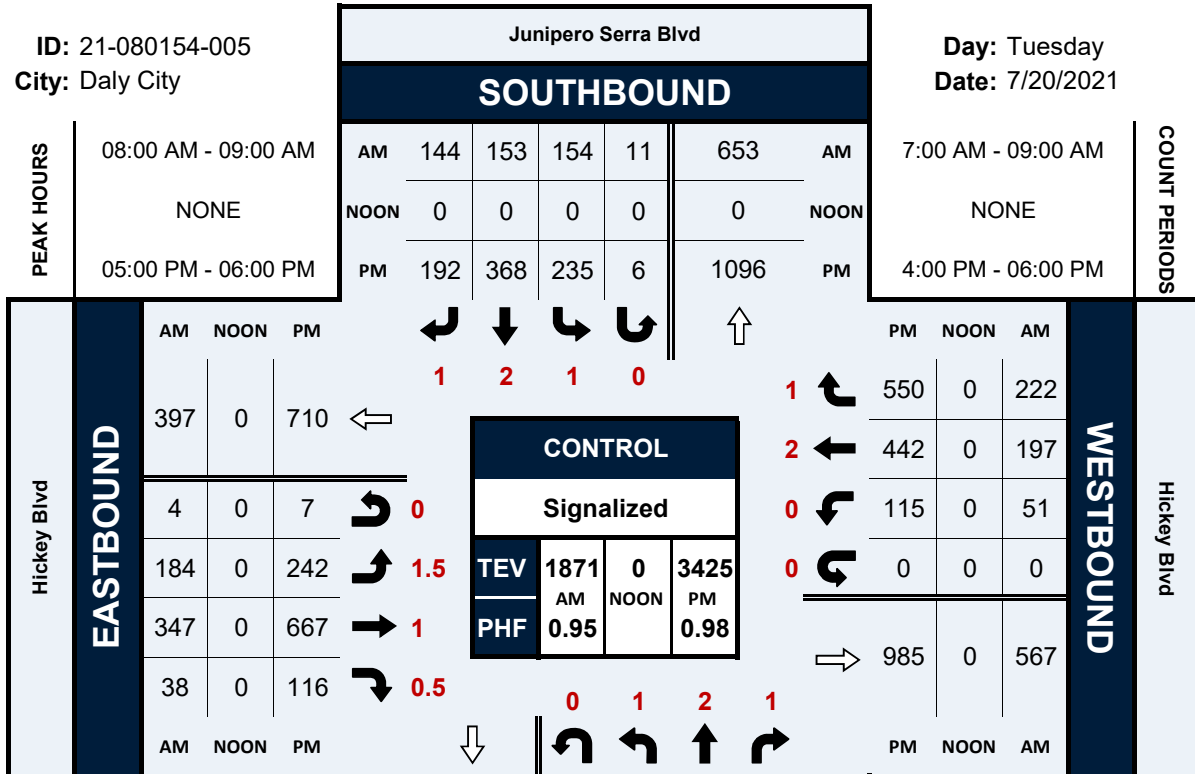
NS/EW Streets:	Serravista Ave		Serravista Ave		Victoria St/Serra Ln/Montevista Ln		Victoria St/Serra Ln/Montevista Ln										
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		EAST LEG 2		TOTAL						
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB							
	7:00 AM	0	0	0	2	1	0	1	0	1	0	5					
	7:15 AM	0	0	0	0	0	0	3	0	0	0	3					
	7:30 AM	0	0	0	0	1	0	1	0	1	0	3					
	7:45 AM	0	0	0	0	1	0	1	1	0	0	3					
	8:00 AM	0	0	0	0	1	0	0	1	0	0	2					
	8:15 AM	0	0	0	0	0	2	0	0	0	2	4					
	8:30 AM	0	0	0	0	0	0	1	0	0	0	1					
	8:45 AM	1	0	0	0	1	1	0	0	1	1	5					
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL						
APPROACH %'s :	1	0	0	2	5	3	7	2	3	3	26						
PEAK HR :	100.00%		0.00%		62.50%		37.50%		77.78%		22.22%		50.00%		50.00%		TOTAL
PEAK HR VOL :	08:00 AM - 09:00 AM		0		2		3		1		1		1		3		TOTAL
PEAK HR FACTOR :	0.250		0		0.500		0.375		0.250		0.250		0.250		0.375		TOTAL
	0.250				0.625				0.500				0.500		0.600		
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		EAST LEG 2		TOTAL						
	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB							
	4:00 PM	0	0	0	0	0	0	1	1	0	0	2					
	4:15 PM	0	0	1	0	0	0	0	1	0	0	2					
	4:30 PM	0	0	0	0	0	0	0	1	0	0	1					
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0					
	5:00 PM	0	0	0	0	0	0	0	2	0	0	2					
	5:15 PM	0	0	0	0	0	1	2	0	0	1	4					
	5:30 PM	0	0	0	1	0	1	1	0	0	1	4					
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0					
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	NB	SB	TOTAL						
APPROACH %'s :	0	0	1	1	0	2	4	5	0	2	15						
PEAK HR :	50.00%		50.00%		0.00%		100.00%		44.44%		55.56%		0.00%		100.00%		TOTAL
PEAK HR VOL :	04:45 PM - 05:45 PM		0		0		2		3		2		0		2		TOTAL
PEAK HR FACTOR :	0		0.250		0		0.500		0.375		0.250		0		0.500		TOTAL
	0		0.250		0.500		0.500		0.625		0.250		0.500		0.625		

Junipero Serra Blvd & Hickey Blvd

Peak Hour Turning Movement Count

ID: 21-080154-005
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Junipero Serra Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-005
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Junipero Serra Blvd				Junipero Serra Blvd				Hickey Blvd				Hickey Blvd				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1	2	1	0	1	2	1	0	1.5	1	0.5	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	3	41	7	3	16	19	23	0	31	43	7	1	4	16	49	0	263
7:15 AM	5	53	3	2	10	25	24	1	39	50	4	1	6	21	47	0	291
7:30 AM	7	64	13	3	24	22	15	1	60	52	10	0	7	30	66	0	374
7:45 AM	9	78	15	2	23	30	22	2	63	80	8	1	12	41	65	0	451
8:00 AM	6	56	17	3	33	38	35	3	38	78	12	0	11	44	56	0	430
8:15 AM	14	72	11	3	36	41	38	2	48	80	8	0	15	51	52	0	471
8:30 AM	14	53	19	5	37	29	36	4	56	98	11	3	14	40	59	0	478
8:45 AM	18	55	19	1	48	45	35	2	42	91	7	1	11	62	55	0	492
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	11.28%	70.03%	15.43%	3.26%	31.57%	34.63%	31.71%	2.09%	36.85%	55.91%	6.55%	0.68%	9.59%	36.57%	53.84%	0.00%	3250
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	52	236	66	12	154	153	144	11	184	347	38	4	51	197	222	0	1871
PEAK HR FACTOR :	0.722	0.819	0.868	0.600	0.802	0.850	0.947	0.688	0.821	0.885	0.792	0.333	0.850	0.794	0.941	0.000	0.951
	0.915				0.888				0.853				0.918				
PM	1	2	1	0	1	2	1	0	1.5	1	0.5	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	15	63	18	9	58	71	54	0	52	155	20	1	20	124	135	0	795
4:15 PM	15	72	23	6	63	98	55	0	61	150	19	3	28	108	140	0	841
4:30 PM	16	72	18	7	38	82	68	3	67	151	19	2	17	101	130	0	791
4:45 PM	16	54	16	8	63	85	39	3	49	177	21	3	23	111	145	0	813
5:00 PM	16	65	12	8	64	106	47	2	58	157	23	3	27	112	127	0	827
5:15 PM	12	91	26	4	55	77	43	1	68	169	29	1	38	125	131	0	870
5:30 PM	19	77	23	9	67	85	51	2	65	165	33	2	20	97	160	0	875
5:45 PM	22	65	22	14	49	100	51	1	51	176	31	1	30	108	132	0	853
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	14.35%	61.23%	17.31%	7.12%	28.91%	44.53%	25.81%	0.76%	23.76%	65.59%	9.84%	0.81%	9.27%	40.48%	50.25%	0.00%	6665
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	69	298	83	35	235	368	192	6	242	667	116	7	115	442	550	0	3425
PEAK HR FACTOR :	0.784	0.819	0.798	0.625	0.877	0.868	0.941	0.750	0.890	0.947	0.879	0.583	0.757	0.884	0.859	0.000	0.979
	0.912				0.914				0.966				0.941				

National Data & Surveying Services Intersection Turning Movement Count

Location: Junipero Serra Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-005
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Junipero Serra Blvd				Junipero Serra Blvd				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1.5 EL	1 ET	0.5 ER	0 EU	0 WL	2 WT	1 WR	0 WU	
7:00 AM	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
7:30 AM	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
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	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	2	0	0	2
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500
										0.250				0.250			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1.5 EL	1 ET	0.5 ER	0 EU	0 WL	2 WT	1 WR	0 WU	
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	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	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	0
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
TOTAL VOLUMES :	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	3
APPROACH %'s :					50.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																
PEAK HR VOL :	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.375
						0.500								0.250			

National Data & Surveying Services **Intersection Turning** Movement Count

Location: Junipero Serra Blvd & Hickey Blvd
City: Daly City

Project ID: 21-080154-005
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Junipero Serra Blvd		Junipero Serra Blvd		Hickey Blvd		Hickey Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	1	0	0	0	1	0	2
			100.00%	0.00%			100.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

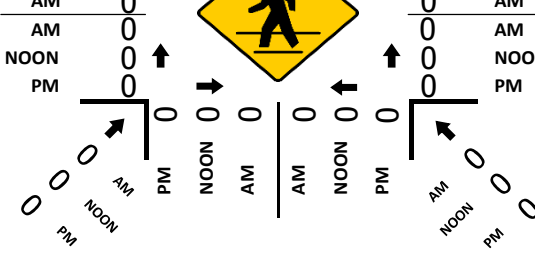
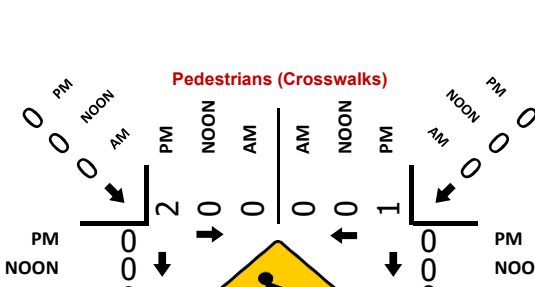
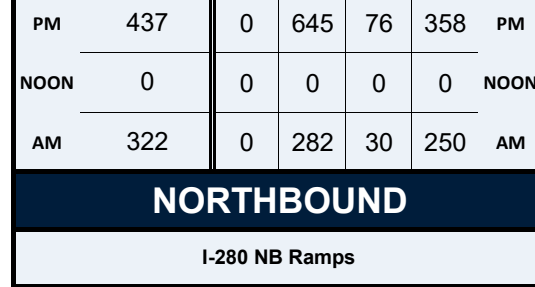
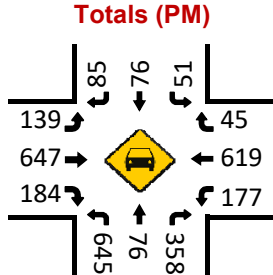
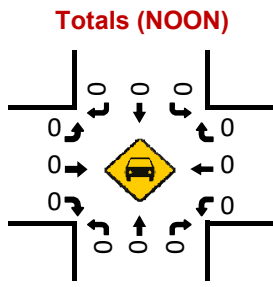
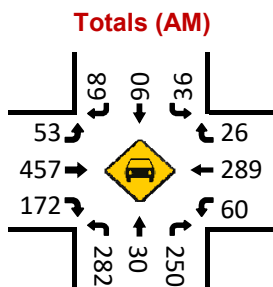
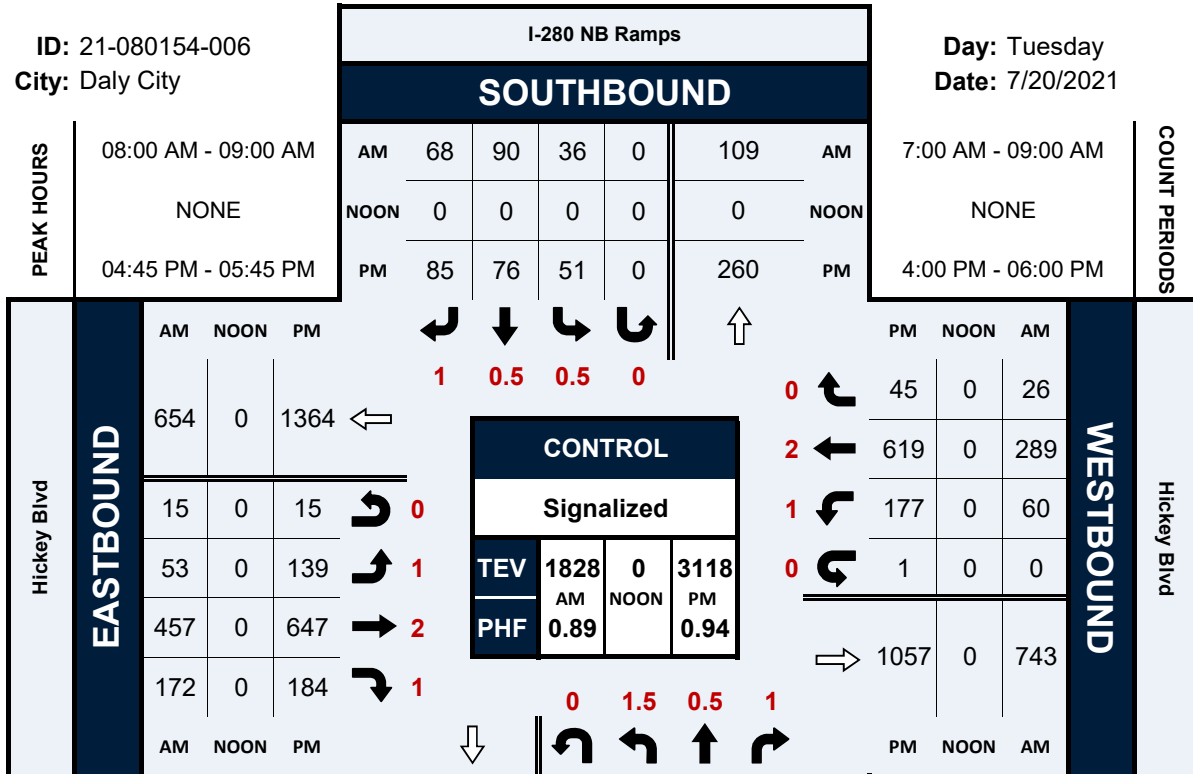
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	2	0	2
5:15 PM	0	0	1	0	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	1	0	0	0	3	0	4
			100.00%	0.00%			100.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	0	0	1	0	0	0	3	0	4
PEAK HR FACTOR :			0.250	0			0.375	0	0.500
				0.250				0.375	

I-280 NB Ramps & Hickey Blvd

Peak Hour Turning Movement Count

ID: 21-080154-006
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 NB Ramps & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-006
Date: 7/20/2021

Data - Totals

NS/EW Streets:	I-280 NB Ramps				I-280 NB Ramps				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	36	9	26	0	6	14	19	0	10	45	29	2	11	41	2	1	251
7:15 AM	40	9	45	0	3	24	12	0	12	57	58	2	8	33	6	0	309
7:30 AM	63	7	59	0	9	29	24	0	13	53	52	2	8	43	4	0	366
7:45 AM	59	10	55	0	11	23	21	0	26	95	43	3	8	56	0	1	411
8:00 AM	53	11	59	0	9	28	13	0	8	91	40	7	15	68	9	0	411
8:15 AM	72	5	65	0	10	23	13	0	18	113	44	1	15	56	7	0	442
8:30 AM	76	7	72	0	7	21	19	0	14	127	57	3	17	84	9	0	513
8:45 AM	81	7	54	0	10	18	23	0	13	126	31	4	13	81	1	0	462
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	480	65	435	0	65	180	144	0	114	707	354	24	95	462	38	2	3165
APPROACH %'s :	48.98%	6.63%	44.39%	0.00%	16.71%	46.27%	37.02%	0.00%	9.51%	58.97%	29.52%	2.00%	15.91%	77.39%	6.37%	0.34%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	282	30	250	0	36	90	68	0	53	457	172	15	60	289	26	0	1828
PEAK HR FACTOR :	0.870	0.682	0.868	0.000	0.900	0.804	0.739	0.000	0.736	0.900	0.754	0.536	0.882	0.860	0.722	0.000	0.891
					0.951				0.867				0.852				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	125	15	81	0	16	25	22	0	23	152	33	2	46	161	13	0	714
4:15 PM	157	24	93	0	13	22	11	0	20	160	45	4	46	130	15	0	740
4:30 PM	162	30	84	0	10	23	16	0	22	161	45	5	44	161	15	0	778
4:45 PM	159	15	80	0	18	20	20	0	35	173	46	2	51	139	10	0	768
5:00 PM	146	14	83	0	12	13	23	0	38	160	46	7	49	149	12	0	752
5:15 PM	165	20	103	0	15	21	21	0	30	142	36	1	39	166	13	1	773
5:30 PM	175	27	92	0	6	22	21	0	36	172	56	5	38	165	10	0	825
5:45 PM	182	24	65	0	7	13	20	0	29	155	47	6	30	136	15	0	729
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	1271	169	681	0	97	159	154	0	233	1275	354	32	343	1207	103	1	6079
APPROACH %'s :	59.92%	7.97%	32.11%	0.00%	23.66%	38.78%	37.56%	0.00%	12.30%	67.32%	18.69%	1.69%	20.74%	72.97%	6.23%	0.06%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	645	76	358	0	51	76	85	0	139	647	184	15	177	619	45	1	3118
PEAK HR FACTOR :	0.921	0.704	0.869	0.000	0.708	0.864	0.924	0.000	0.914	0.935	0.821	0.536	0.868	0.932	0.865	0.250	0.945
					0.918				0.915				0.961				

National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 NB Ramps & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-006
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	I-280 NB Ramps				I-280 NB Ramps				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	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
7:30 AM	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
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	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
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250

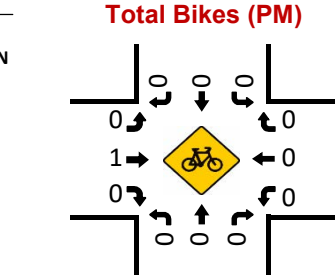
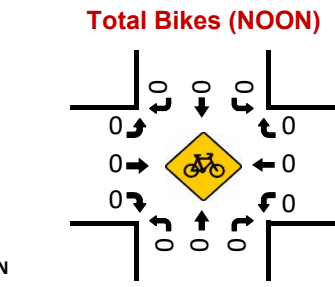
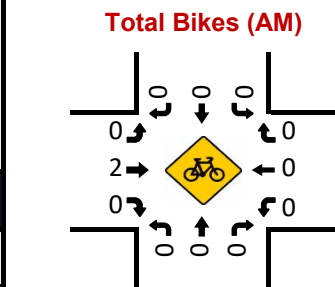
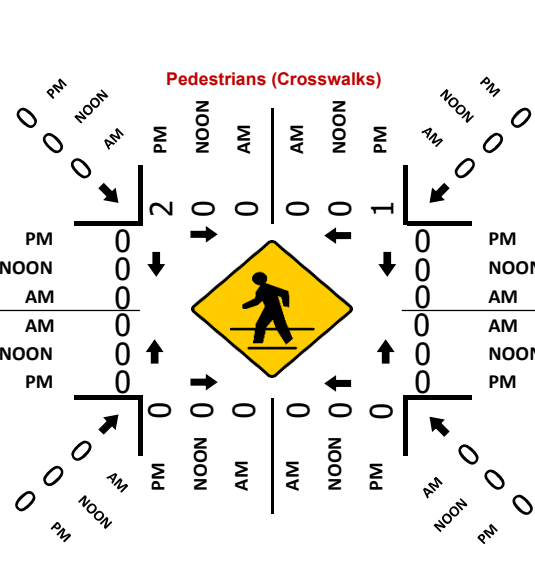
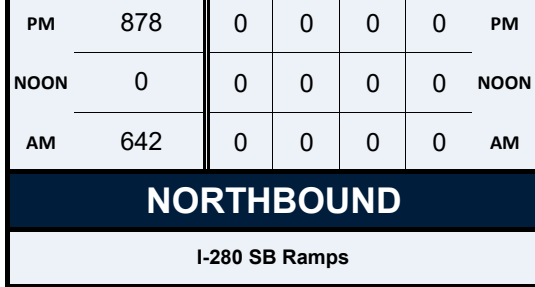
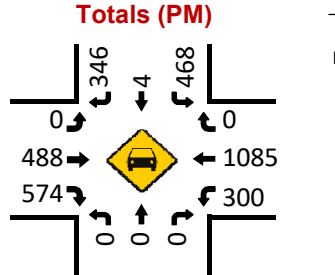
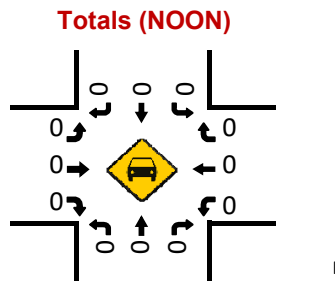
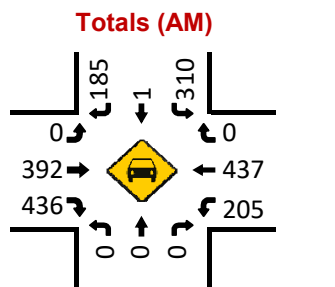
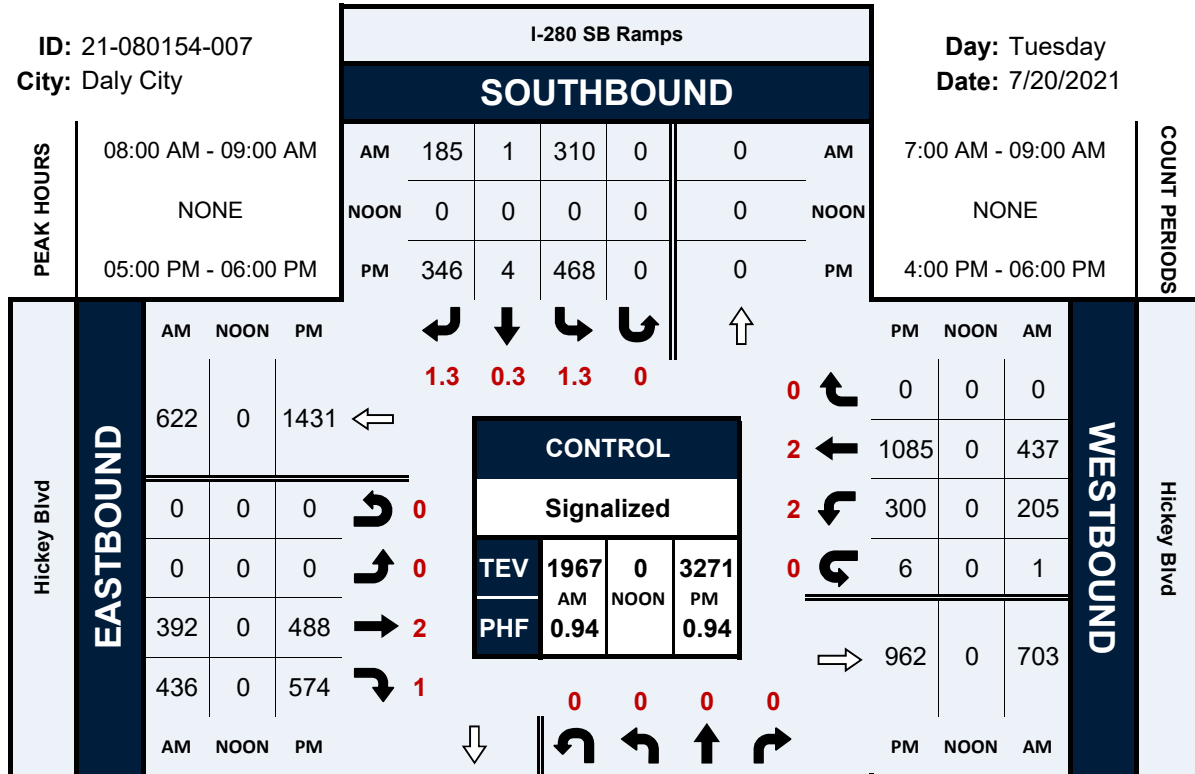
NS/EW Streets:	I-280 NB Ramps				I-280 NB Ramps				Hickey Blvd				Hickey Blvd				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
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	1	0	1	1	0	0	1	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	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	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	1	0	0	0	0	0	1	0	2
TOTAL VOLUMES :	1	0	1	0	1	1	0	0	2	0	0	0	0	0	1	0	7
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

I-280 SB Ramps & Hickey Blvd

Peak Hour Turning Movement Count

ID: 21-080154-007
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 SB Ramps & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-007
Date: 7/20/2021

Data - Totals

NS/EW Streets:	I-280 SB Ramps				I-280 SB Ramps				Hickey Blvd				Hickey Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	0	0	0	0	1.3	0.3	1.3	0	0	2	1	0	2	2	0	0		
7:00 AM	0	0	0	0	30	0	26	0	0	53	82	0	38	61	0	0		
7:15 AM	0	0	0	0	44	0	18	0	0	85	95	0	26	61	0	0		
7:30 AM	0	0	0	0	43	0	30	0	0	84	102	0	44	80	0	0		
7:45 AM	0	0	0	0	61	0	35	0	0	101	99	0	38	105	0	0		
8:00 AM	0	0	0	0	68	0	45	0	0	83	122	0	47	89	0	1		
8:15 AM	0	0	0	0	76	0	55	0	0	98	94	0	48	95	0	0		
8:30 AM	0	0	0	0	84	1	41	0	0	113	111	0	48	125	0	0		
8:45 AM	0	0	0	0	82	0	44	0	0	98	109	0	62	128	0	0		
TOTAL VOLUMES :	0	0	0	0	488	1	294	0	0	715	814	0	351	744	0	1		
APPROACH %'s :					62.32%	0.13%	37.55%	0.00%	0.00%	46.76%	53.24%	0.00%	32.03%	67.88%	0.00%	0.09%		
PEAK HR :	08:00 AM - 09:00 AM																	
PEAK HR VOL :	0	0	0	0	310	1	185	0	0	392	436	0	205	437	0	1		
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.923	0.250	0.841	0.000	0.000	0.867	0.893	0.000	0.827	0.854	0.000	0.250		
					0.947						0.924							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	0	0	0	0	1.3	0.3	1.3	0	0	2	1	0	2	2	0	0		
4:00 PM	0	0	0	0	108	1	72	0	0	108	117	0	81	236	0	0		
4:15 PM	0	0	0	0	113	2	95	0	0	116	122	0	58	234	0	2		
4:30 PM	0	0	0	0	98	0	69	0	0	126	123	0	83	268	0	2		
4:45 PM	0	0	0	0	123	0	88	0	0	136	128	0	57	258	0	0		
5:00 PM	0	0	0	0	111	0	77	0	0	138	171	0	67	249	0	0		
5:15 PM	0	0	0	0	112	3	89	0	0	94	130	0	78	278	0	3		
5:30 PM	0	0	0	0	134	0	91	0	0	143	142	0	82	280	0	2		
5:45 PM	0	0	0	0	111	1	89	0	0	113	131	0	73	278	0	1		
TOTAL VOLUMES :	0	0	0	0	910	7	670	0	0	974	1064	0	579	2081	0	10		
APPROACH %'s :					57.34%	0.44%	42.22%	0.00%	0.00%	47.79%	52.21%	0.00%	21.69%	77.94%	0.00%	0.37%		
PEAK HR :	05:00 PM - 06:00 PM																	
PEAK HR VOL :	0	0	0	0	468	4	346	0	0	488	574	0	300	1085	0	6		
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.873	0.333	0.951	0.000	0.000	0.853	0.839	0.000	0.915	0.969	0.000	0.500		
					0.909						0.859							

National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 SB Ramps & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-007
Date: 7/20/2021

Data - Bikes

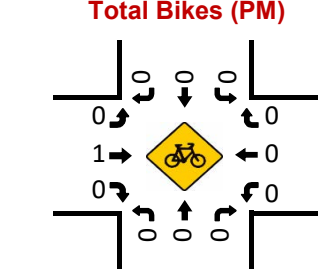
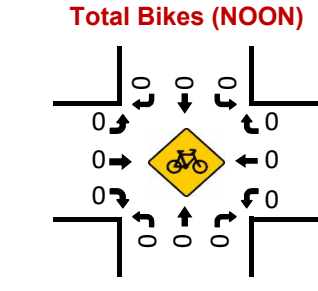
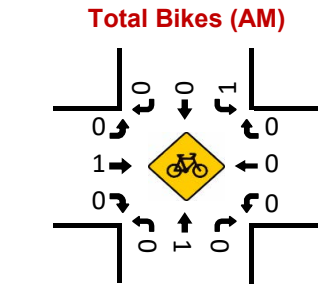
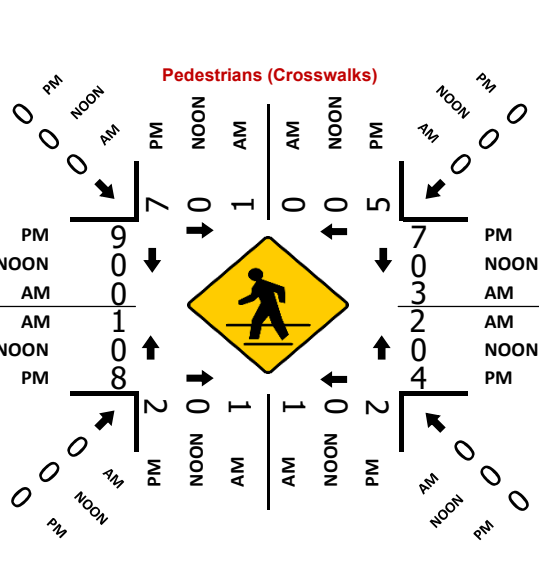
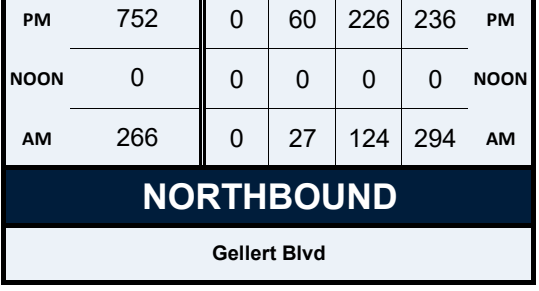
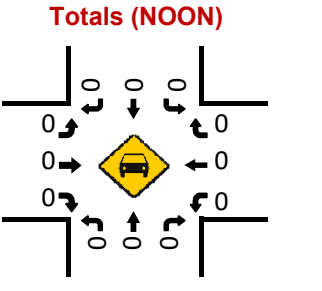
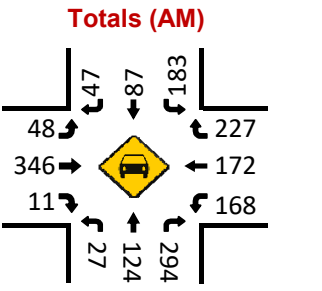
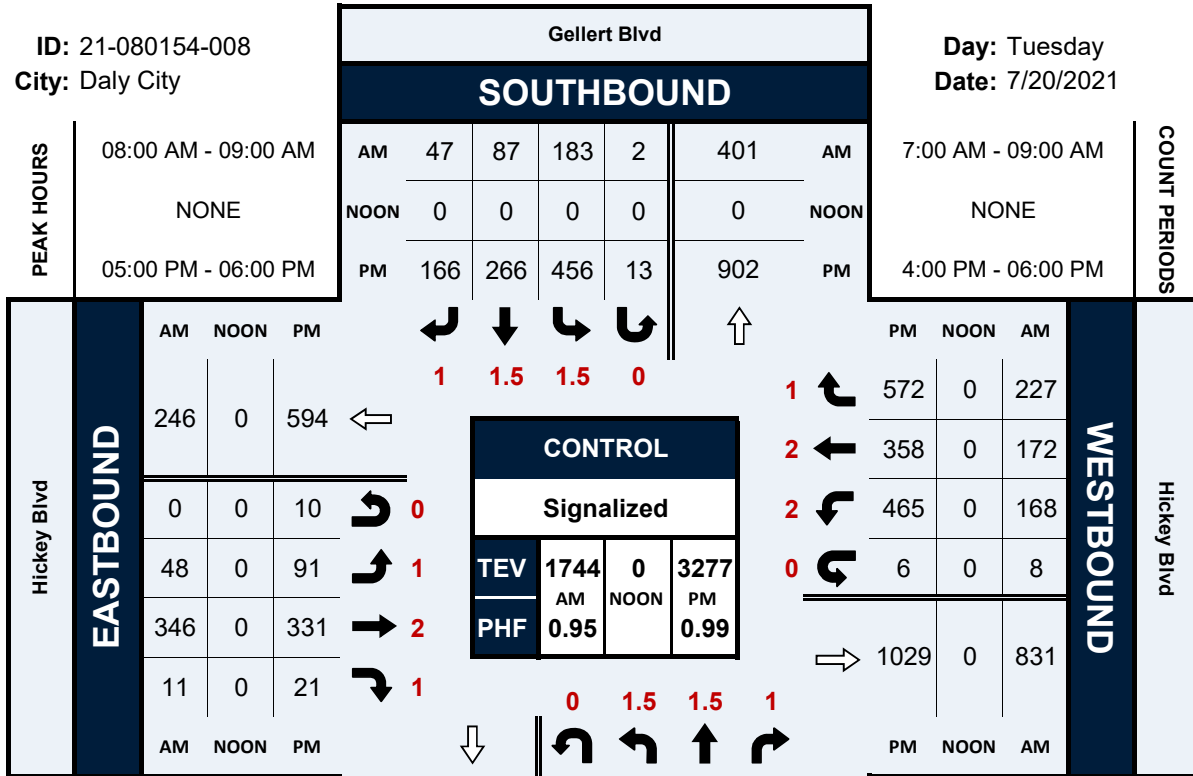
NS/EW Streets:	I-280 SB Ramps				I-280 SB Ramps				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	1.3	0.3	1.3	0	0	2	1	0	2	2	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	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
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	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
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%					
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
									0.250								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	1.3	0.3	1.3	0	0	2	1	0	2	2	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
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	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	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	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	1	0	0	0	0	0	0	1
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
									0.250								

Gellert Blvd & Hickey Blvd

Peak Hour Turning Movement Count

ID: 21-080154-008
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-008
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Hickey Blvd				Hickey Blvd							
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL			
	1.5 NL	1.5 NT	1 NR	0 NU	1.5 SL	1.5 ST	1 SR	0 SU	1 EL	2 ET	1 ER	0 EU	2 WL	2 WT	1 WR	0 WU				
7:00 AM	4	12	66	0	21	15	4	0	6	50	4	0	19	31	27	1	260			
7:15 AM	5	30	76	0	32	10	4	0	7	65	4	1	25	21	34	0	314			
7:30 AM	7	28	86	0	39	20	7	0	15	65	1	0	25	32	38	2	365			
7:45 AM	3	33	81	0	41	13	9	0	18	73	2	2	35	52	44	1	407			
8:00 AM	8	26	84	0	45	22	6	0	5	76	1	0	44	43	49	1	410			
8:15 AM	7	33	73	0	40	20	15	1	18	79	2	0	34	37	57	4	420			
8:30 AM	8	33	87	0	48	15	13	1	10	92	2	0	43	47	56	0	455			
8:45 AM	4	32	50	0	50	30	13	0	15	99	6	0	47	45	65	3	459			
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL			
APPROACH %'s :	46	227	603	0	316	145	71	2	94	599	22	3	272	308	370	12	3090			
	5.25%	25.91%	68.84%	0.00%	59.18%	27.15%	13.30%	0.37%	13.09%	83.43%	3.06%	0.42%	28.27%	32.02%	38.46%	1.25%				
PEAK HR :	08:00 AM - 09:00 AM																TOTAL			
PEAK HR VOL :	27	124	294	0	183	87	47	2	48	346	11	0	168	172	227	8	1744			
PEAK HR FACTOR :	0.844	0.939	0.845	0.000	0.915	0.725	0.783	0.500	0.667	0.874	0.458	0.000	0.894	0.915	0.873	0.500	0.950			
					0.869				0.858				0.844				0.898			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL			
	1.5 NL	1.5 NT	1 NR	0 NU	1.5 SL	1.5 ST	1 SR	0 SU	1 EL	2 ET	1 ER	0 EU	2 WL	2 WT	1 WR	0 WU				
4:00 PM	10	47	49	0	96	60	44	3	23	73	2	1	109	71	113	3	704			
4:15 PM	8	47	54	0	106	48	48	1	23	64	8	1	102	91	126	4	731			
4:30 PM	11	60	67	0	101	57	40	4	26	68	8	0	84	78	150	4	758			
4:45 PM	14	56	61	0	116	70	65	1	24	67	8	3	99	84	144	1	813			
5:00 PM	16	46	67	0	121	48	42	6	25	106	9	3	106	85	132	3	815			
5:15 PM	15	62	50	0	111	69	37	1	24	73	2	4	120	90	148	2	808			
5:30 PM	13	39	70	0	113	65	35	3	27	73	5	0	133	100	154	0	830			
5:45 PM	16	79	49	0	111	84	52	3	15	79	5	3	106	83	138	1	824			
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL			
APPROACH %'s :	103	436	467	0	875	501	363	22	187	603	47	15	859	682	1105	18	6283			
	10.24%	43.34%	46.42%	0.00%	49.69%	28.45%	20.61%	1.25%	21.95%	70.77%	5.52%	1.76%	32.24%	25.60%	41.48%	0.68%				
PEAK HR :	05:00 PM - 06:00 PM																TOTAL			
PEAK HR VOL :	60	226	236	0	456	266	166	13	91	331	21	10	465	358	572	6	3277			
PEAK HR FACTOR :	0.938	0.715	0.843	0.000	0.942	0.792	0.798	0.542	0.843	0.781	0.583	0.625	0.874	0.895	0.929	0.500	0.987			
					0.906				0.901				0.792				0.905			

National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-008
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1.5	1	0	1.5	1.5	1	0	1	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	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
7:30 AM	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	1	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
8:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	4
	0.00%	100.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	3
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.375
			0.250			0.250				0.250							
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1.5	1.5	1	0	1.5	1.5	1	0	1	2	1	0	2	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	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	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	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	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	1	0	0	0	0	0	0	1
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	5
	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
										0.250							

National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Hickey Blvd
City: Daly City

Project ID: 21-080154-008
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Gellert Blvd		Gellert Blvd		Hickey Blvd		Hickey Blvd		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
AM	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	2	1	0	0	3
7:15 AM	0	0	0	0	0	0	1	0	1
7:30 AM	2	0	0	0	4	0	3	0	9
7:45 AM	1	0	0	0	1	2	0	1	5
8:00 AM	0	0	0	0	1	0	0	0	1
8:15 AM	1	0	0	0	0	0	1	0	2
8:30 AM	0	0	1	1	0	2	0	0	4
8:45 AM	0	0	0	0	1	1	0	0	2
TOTAL VOLUMES :	EB 4	WB 0	EB 1	WB 1	NB 9	SB 6	NB 5	SB 1	TOTAL 27
APPROACH %'s :	100.00%	0.00%	50.00%	50.00%	60.00%	40.00%	83.33%	16.67%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	1	0	1	1	2	3	1	0	9
PEAK HR FACTOR :	0.250	0.250	0.250	0.250	0.500	0.375	0.250	0.250	0.563

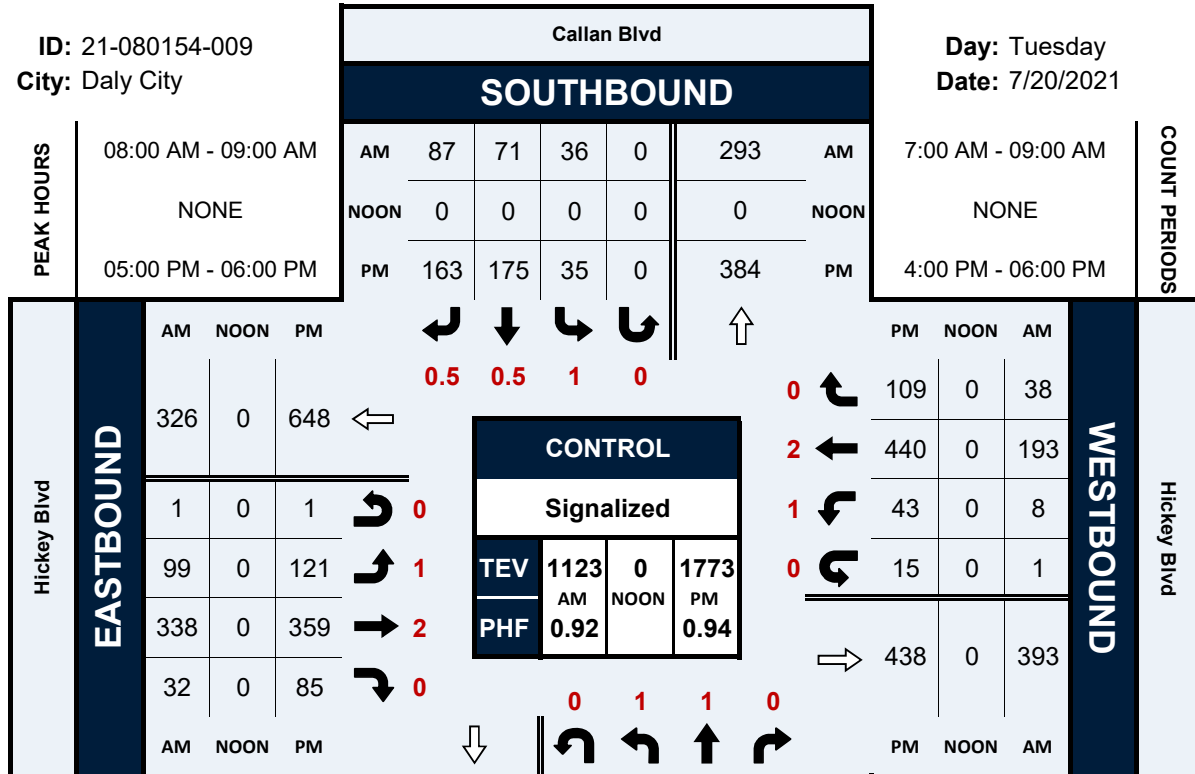
NS/EW Streets:	Gellert Blvd		Gellert Blvd		Hickey Blvd		Hickey Blvd		TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
PM	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	1	0	0	1	1	2	3	0	8
4:15 PM	0	5	1	0	4	1	3	0	14
4:30 PM	1	0	1	0	0	0	2	2	6
4:45 PM	0	2	0	0	1	0	0	2	5
5:00 PM	2	1	0	0	2	1	2	3	11
5:15 PM	1	2	1	0	1	2	3	4	14
5:30 PM	2	2	1	2	1	2	0	2	12
5:45 PM	2	0	0	0	0	2	3	0	7
TOTAL VOLUMES :	EB 9	WB 12	EB 4	WB 3	NB 10	SB 10	NB 16	SB 13	TOTAL 77
APPROACH %'s :	42.86%	57.14%	57.14%	42.86%	50.00%	50.00%	55.17%	44.83%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	7	5	2	2	4	7	8	9	44
PEAK HR FACTOR :	0.875	0.625	0.500	0.250	0.500	0.875	0.667	0.563	0.786

Callan Blvd & Hickey Blvd

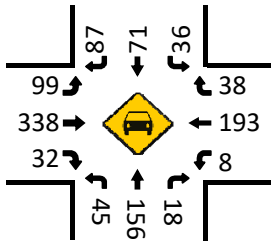
Peak Hour Turning Movement Count

ID: 21-080154-009
City: Daly City

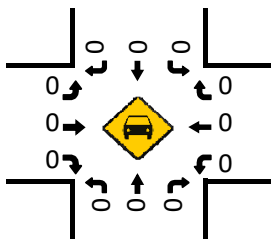
Day: Tuesday
Date: 7/20/2021



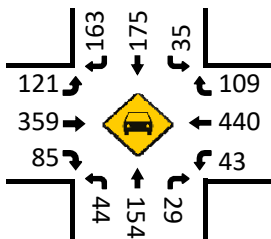
Totals (AM)



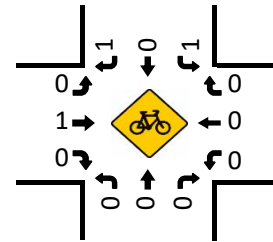
Totals (NOON)



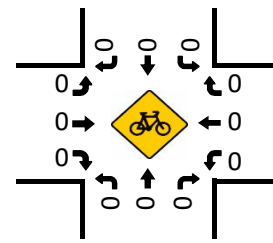
Totals (PM)



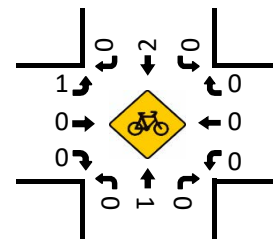
Total Bikes (AM)



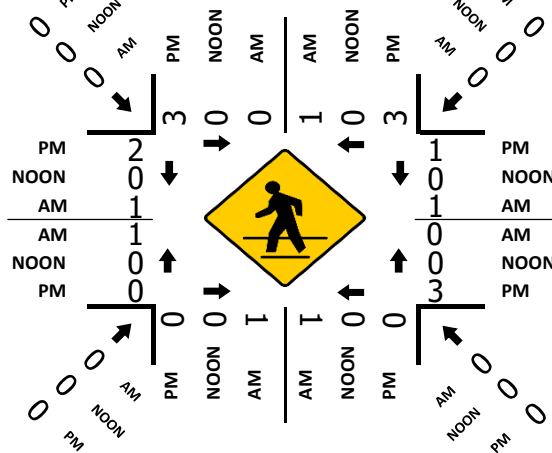
Total Bikes (NOON)



Total Bikes (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services Intersection Turning Movement Count

Location: Callan Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-009
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Callan Blvd				Callan Blvd				Hickey Blvd				Hickey Blvd				TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
AM	1	1	0	0	1	0.5	0.5	0	1	2	0	0	1	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	7	15	3	0	6	14	11	0	11	44	5	0	3	24	6	1	150
7:15 AM	8	32	5	0	5	9	18	0	18	68	2	0	2	24	6	0	197
7:30 AM	7	26	5	0	6	17	11	0	9	70	3	0	5	29	9	2	199
7:45 AM	12	32	6	0	11	12	27	0	26	70	8	0	2	51	6	0	263
8:00 AM	12	37	6	0	7	18	26	0	34	77	5	0	0	42	11	0	275
8:15 AM	12	36	3	0	6	16	22	0	21	72	6	0	3	49	5	1	252
8:30 AM	6	45	4	0	12	15	19	0	27	93	7	1	3	46	13	0	291
8:45 AM	15	38	5	0	11	22	20	0	17	96	14	0	2	56	9	0	305
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	79	261	37	0	64	123	154	0	163	590	50	1	20	321	65	4	1932
	20.95%	69.23%	9.81%	0.00%	18.77%	36.07%	45.16%	0.00%	20.27%	73.38%	6.22%	0.12%	4.88%	78.29%	15.85%	0.98%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	45	156	18	0	36	71	87	0	99	338	32	1	8	193	38	1	1123
PEAK HR FACTOR :	0.750	0.867	0.750	0.000	0.750	0.807	0.837	0.000	0.728	0.880	0.571	0.250	0.667	0.862	0.731	0.250	0.920
	0.944				0.915				0.918				0.896				
PM	1	1	0	0	1	0.5	0.5	0	1	2	0	0	1	2	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	12	40	4	0	8	46	45	0	36	77	9	1	7	87	31	3	406
4:15 PM	17	35	7	0	12	48	30	0	34	84	16	0	14	115	16	3	431
4:30 PM	10	51	4	0	5	32	34	0	30	81	17	0	7	99	20	1	391
4:45 PM	14	30	9	0	12	44	45	0	26	81	14	0	9	115	20	4	423
5:00 PM	16	41	10	0	9	46	44	0	35	103	22	0	10	106	25	6	473
5:15 PM	8	44	10	0	12	45	38	0	39	88	25	1	9	112	30	4	465
5:30 PM	10	32	3	0	4	44	35	0	21	74	22	0	5	101	30	2	383
5:45 PM	10	37	6	0	10	40	46	0	26	94	16	0	19	121	24	3	452
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	97	310	53	0	72	345	317	0	247	682	141	2	80	856	196	26	3424
	21.09%	67.39%	11.52%	0.00%	9.81%	47.00%	43.19%	0.00%	23.04%	63.62%	13.15%	0.19%	6.91%	73.92%	16.93%	2.25%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	44	154	29	0	35	175	163	0	121	359	85	1	43	440	109	15	1773
PEAK HR FACTOR :	0.688	0.875	0.725	0.000	0.729	0.951	0.886	0.000	0.776	0.871	0.850	0.250	0.566	0.909	0.908	0.625	0.937
	0.847				0.942				0.884				0.909				

National Data & Surveying Services Intersection Turning Movement Count

Location: Callan Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-009
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Callan Blvd				Callan Blvd				Hickey Blvd				Hickey Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	1 NL	1 NT	0 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU		
7:00 AM	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	
7:30 AM	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	
8:00 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	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	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	TOTAL	3
APPROACH %'s :					50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%						
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	3	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.375	

NS/EW Streets:	Callan Blvd				Callan Blvd				Hickey Blvd				Hickey Blvd					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	1 NL	1 NT	0 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU		
4:00 PM	0	0	0	0	0	1	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	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	4	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	1	0	0	0	3	0	0	1	0	0	0	0	0	0	0	TOTAL	5
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%						
PEAK HR :	05:00 PM - 06:00 PM																TOTAL	
PEAK HR VOL :	0	1	0	0	0	2	0	0	1	0	0	0	0	0	0	0	4	
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	

National Data & Surveying Services **Intersection Turning** Movement Count

Location: Callan Blvd & Hickey Blvd
City: Daly City

Project ID: 21-080154-009
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Callan Blvd		Callan Blvd		Hickey Blvd		Hickey Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	1	0	0	1	0	1	1	0	4
7:15 AM	0	0	0	0	0	1	0	1	2
7:30 AM	1	0	0	0	0	0	0	1	2
7:45 AM	1	0	1	0	0	0	0	1	3
8:00 AM	0	1	0	1	0	0	1	0	3
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	1	0	1	3
TOTAL VOLUMES :	EB 3	WB 1	EB 2	WB 2	NB 0	SB 3	NB 2	SB 4	TOTAL 17
APPROACH %'s :	75.00%	25.00%	50.00%	50.00%	0.00%	100.00%	33.33%	66.67%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	1	1	1	0	1	1	1	6
PEAK HR FACTOR :	0.250		0.250		0.250		0.250		0.500

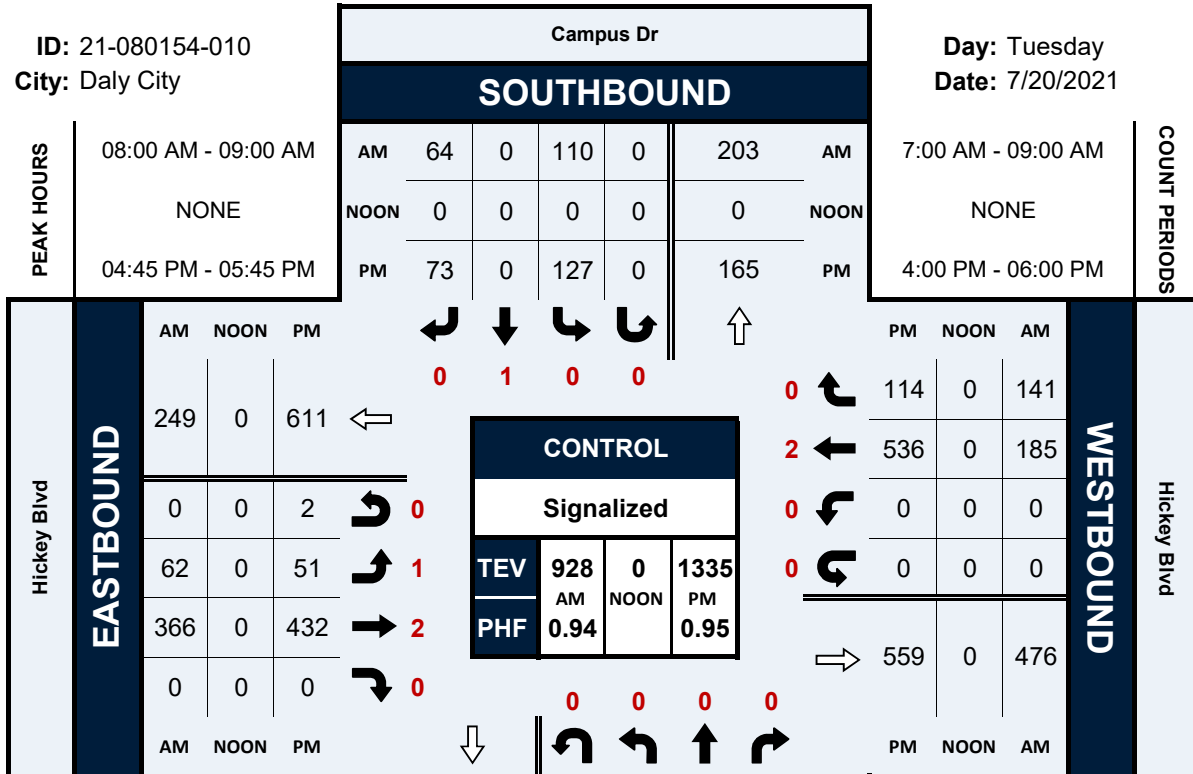
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	3	0	0	0	0	0	0	3
4:45 PM	0	0	0	1	0	0	0	0	1
5:00 PM	0	1	0	0	0	0	0	1	2
5:15 PM	1	0	0	0	2	1	0	0	4
5:30 PM	2	0	0	0	0	0	0	0	2
5:45 PM	0	2	0	0	1	0	0	1	4
TOTAL VOLUMES :	EB 3	WB 6	EB 0	WB 1	NB 3	SB 1	NB 0	SB 2	TOTAL 16
APPROACH %'s :	33.33%	66.67%	0.00%	100.00%	75.00%	25.00%	0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	3	3	0	0	3	1	0	2	12
PEAK HR FACTOR :	0.375		0.375		0.333		0.500		0.750

Campus Dr & Hickey Blvd

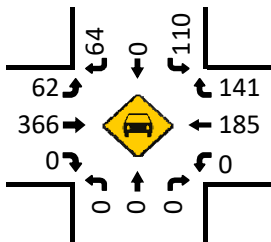
Peak Hour Turning Movement Count

ID: 21-080154-010
City: Daly City

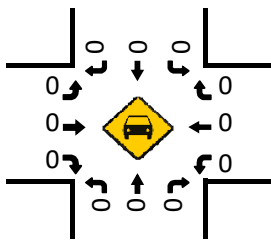
Day: Tuesday
Date: 7/20/2021



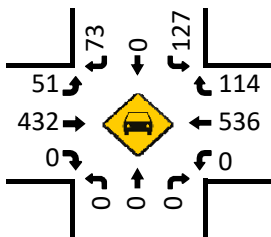
Totals (AM)



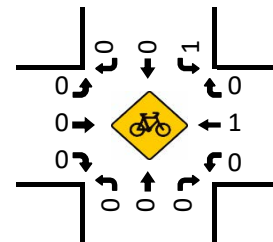
Totals (NOON)



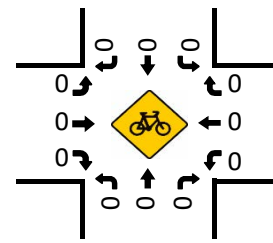
Totals (PM)



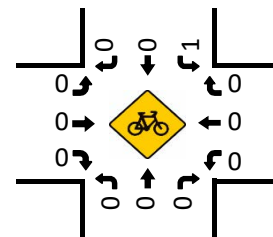
Total Bikes (AM)



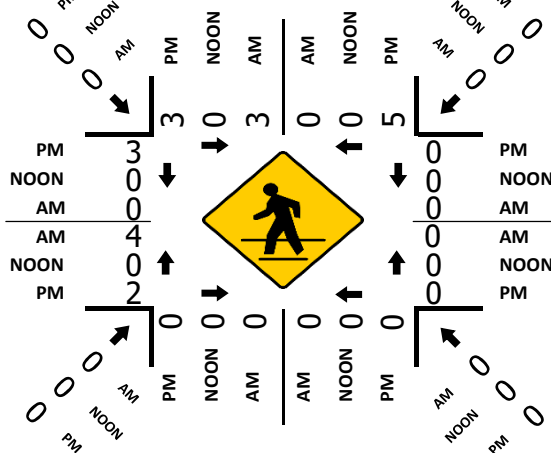
Total Bikes (NOON)



Total Bikes (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services Intersection Turning Movement Count

Location: Campus Dr & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-010
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Campus Dr				Campus Dr				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	10	0	9	0	4	55	0	0	0	29	13	0	120
7:15 AM	0	0	0	0	14	0	13	0	11	69	0	0	0	29	20	0	156
7:30 AM	0	0	0	0	8	0	9	0	7	80	0	0	0	28	18	0	150
7:45 AM	0	0	0	0	23	0	12	0	13	74	0	0	0	50	42	0	214
8:00 AM	0	0	0	0	39	0	22	0	23	77	0	0	0	33	42	0	236
8:15 AM	0	0	0	0	24	0	20	0	16	75	0	0	0	47	41	0	223
8:30 AM	0	0	0	0	23	0	12	0	10	105	0	0	0	49	23	0	222
8:45 AM	0	0	0	0	24	0	10	0	13	109	0	0	0	56	35	0	247
TOTAL VOLUMES :	0	0	0	0	165	0	107	0	97	644	0	0	0	321	234	0	1568
APPROACH %'s :					60.66%	0.00%	39.34%	0.00%	13.09%	86.91%	0.00%	0.00%	0.00%	57.84%	42.16%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	110	0	64	0	62	366	0	0	0	185	141	0	928
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.705	0.000	0.727	0.000	0.674	0.839	0.000	0.000	0.000	0.826	0.839	0.000	0.939
							0.713					0.877			0.896		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	27	0	21	0	7	97	0	0	0	114	33	0	299
4:15 PM	0	0	0	0	27	0	16	0	8	106	0	0	0	135	27	0	319
4:30 PM	0	0	0	0	26	0	23	0	6	101	0	0	0	109	28	0	293
4:45 PM	0	0	0	0	25	0	23	0	13	101	0	0	0	135	44	0	341
5:00 PM	0	0	0	0	41	0	22	0	12	116	0	0	0	135	26	0	352
5:15 PM	0	0	0	0	38	0	13	0	13	117	0	1	0	140	21	0	343
5:30 PM	0	0	0	0	23	0	15	0	13	98	0	1	0	126	23	0	299
5:45 PM	0	0	0	0	23	0	12	0	8	107	0	0	0	147	26	0	323
TOTAL VOLUMES :	0	0	0	0	230	0	145	0	80	843	0	2	0	1041	228	0	2569
APPROACH %'s :					61.33%	0.00%	38.67%	0.00%	8.65%	91.14%	0.00%	0.22%	0.00%	82.03%	17.97%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	127	0	73	0	51	432	0	2	0	536	114	0	1335
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.774	0.000	0.793	0.000	0.981	0.923	0.000	0.500	0.000	0.957	0.648	0.000	0.948
							0.794					0.926			0.908		

National Data & Surveying Services Intersection Turning Movement Count

Location: Campus Dr & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-010
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Campus Dr				Campus Dr				Hickey Blvd				Hickey Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
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	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
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
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																	
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0		
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000		0.500
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
4:00 PM	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	0	0	0
4:15 PM	0	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	0
4:45 PM	0	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	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	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%										
PEAK HR :	04:45 PM - 05:45 PM																	
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0		
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Campus Dr & Hickey Blvd
City: Daly City

Project ID: 21-080154-010
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Campus Dr		Campus Dr		Hickey Blvd		Hickey Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	1	1	0	0	0	0	0	0	2
7:30 AM	2	1	0	0	0	0	0	1	4
7:45 AM	0	1	0	0	0	0	0	2	3
8:00 AM	0	0	0	0	0	0	1	0	1
8:15 AM	2	0	0	0	0	0	2	0	4
8:30 AM	1	0	0	0	0	0	1	0	2
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	6	3	0	0	0	0	4	3	16
	66.67%	33.33%					57.14%	42.86%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	3	0	0	0	0	0	4	0	7
PEAK HR FACTOR :	0.375						0.500		0.438
		0.375					0.500		

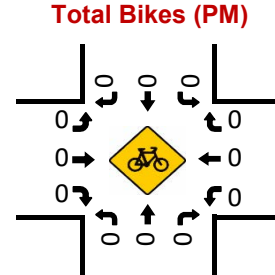
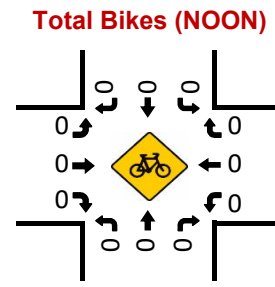
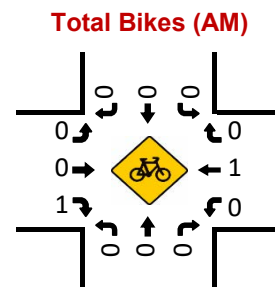
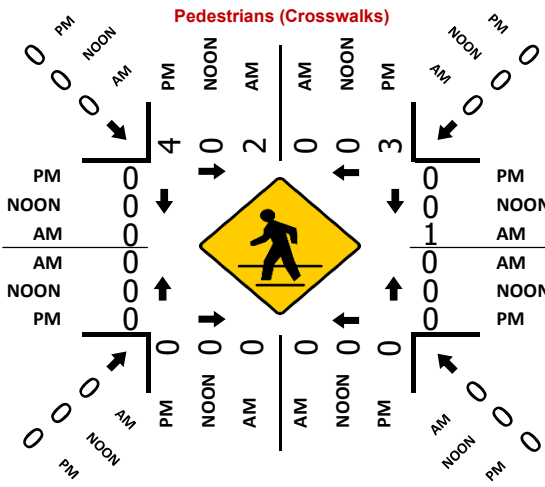
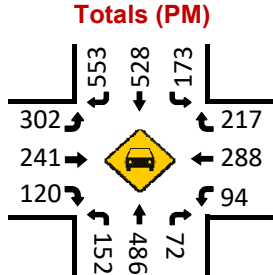
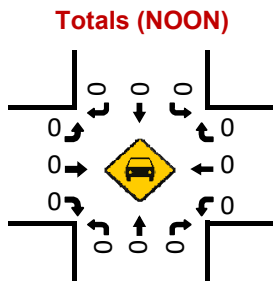
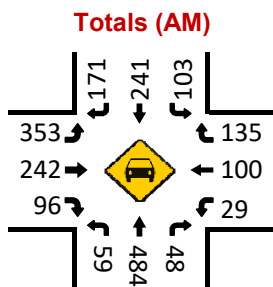
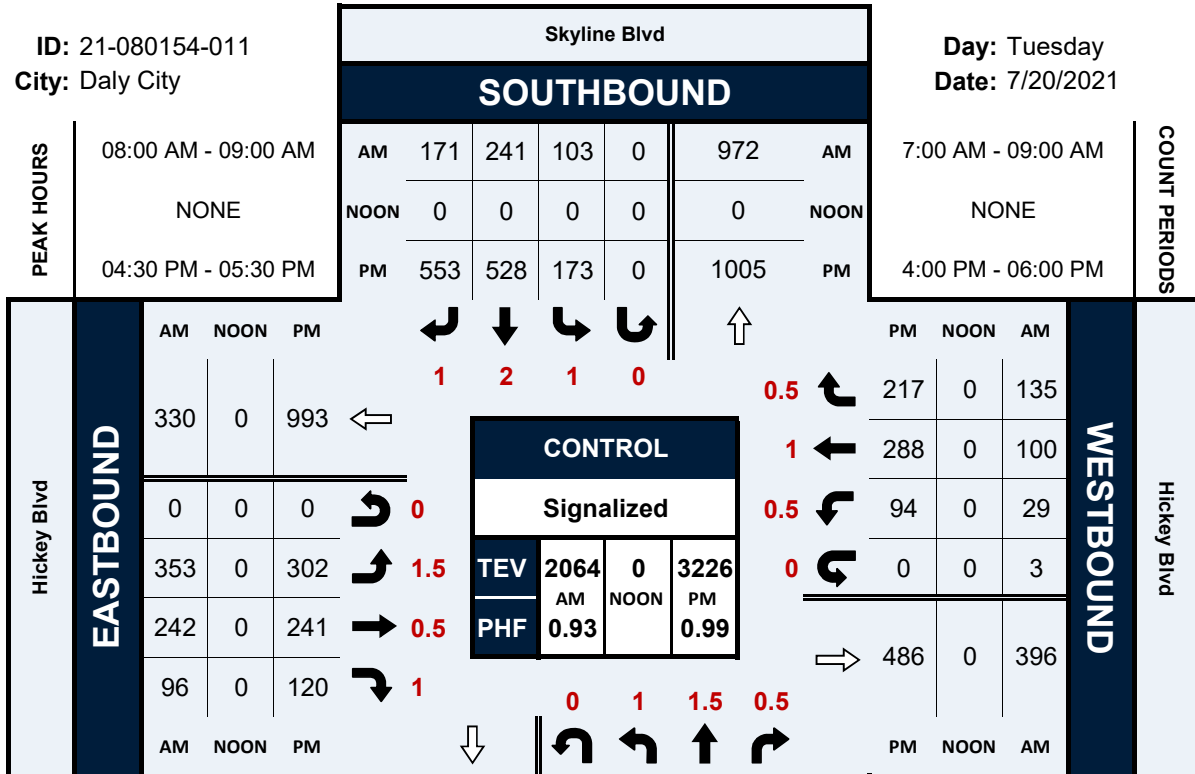
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	1	0	0	0	0	0	0	0	1
4:30 PM	0	1	0	0	0	0	2	1	4
4:45 PM	0	1	0	0	0	0	1	0	2
5:00 PM	0	1	0	0	0	0	1	1	3
5:15 PM	2	2	0	0	0	0	0	2	6
5:30 PM	1	1	0	0	0	0	0	0	2
5:45 PM	0	2	0	0	0	0	1	0	3
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	4	8	0	0	0	0	5	4	21
	33.33%	66.67%					55.56%	44.44%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	3	5	0	0	0	0	2	3	13
PEAK HR FACTOR :	0.375	0.625					0.500	0.375	0.542
		0.500					0.625		

Skyline Blvd & Hickey Blvd

Peak Hour Turning Movement Count

ID: 21-080154-011
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Skyline Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-011
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Skyline Blvd				Skyline Blvd				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1.5 NT	0.5 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1.5 EL	0.5 ET	1 ER	0 EU	0.5 WL	1 WT	0.5 WR	0 WU	
7:00 AM	12	101	6	0	19	32	25	0	77	42	16	0	4	20	22	0	376
7:15 AM	8	103	12	0	20	30	37	0	80	50	13	0	5	16	31	0	405
7:30 AM	10	108	8	0	17	47	38	0	98	61	19	0	4	14	28	0	452
7:45 AM	14	111	15	0	20	68	43	0	88	50	24	0	7	32	25	1	498
8:00 AM	17	111	11	0	29	50	34	0	99	51	29	0	4	15	44	0	494
8:15 AM	10	109	8	0	24	52	43	0	83	58	13	0	10	29	38	1	478
8:30 AM	12	143	14	0	21	76	48	0	82	72	25	0	9	25	24	1	552
8:45 AM	20	121	15	0	29	63	46	0	89	61	29	0	6	31	29	1	540
TOTAL VOLUMES :	103	907	89	0	179	418	314	0	696	445	168	0	49	182	241	4	3795
APPROACH %'s :	9.37%	82.53%	8.10%	0.00%	19.65%	45.88%	34.47%	0.00%	53.17%	34.00%	12.83%	0.00%	10.29%	38.24%	50.63%	0.84%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	59	484	48	0	103	241	171	0	353	242	96	0	29	100	135	3	2064
PEAK HR FACTOR :	0.738	0.846	0.800	0.000	0.888	0.793	0.891	0.000	0.891	0.840	0.828	0.000	0.725	0.806	0.767	0.750	0.935
			0.874				0.888				0.965				0.856		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1.5 NT	0.5 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1.5 EL	0.5 ET	1 ER	0 EU	0.5 WL	1 WT	0.5 WR	0 WU	
4:00 PM	31	112	13	0	26	110	90	0	59	56	30	0	22	68	45	0	662
4:15 PM	36	105	19	0	40	136	111	0	75	60	24	1	23	82	47	0	759
4:30 PM	39	113	15	0	42	136	132	0	86	45	33	0	20	69	53	0	783
4:45 PM	45	124	18	0	41	132	147	0	74	57	30	0	27	67	51	0	813
5:00 PM	38	128	17	0	46	116	132	0	81	71	28	0	23	79	56	0	815
5:15 PM	30	121	22	0	44	144	142	0	61	68	29	0	24	73	57	0	815
5:30 PM	23	110	19	0	34	127	126	0	74	59	27	0	26	67	40	0	732
5:45 PM	44	116	13	0	36	149	121	0	79	69	28	0	26	93	40	0	814
TOTAL VOLUMES :	286	929	136	0	309	1050	1001	0	589	485	229	1	191	598	389	0	6193
APPROACH %'s :	21.17%	68.76%	10.07%	0.00%	13.09%	44.49%	42.42%	0.00%	45.17%	37.19%	17.56%	0.08%	16.21%	50.76%	33.02%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	152	486	72	0	173	528	553	0	302	241	120	0	94	288	217	0	3226
PEAK HR FACTOR :	0.844	0.949	0.818	0.000	0.940	0.917	0.940	0.000	0.878	0.849	0.909	0.000	0.870	0.911	0.952	0.000	0.990
			0.949				0.950				0.921				0.948		

National Data & Surveying Services Intersection Turning Movement Count

Location: Skyline Blvd & Hickey Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-011
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Skyline Blvd				Skyline Blvd				Hickey Blvd				Hickey Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1.5 NT	0.5 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1.5 EL	0.5 ET	1 ER	0 EU	0.5 WL	1 WT	0.5 WR	0 WU	
7:00 AM	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
7:30 AM	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
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
8:30 AM	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
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
APPROACH %'s :									0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250

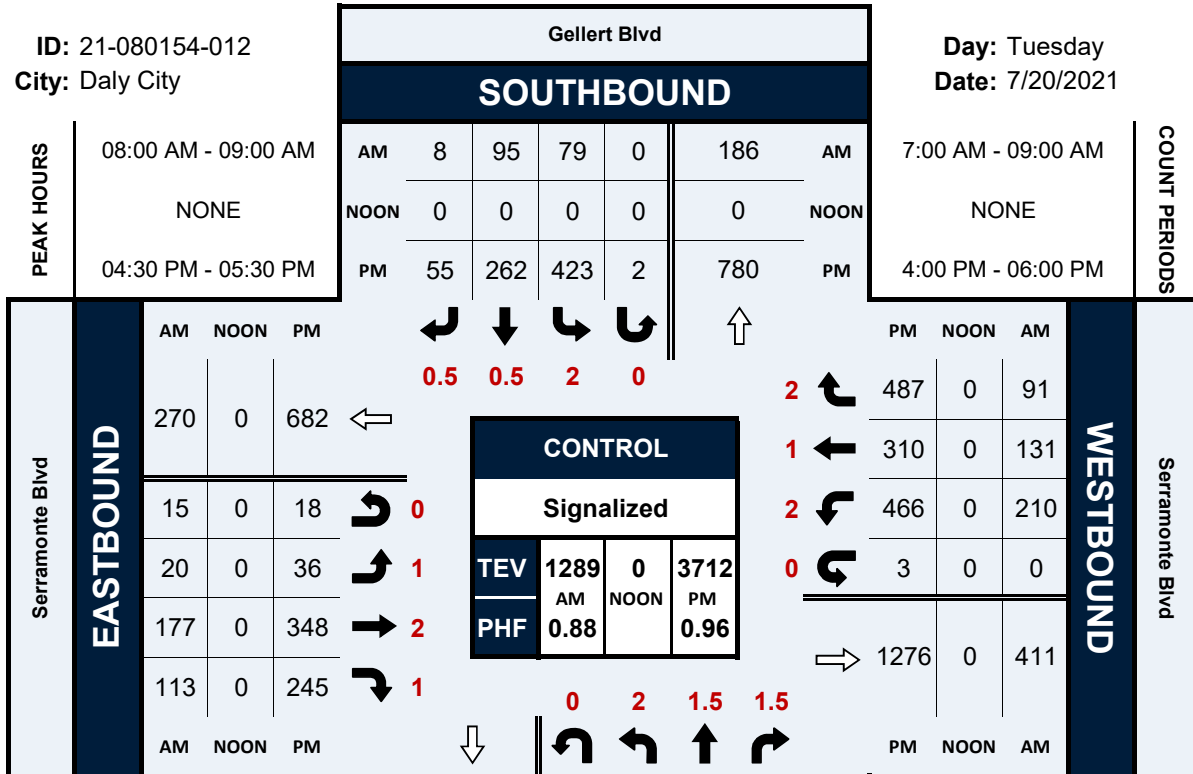
NS/EW Streets:	Skyline Blvd				Skyline Blvd				Hickey Blvd				Hickey Blvd				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1.5 NT	0.5 NR	0 NU	1 SL	2 ST	1 SR	0 SU	1.5 EL	0.5 ET	1 ER	0 EU	0.5 WL	1 WT	0.5 WR	0 WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	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	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
TOTAL VOLUMES :	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	3
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0

Gellert Blvd & Serramonte Blvd

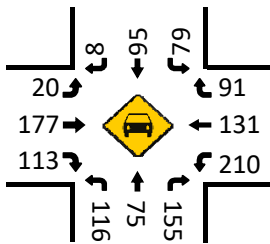
Peak Hour Turning Movement Count

ID: 21-080154-012
City: Daly City

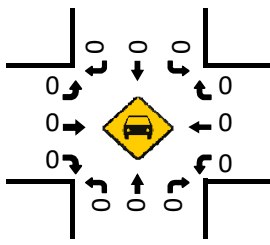
Day: Tuesday
Date: 7/20/2021



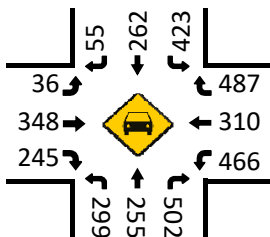
Totals (AM)



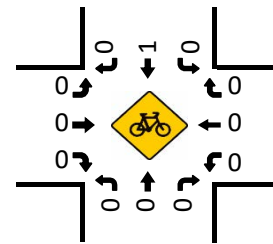
Totals (NOON)



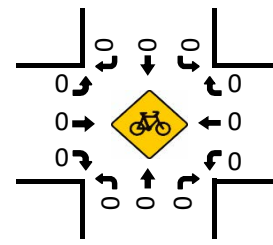
Totals (PM)



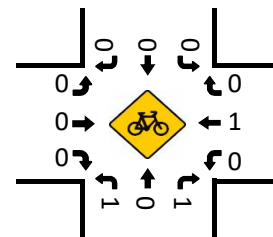
Total Bikes (AM)



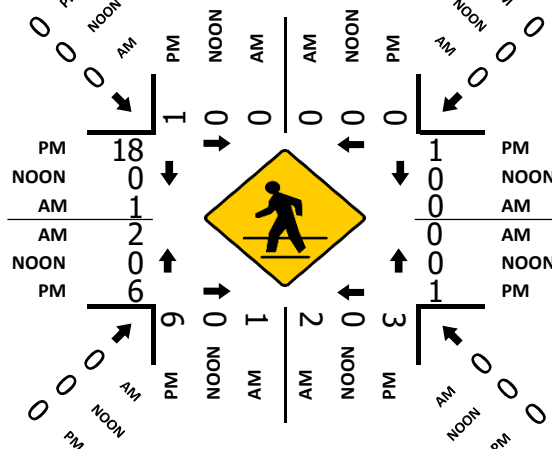
Total Bikes (NOON)



Total Bikes (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Serramonte Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-012
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Serramonte Blvd				Serramonte Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	2	1.5	1.5	0	2	0.5	0.5	0	1	2	1	0	2	1	2	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	7:00 AM	14	8	22	3	10	12	0	0	3	29	29	1	21	25	13	0	190
	7:15 AM	25	11	30	1	10	11	3	0	2	37	27	5	29	20	8	0	219
	7:30 AM	28	16	32	1	12	15	1	0	0	33	22	1	36	23	10	0	230
	7:45 AM	23	13	38	7	14	12	2	0	4	36	24	2	53	29	15	0	272
	8:00 AM	25	11	32	2	15	23	3	0	6	50	22	4	41	36	24	0	294
	8:15 AM	33	18	36	2	17	25	0	0	8	42	30	1	56	28	19	0	315
	8:30 AM	28	21	41	0	19	22	2	0	5	43	25	4	48	32	23	0	313
8:45 AM	30	25	46	0	28	25	3	0	1	42	36	6	65	35	25	0	367	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	206	123	277	16	125	145	14	0	29	312	215	24	349	228	137	0	2200	
	33.12%	19.77%	44.53%	2.57%	44.01%	51.06%	4.93%	0.00%	5.00%	53.79%	37.07%	4.14%	48.88%	31.93%	19.19%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	116	75	155	4	79	95	8	0	20	177	113	15	210	131	91	0	1289	
PEAK HR FACTOR :	0.879	0.750	0.866	0.500	0.705	0.950	0.667	0.000	0.625	0.885	0.785	0.625	0.808	0.910	0.910	0.000	0.878	
							0.813				0.956				0.864			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	2	1.5	1.5	0	2	0.5	0.5	0	1	2	1	0	2	1	2	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	4:00 PM	66	52	113	0	98	63	14	0	7	105	65	5	118	83	88	0	877
	4:15 PM	57	52	109	0	113	61	21	1	3	91	61	5	131	88	107	0	900
	4:30 PM	70	68	117	0	108	74	10	1	11	93	56	0	115	75	128	0	926
	4:45 PM	83	64	140	0	93	59	15	1	11	90	83	3	127	85	112	0	966
	5:00 PM	72	51	123	1	100	66	18	0	8	94	60	5	115	72	118	2	905
	5:15 PM	74	72	122	0	122	63	12	0	6	71	46	10	109	78	129	1	915
	5:30 PM	85	65	111	0	108	59	12	0	6	85	50	1	117	91	130	0	920
5:45 PM	82	53	110	0	104	63	18	0	7	90	82	5	107	74	118	0	913	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	589	477	945	1	846	508	120	3	59	719	503	34	939	646	930	3	7322	
	29.27%	23.71%	46.97%	0.05%	57.28%	34.39%	8.12%	0.20%	4.49%	54.68%	38.25%	2.59%	37.29%	25.66%	36.93%	0.12%		
PEAK HR :	04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :	299	255	502	1	423	262	55	2	36	348	245	18	466	310	487	3	3712	
PEAK HR FACTOR :	0.901	0.885	0.896	0.250	0.867	0.885	0.764	0.500	0.818	0.926	0.738	0.450	0.917	0.912	0.944	0.375	0.961	
			0.921				0.942				0.865				0.977			

National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Serramonte Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-012
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Serramonte Blvd				Serramonte Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
		2	1.5	1.5	0	2	0.5	0.5	0	1	2	1	0	2	1	2	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
	7:30 AM	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	1	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
	8:15 AM	0	0	0	0	0	1	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	2	0	0	0	1	0	0	0	0	1	0	4	
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
		2	1.5	1.5	0	2	0.5	0.5	0	1	2	1	0	2	1	2	0	
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	4:15 PM	0	0	1	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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	1	0	2	1	0	0	0	0	0	0	1	0	0	1	0	0	6	
APPROACH %'s :	25.00%	0.00%	50.00%	25.00%					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	3	
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.375	

National Data & Surveying Services **Intersection Turning** Movement Count

Location: Gellert Blvd & Serramonte Blvd
City: Daly City

Project ID: 21-080154-012
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Gellert Blvd		Gellert Blvd		Serramonte Blvd		Serramonte Blvd		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	1	0	1
7:45 AM	0	1	0	1	0	0	1	0	3
8:00 AM	0	0	0	2	0	0	1	0	3
8:15 AM	0	0	1	0	0	0	1	0	2
8:30 AM	0	0	0	0	0	0	0	1	1
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	1	1	3	0	0	4	1	10
	0.00%	100.00%	25.00%	75.00%			80.00%	20.00%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	0	1	2	0	0	2	1	6
PEAK HR FACTOR :			0.250	0.250			0.500	0.250	0.500
			0.375				0.750		

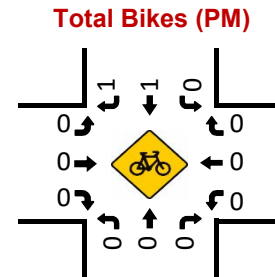
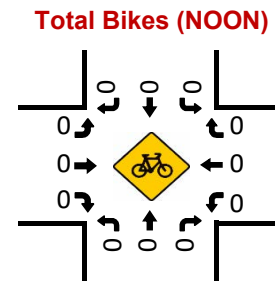
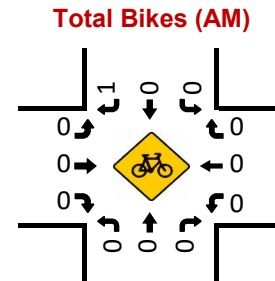
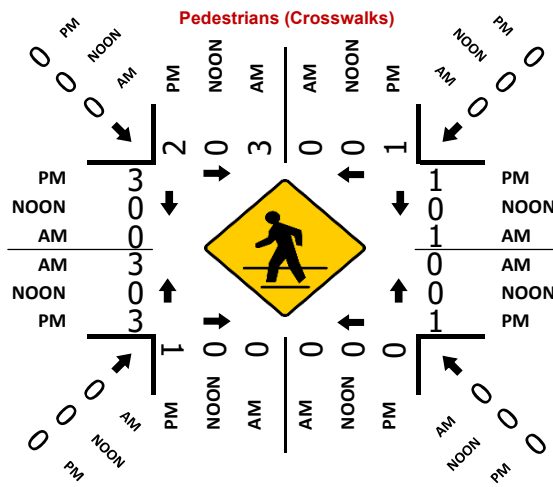
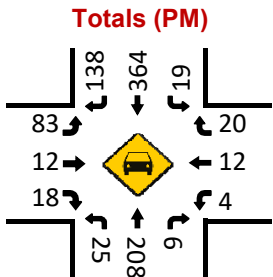
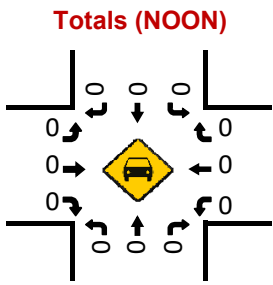
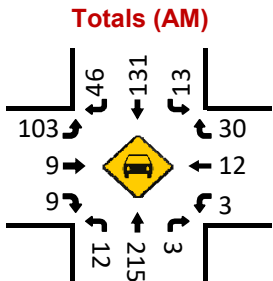
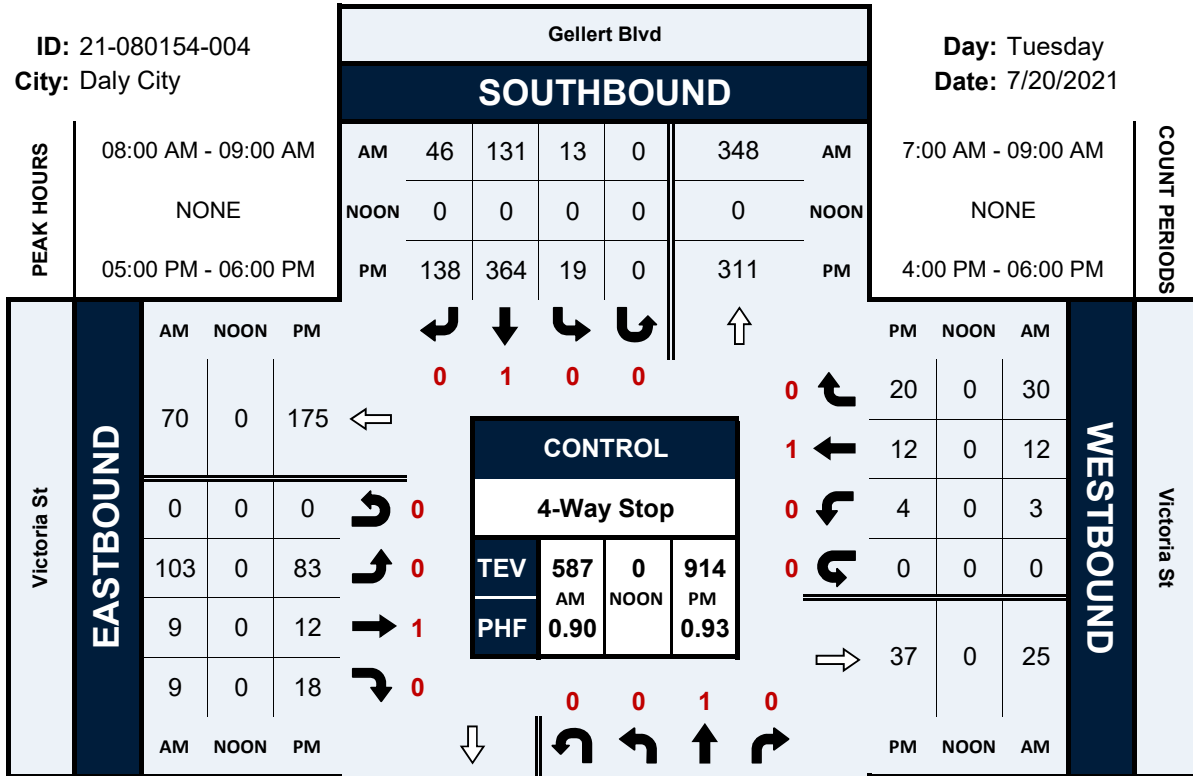
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	3	0	0	6	1	10
4:15 PM	0	0	1	2	0	0	2	1	6
4:30 PM	1	0	2	1	1	1	2	4	12
4:45 PM	0	0	2	0	0	0	1	6	9
5:00 PM	0	0	1	2	0	0	2	4	9
5:15 PM	0	0	1	0	0	0	1	4	6
5:30 PM	0	0	1	0	0	0	0	4	5
5:45 PM	0	0	1	3	0	0	1	1	6
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	1	0	9	11	1	1	15	25	63
	100.00%	0.00%	45.00%	55.00%	50.00%	50.00%	37.50%	62.50%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	1	0	6	3	1	1	6	18	36
PEAK HR FACTOR :	0.250		0.750	0.375	0.250	0.250	0.750	0.750	0.750
		0.250	0.750		0.250		0.857		

Gellert Blvd & Victoria St

Peak Hour Turning Movement Count

ID: 21-080154-004
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Victoria St
City: Daly City
Control: 4-Way Stop

Project ID: 21-080154-004
Date: 7/20/2021

Data - Totals

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Victoria St				Victoria St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	3	44	2	0	2	20	4	0	20	0	4	0	1	1	9	0	110
7:15 AM	2	58	1	0	4	23	5	1	25	0	1	0	0	2	7	0	129
7:30 AM	3	53	1	0	5	21	11	0	30	1	2	0	1	0	9	0	137
7:45 AM	2	55	0	0	4	19	10	0	30	1	3	0	1	3	9	0	137
8:00 AM	3	47	0	0	3	32	12	0	21	0	2	0	0	2	7	0	129
8:15 AM	6	61	0	0	3	19	13	0	25	4	3	0	1	4	10	0	149
8:30 AM	1	62	1	1	5	42	11	0	26	4	1	0	1	4	4	0	163
8:45 AM	2	45	2	0	2	38	10	0	31	1	3	0	1	2	9	0	146
TOTAL VOLUMES :	22	425	7	1	28	214	76	1	208	11	19	0	6	18	64	0	1100
APPROACH %'s :	4.84%	93.41%	1.54%	0.22%	8.78%	67.08%	23.82%	0.31%	87.39%	4.62%	7.98%	0.00%	6.82%	20.45%	72.73%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	12	215	3	1	13	131	46	0	103	9	9	0	3	12	30	0	587
PEAK HR FACTOR :	0.500	0.867	0.375	0.250	0.650	0.780	0.885	0.000	0.831	0.563	0.750	0.000	0.750	0.750	0.750	0.000	0.900
	0.862				0.819				0.864				0.750				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	4	58	0	1	7	81	36	0	19	3	9	0	1	1	8	0	228
4:15 PM	3	65	0	1	9	57	34	0	20	3	4	0	1	2	3	0	202
4:30 PM	6	60	2	0	4	72	35	0	25	3	5	0	0	0	9	0	221
4:45 PM	5	50	1	2	7	78	27	0	19	4	5	0	2	3	2	0	205
5:00 PM	11	43	2	1	6	68	39	0	18	3	8	0	3	2	6	0	210
5:15 PM	4	52	1	1	4	104	30	0	21	4	3	0	0	6	3	0	233
5:30 PM	4	51	1	3	5	96	41	0	27	3	5	0	1	2	6	0	245
5:45 PM	6	62	2	0	4	96	28	0	17	2	2	0	0	2	5	0	226
TOTAL VOLUMES :	43	441	9	9	46	652	270	0	166	25	41	0	8	18	42	0	1770
APPROACH %'s :	8.57%	87.85%	1.79%	1.79%	4.75%	67.36%	27.89%	0.00%	71.55%	10.78%	17.67%	0.00%	11.76%	26.47%	61.76%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	25	208	6	5	19	364	138	0	83	12	18	0	4	12	20	0	914
PEAK HR FACTOR :	0.568	0.839	0.750	0.417	0.792	0.875	0.841	0.000	0.769	0.750	0.563	0.000	0.333	0.500	0.833	0.000	0.933
	0.871				0.917				0.807				0.818				

National Data & Surveying Services Intersection Turning Movement Count

Location: Gellert Blvd & Victoria St
City: Daly City
Control: 4-Way Stop

Project ID: 21-080154-004
Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Gellert Blvd				Gellert Blvd				Victoria St				Victoria St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	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
7:30 AM	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
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%									
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
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	1	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	1	1	0	0	1	0	0	0	1	0	0	4
APPROACH %'s :					0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500

National Data & Surveying Services **Intersection Turning** Movement Count

Location: Gellert Blvd & Victoria St
City: Daly City

Project ID: 21-080154-004
Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Gellert Blvd		Gellert Blvd		Victoria St		Victoria St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	2	0	0	1	0	2	2	0	7
7:15 AM	0	1	0	0	0	0	0	0	1
7:30 AM	0	1	2	0	0	0	0	0	3
7:45 AM	1	0	1	0	2	1	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	1
8:30 AM	2	0	0	0	0	1	1	0	4
8:45 AM	1	0	0	0	0	0	1	0	2
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	6	2	3	1	2	4	5	0	23
	75.00%	25.00%	75.00%	25.00%	33.33%	66.67%	100.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	3	0	0	0	0	1	3	0	7
PEAK HR FACTOR :	0.375					0.250	0.750	0.750	0.438

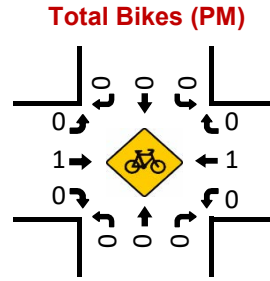
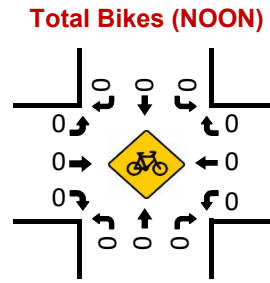
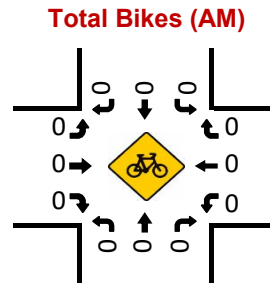
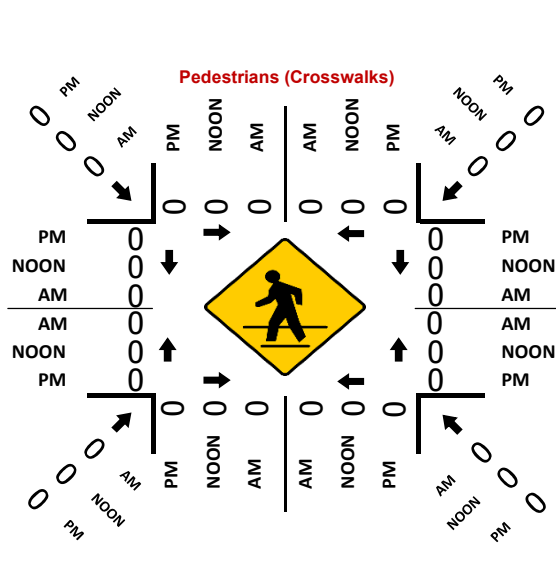
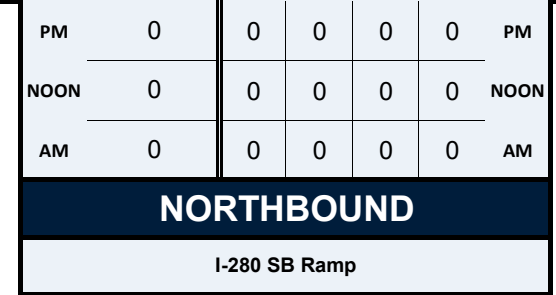
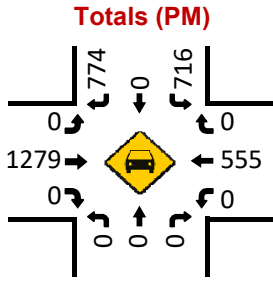
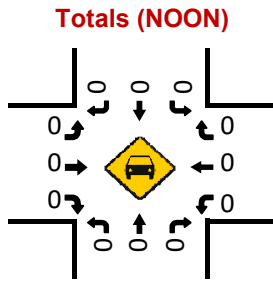
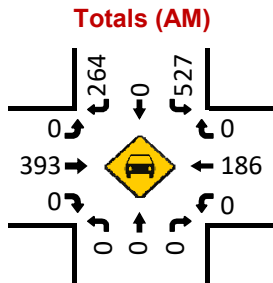
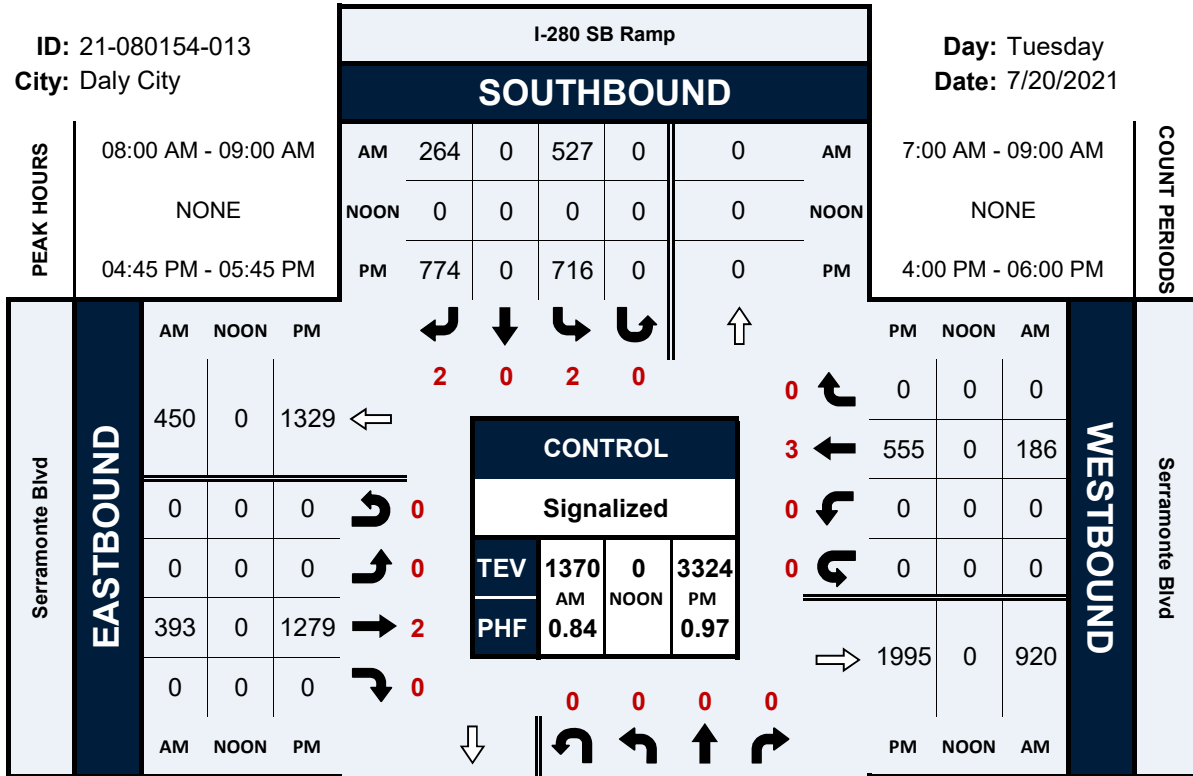
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	3	1	0	6	0	10
4:15 PM	2	0	2	0	0	0	3	0	7
4:30 PM	0	0	0	0	0	1	3	0	4
4:45 PM	0	2	0	2	0	1	0	2	7
5:00 PM	1	0	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	1	1	1	0	0	0	0	0	3
5:45 PM	0	0	0	0	1	1	3	2	7
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	4	3	3	5	2	3	15	5	40
	57.14%	42.86%	37.50%	62.50%	40.00%	60.00%	75.00%	25.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	2	1	1	0	1	1	3	3	12
PEAK HR FACTOR :	0.500	0.250	0.250		0.250	0.250	0.250	0.375	0.429

I-280 SB Ramp & Serramonte Blvd

Peak Hour Turning Movement Count

ID: 21-080154-013
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 SB Ramp & Serramonte Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-013
Date: 7/20/2021

Data - Totals

NS/EW Streets:	I-280 SB Ramp				I-280 SB Ramp				Serramonte Blvd				Serramonte Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	2	0	2	0	0	2	0	0	0	3	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	43	0	22	0	0	74	0	0	0	27	0	0	166
7:15 AM	0	0	0	0	81	0	32	0	0	76	0	0	0	29	0	0	218
7:30 AM	0	0	0	0	103	0	43	0	0	82	0	0	0	37	0	1	266
7:45 AM	0	0	0	0	114	0	71	0	0	92	0	0	0	38	0	0	315
8:00 AM	0	0	0	0	109	0	60	0	0	92	0	0	0	40	0	0	301
8:15 AM	0	0	0	0	135	0	64	0	0	83	0	0	0	43	0	0	325
8:30 AM	0	0	0	0	126	0	59	0	0	102	0	0	0	51	0	0	338
8:45 AM	0	0	0	0	157	0	81	0	0	116	0	0	0	52	0	0	406
TOTAL VOLUMES :	0	0	0	0	868	0	432	0	0	717	0	0	0	317	0	1	2335
APPROACH %'s :					66.77%	0.00%	33.23%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	99.69%	0.00%	0.31%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	527	0	264	0	0	393	0	0	0	186	0	0	1370
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.839	0.000	0.815	0.000	0.000	0.847	0.000	0.000	0.000	0.894	0.000	0.000	0.844
					0.831				0.847				0.894				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	2	0	2	0	0	2	0	0	0	3	0	0	TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	153	0	148	0	0	318	0	0	0	147	0	0	766
4:15 PM	0	0	0	0	160	0	195	0	0	308	0	0	0	137	0	0	800
4:30 PM	0	0	0	0	156	0	191	0	0	309	0	0	0	145	0	0	801
4:45 PM	0	0	0	0	177	0	195	0	0	336	0	0	0	140	0	0	848
5:00 PM	0	0	0	0	172	0	210	0	0	313	0	0	0	120	0	0	815
5:15 PM	0	0	0	0	173	0	170	0	0	320	0	0	0	142	0	0	805
5:30 PM	0	0	0	0	194	0	199	0	0	310	0	0	0	153	0	0	856
5:45 PM	0	0	0	0	158	0	202	0	0	296	0	0	0	121	0	0	777
TOTAL VOLUMES :	0	0	0	0	1343	0	1510	0	0	2510	0	0	0	1105	0	0	6468
APPROACH %'s :					47.07%	0.00%	52.93%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	716	0	774	0	0	1279	0	0	0	555	0	0	3324
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.923	0.000	0.921	0.000	0.000	0.952	0.000	0.000	0.000	0.907	0.000	0.000	0.971
					0.948				0.952				0.907				

National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 SB Ramp & Serramonte Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-013
Date: 7/20/2021

Data - Bikes

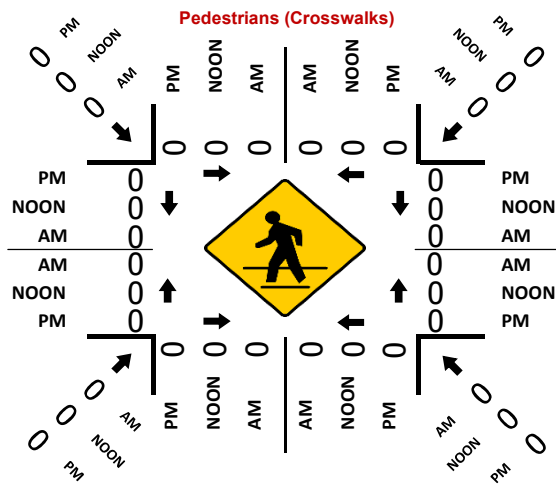
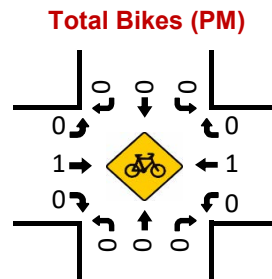
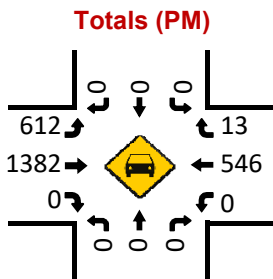
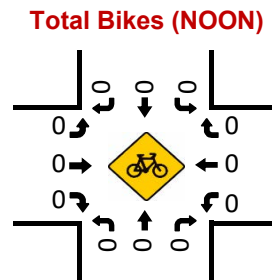
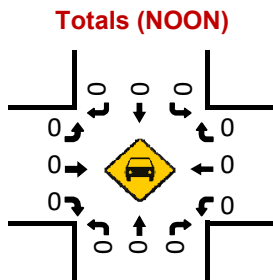
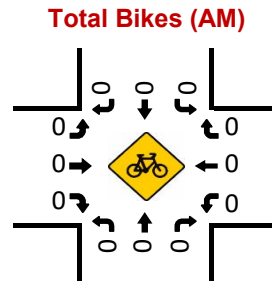
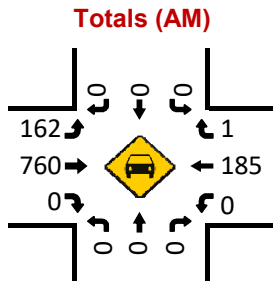
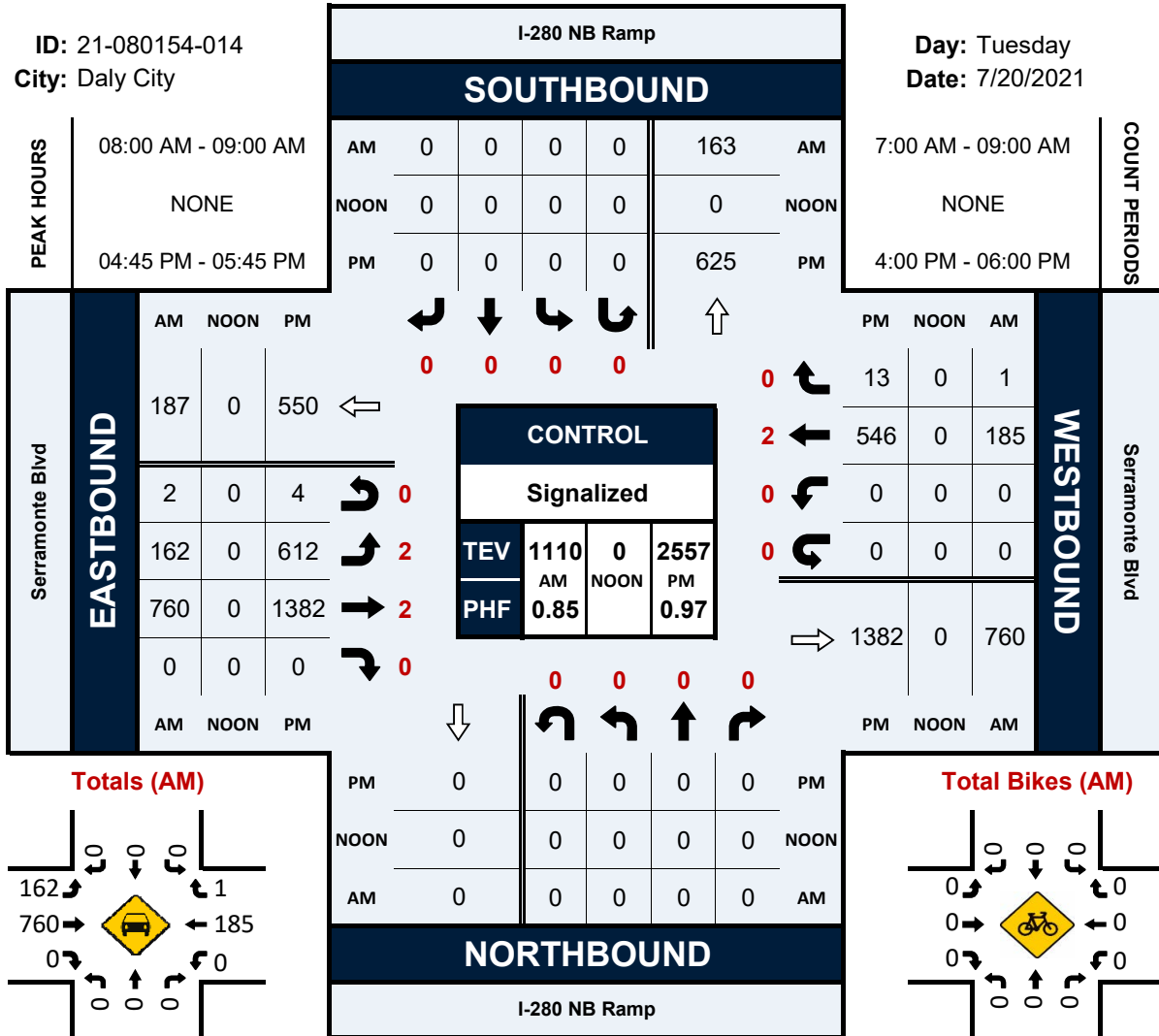
NS/EW Streets:	I-280 SB Ramp				I-280 SB Ramp				Serramonte Blvd				Serramonte Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	2	0	2	0	0	2	0	0	0	3	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
	7:15 AM	0	0	0	0	0	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
	7:45 AM	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
	8:15 AM	0	0	0	0	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	TOTAL	
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	2	0	2	0	0	2	0	0	0	3	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	1	0	0	2
	5:15 PM	0	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	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	TOTAL	
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM																TOTAL	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250	

I-280 NB Ramp & Serramonte Blvd

Peak Hour Turning Movement Count

ID: 21-080154-014
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 NB Ramp & Serramonte Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-014
Date: 7/20/2021

Data - Totals

NS/EW Streets:	I-280 NB Ramp				I-280 NB Ramp				Serramonte Blvd				Serramonte Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	0	0	0	27	98	0	0	0	22	0	0	147
7:15 AM	0	0	0	0	0	0	0	0	34	121	0	0	0	31	0	0	186
7:30 AM	0	0	0	0	0	0	0	0	34	148	0	0	0	36	0	0	218
7:45 AM	0	0	0	0	0	0	0	0	39	168	0	0	0	38	0	0	245
8:00 AM	0	0	0	0	0	0	0	0	41	162	0	1	0	44	1	0	249
8:15 AM	0	0	0	0	0	0	0	0	32	186	0	0	0	40	0	0	258
8:30 AM	0	0	0	0	0	0	0	0	45	179	0	1	0	51	0	0	276
8:45 AM	0	0	0	0	0	0	0	0	44	233	0	0	0	50	0	0	327
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	296	1295	0	2	0	312	1	0	1906
APPROACH %'s :									18.58%	81.29%	0.00%	0.13%	0.00%	99.68%	0.32%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	162	760	0	2	0	185	1	0	1110
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.900	0.815	0.000	0.500	0.000	0.907	0.250	0.000	0.849
										0.834				0.912			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	0	0	0	0	173	292	0	2	0	141	0	0	608
4:15 PM	0	0	0	0	0	0	0	0	146	326	0	0	0	139	1	0	612
4:30 PM	0	0	0	0	0	0	0	0	154	305	0	3	0	144	0	0	606
4:45 PM	0	0	0	0	0	0	0	0	155	360	0	1	0	135	10	0	661
5:00 PM	0	0	0	0	0	0	0	0	137	344	0	1	0	119	2	0	603
5:15 PM	0	0	0	0	0	0	0	0	151	339	0	1	0	153	0	0	644
5:30 PM	0	0	0	0	0	0	0	0	169	339	0	1	0	139	1	0	649
5:45 PM	0	0	0	0	0	0	0	0	140	314	0	0	0	127	2	0	583
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	1225	2619	0	9	0	1097	16	0	4966
APPROACH %'s :									31.79%	67.97%	0.00%	0.23%	0.00%	98.56%	1.44%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	612	1382	0	4	0	546	13	0	2557
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.905	0.960	0.000	1.000	0.000	0.892	0.325	0.000	0.967
										0.968				0.913			

National Data & Surveying Services Intersection Turning Movement Count

Location: I-280 NB Ramp & Serramonte Blvd
City: Daly City
Control: Signalized

Project ID: 21-080154-014
Date: 7/20/2021

Data - Bikes

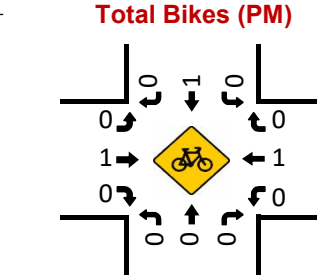
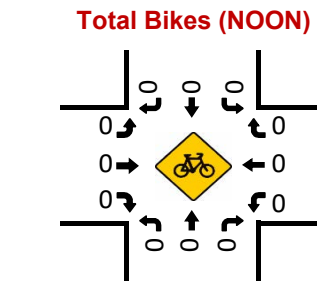
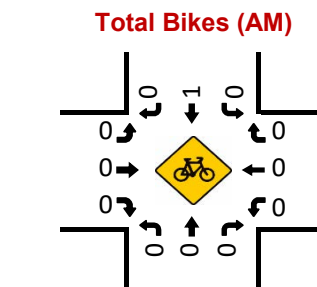
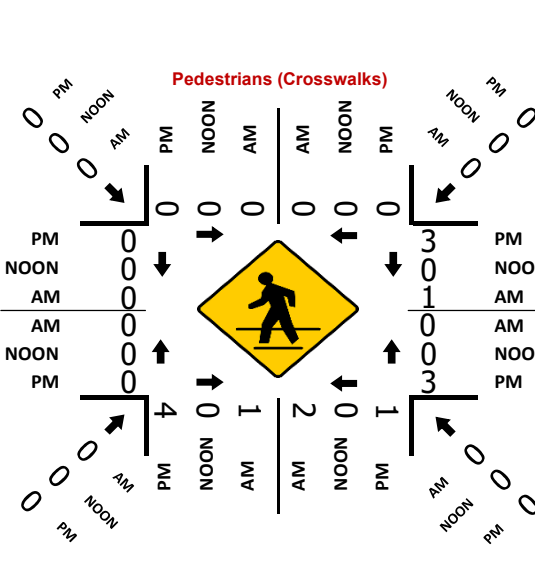
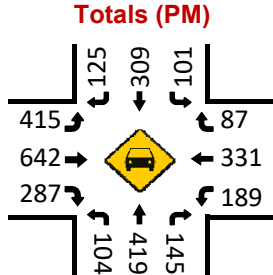
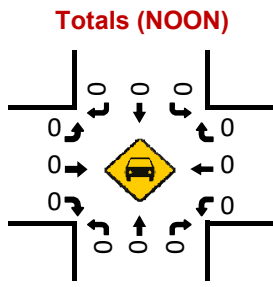
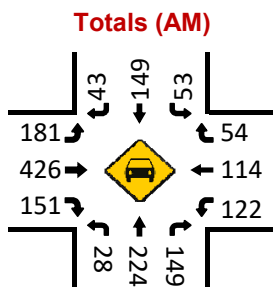
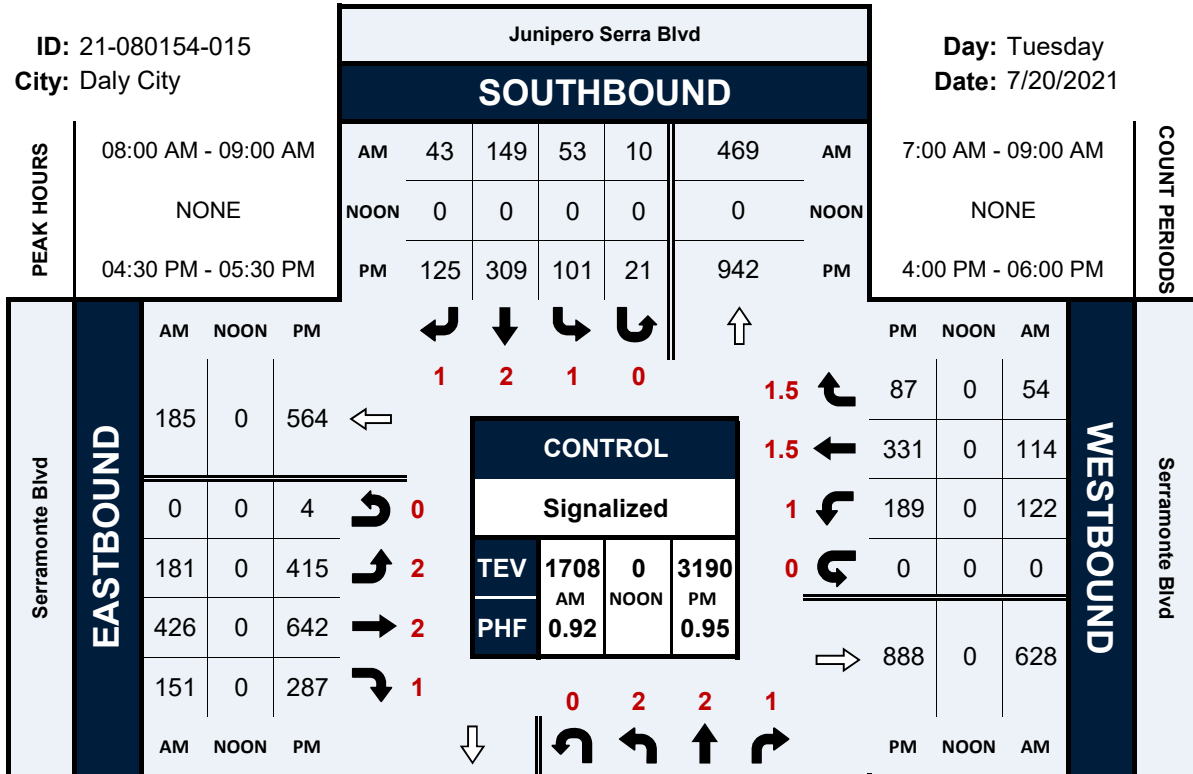
NS/EW Streets:	I-280 NB Ramp				I-280 NB Ramp				Serramonte Blvd				Serramonte Blvd					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	0	0	0	2	2	0	0	0	2	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	7:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
	7:15 AM	0	0	0	0	0	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
	7:45 AM	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
	8:15 AM	0	0	0	0	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
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																0	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	0	0	0	0	0	0	0	2	2	0	0	0	2	0	0	TOTAL	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU		
	4:00 PM	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	1	0	0	2
	5:15 PM	0	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	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3	
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM																2	
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250	

Junipero Serra Blvd & Serramonte Blvd

Peak Hour Turning Movement Count

ID: 21-080154-015
City: Daly City

Day: Tuesday
Date: 7/20/2021



National Data & Surveying Services Intersection Turning Movement Count

Location: Junipero Serra Blvd & Serramonte Blvd
 City: Daly City
 Control: Signalized

Project ID: 21-080154-015
 Date: 7/20/2021

Data - Totals

NS/EW Streets:	Junipero Serra Blvd					Junipero Serra Blvd					Serramonte Blvd					Serramonte Blvd					TOTAL
	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					
AM	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	
7:00 AM	3	33	25	1	54	11	15	8	4	5	33	56	16	0	0	16	10	9	0	30	329
7:15 AM	5	41	41	2	59	8	24	9	3	15	33	68	13	1	0	17	17	4	0	31	391
7:30 AM	4	39	41	1	87	12	17	5	1	8	42	89	22	0	0	20	26	9	0	31	454
7:45 AM	4	83	41	0	80	11	23	11	3	15	45	97	25	0	1	24	24	14	0	40	541
8:00 AM	10	47	36	1	63	12	31	11	4	18	39	86	35	0	0	30	23	17	0	43	506
8:15 AM	5	56	35	1	78	12	37	11	0	18	42	109	39	0	0	30	26	12	0	52	563
8:30 AM	6	56	38	0	49	14	42	11	3	17	45	109	25	0	0	30	33	13	0	64	555
8:45 AM	7	65	40	2	57	15	39	10	3	18	55	122	52	0	0	32	32	12	0	46	607
TOTAL VOLUMES:	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	TOTAL
APPROACH %'s:	3.40%	32.41%	22.92%	0.62%	40.66%	17.79%	42.70%	14.23%	3.93%	21.35%	25.71%	56.66%	17.47%	0.08%	0.08%	24.36%	23.38%	11.02%	0.00%	41.25%	3946
PEAK HR:	08:00 AM - 09:00 AM																				TOTAL
PEAK HR VOL:	28	224	149	4	247	53	149	43	10	71	181	426	151	0	0	122	114	54	0	205	2231
PEAK HR FACTOR:	0.700	0.862	0.931	0.500	0.792	0.883	0.887	0.977	0.625	0.986	0.823	0.873	0.726	0.000	0.000	0.953	0.864	0.794	0.000	0.801	0.919
			0.931			0.937		0.937			0.828		0.828			0.884		0.884			
PM	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	
4:00 PM	19	90	26	3	86	20	39	43	1	42	92	143	63	1	0	40	81	17	0	63	889
4:15 PM	37	103	41	0	99	24	79	29	1	51	112	132	82	0	0	46	71	16	0	102	1025
4:30 PM	20	103	39	3	91	29	82	30	7	48	91	141	60	1	0	59	93	20	0	99	1016
4:45 PM	26	108	36	2	106	30	73	27	4	49	111	190	70	1	0	49	94	18	0	97	1091
5:00 PM	24	88	38	2	83	24	88	36	3	49	103	146	82	1	1	43	57	25	0	90	983
5:15 PM	34	120	32	4	101	18	66	32	7	42	110	165	75	1	0	38	87	24	0	84	1040
5:30 PM	30	99	36	2	117	21	80	39	2	44	99	167	71	0	1	46	70	21	0	67	1012
5:45 PM	22	97	29	6	116	16	74	27	3	42	100	123	83	1	0	45	79	28	0	99	990
TOTAL VOLUMES:	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	TOTAL
APPROACH %'s:	10.01%	38.15%	13.08%	1.04%	37.72%	12.81%	40.89%	18.51%	1.97%	25.83%	31.23%	46.09%	22.37%	0.23%	0.08%	19.39%	33.47%	8.95%	0.00%	38.19%	8046
PEAK HR:	04:30 PM - 05:30 PM																				TOTAL
PEAK HR VOL:	104	419	145	11	381	101	309	125	21	188	415	642	287	4	1	189	331	87	0	370	4130
PEAK HR FACTOR:	0.765	0.873	0.929	0.688	0.899	0.842	0.878	0.868	0.750	0.959	0.935	0.845	0.875	1.000	0.250	0.801	0.880	0.870	0.000	0.934	0.946
			0.911			0.930		0.930			0.907		0.907			0.901		0.901			

Explanation for extra leg movements
Movements entering the extra leg
 NT2 Movements coming from NB on Junipero Serra Blvd entering into the Extra Leg (On Ramp Junipero Serra Fwy)
 SU2 Movements coming from SB on Junipero Serra Blvd entering into the Extra Leg (On Ramp Junipero Serra Fwy)
 EL2 Movements coming from EB on Serramonte Blvd entering into the Extra Leg (On Ramp Junipero Serra Fwy)
 WR2 Movements coming from WB on Serramonte Blvd entering into the Extra Leg (On Ramp Junipero Serra Fwy)



National Data & Surveying Services Intersection Turning Movement Count

Location: Junipero Serra Blvd & Serramonte Blvd
 City: Daly City
 Control: Signalized

Project ID: 21-080154-015
 Date: 7/20/2021

Data - Bikes

NS/EW Streets:	Junipero Serra Blvd					Junipero Serra Blvd					Serramonte Blvd					Serramonte Blvd					TOTAL
	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					
AM	2	2	1	0	0	1	2	1	0	0	2	2	1	0	0	1	1.5	1.5	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	
7:00 AM	0	0	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	1	0	0	0	0	1	0	0	0	
7:30 AM	0	0	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	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	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	0	0	
8:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	TOTAL
APPROACH %'s :	0	0	0	0	0	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	3
PEAK HR :	08:00 AM - 09:00 AM																				
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					TOTAL
	2	2	1	0	0	1	2	1	0	0	2	2	1	0	0	1	1.5	1.5	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	
4:00 PM	0	0	0	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	1	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	0	0	0	
4:45 PM	0	0	0	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	1	0	0	0	0	1	0	0	0	0	1	0	0	0	
5:15 PM	0	0	0	0	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	0	0	0	0	
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
TOTAL VOLUMES :	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	TOTAL
APPROACH %'s :	0	0	0	0	0	0.00%	100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	5
PEAK HR :	04:30 PM - 05:30 PM																				
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250

National Data & Surveying Services Intersection Turning Movement Count

Location: Junipero Serra Blvd & Serramonte Blvd
 City: Daly City

Project ID: 21-080154-015
 Date: 7/20/2021

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Junipero Serra Blvd	Junipero Serra Blvd	Serramonte Blvd	Serramonte Blvd							
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		NORTH LEG 2		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	
	7:00 AM	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	1	0	1	0	0	0	2
	7:30 AM	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	1	2	2	1	0	0	0	6
	8:00 AM	0	0	0	2	0	1	0	0	0	3
	8:15 AM	0	0	1	0	0	0	0	0	0	1
	8:30 AM	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
APPROACH %'s :	0	0	2	5	2	3	0	0	0	0	12
PEAK HR :	08:00 AM - 09:00 AM										TOTAL
PEAK HR VOL :	0	0	1	2	0	1	0	0	0	0	4
PEAK HR FACTOR :			0.250	0.250		0.250					0.333
			0.375		0.250						
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		NORTH LEG 2		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	
	4:00 PM	0	0	0	3	0	3	0	0	0	6
	4:15 PM	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	2	0	2	0	0	0	0	4
	4:45 PM	0	0	2	0	1	0	0	0	0	3
	5:00 PM	0	0	0	1	0	3	0	0	0	4
	5:15 PM	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0
	5:45 PM	1	0	1	0	0	3	0	0	0	5
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
APPROACH %'s :	1	0	5	4	3	9	0	0	0	0	22
PEAK HR :	04:30 PM - 05:30 PM										TOTAL
PEAK HR VOL :	0	0	4	1	3	3	0	0	0	0	11
PEAK HR FACTOR :			0.500	0.250	0.375	0.250					0.688
			0.625		0.500						

**Appendix B – Existing Conditions
Intersection Level of Service
Worksheets**

HCM 6th TWSC
1: Gellert Blvd. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	9	139	752	17	94	344
Future Vol, veh/h	9	139	752	17	94	344
Conflicting Peds, #/hr	5	2	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	190	826	19	104	382

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1424	831	0	0	848
Stage 1	829	-	-	-	-
Stage 2	595	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	150	370	-	-	790
Stage 1	429	-	-	-	-
Stage 2	551	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	129	368	-	-	788
Mov Cap-2 Maneuver	129	-	-	-	-
Stage 1	428	-	-	-	-
Stage 2	476	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.5	0	2.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	129	368	788	-
HCM Lane V/C Ratio	-	-	0.096	0.517	0.133	-
HCM Control Delay (s)	-	-	35.8	24.8	10.3	-
HCM Lane LOS	-	-	E	C	B	-
HCM 95th %tile Q(veh)	-	-	0.3	2.9	0.5	-

HCM 6th TWSC
2: Marbly Ave. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	9	2	137	15	0
Future Vol, veh/h	86	9	2	137	15	0
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	80	80	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	141	15	3	171	22	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	158	0	329
Stage 1	-	-	-	-	151
Stage 2	-	-	-	-	178
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1422	-	665
Stage 1	-	-	-	-	877
Stage 2	-	-	-	-	853
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1419	-	662
Mov Cap-2 Maneuver	-	-	-	-	662
Stage 1	-	-	-	-	875
Stage 2	-	-	-	-	850

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	662	-	-	1419	-
HCM Lane V/C Ratio	0.034	-	-	0.002	-
HCM Control Delay (s)	10.6	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
 3: Serravista Ave. & Victoria St./Serra Ln.

11/09/2022

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	8	0	9	11	23	128	0	4	36	2
Future Vol, veh/h	6	0	8	0	9	11	23	128	0	4	36	2
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	55	55	55	68	68	68	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	18	0	16	20	34	188	0	6	55	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	346	332	59	339	333	194	60	0	0	193	0	0
Stage 1	71	71	-	261	261	-	-	-	-	-	-	-
Stage 2	275	261	-	78	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	608	588	1007	615	587	847	1544	-	-	1380	-	-
Stage 1	939	836	-	744	692	-	-	-	-	-	-	-
Stage 2	731	692	-	931	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	565	566	1005	587	565	842	1541	-	-	1373	-	-
Mov Cap-2 Maneuver	565	566	-	587	565	-	-	-	-	-	-	-
Stage 1	914	830	-	722	671	-	-	-	-	-	-	-
Stage 2	678	671	-	910	829	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	10		10.5		1.1		0.7			
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	754	690	1373	-
HCM Lane V/C Ratio	0.022	-	-	0.041	0.053	0.004	-
HCM Control Delay (s)	7.4	0	-	10	10.5	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-

HCM 6th TWSC
4: Serravista Ave. & Driveway

11/09/2022

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	38	49	139	8	0	0
Future Vol, veh/h	38	49	139	8	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	41	53	151	9	0	0

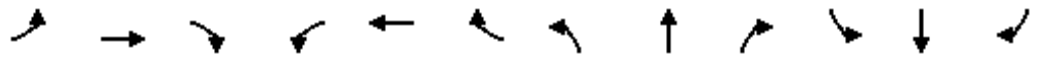
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	160	0	-	0	291
Stage 1	-	-	-	-	156
Stage 2	-	-	-	-	135
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1419	-	-	-	700
Stage 1	-	-	-	-	872
Stage 2	-	-	-	-	891
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1419	-	-	-	679
Mov Cap-2 Maneuver	-	-	-	-	679
Stage 1	-	-	-	-	846
Stage 2	-	-	-	-	891

Approach	EB	WB	SB
HCM Control Delay, s	3.3	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1419	-	-	-	-
HCM Lane V/C Ratio	0.029	-	-	-	-
HCM Control Delay (s)	7.6	0	-	-	0
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-

HCM 6th Signalized Intersection Summary
5: Junipero Serra Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷	↶	↷		↶	↷	↷
Traffic Volume (veh/h)	353	652	71	96	370	417	120	444	124	310	288	271
Future Volume (veh/h)	353	652	71	96	370	417	120	444	124	310	288	271
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	415	767	0	104	402	0	130	483	0	348	324	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	414	1496		251	836		519	1421		439	1421	
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	983	3741	0	322	2090	1585	1056	3647	0	912	3554	1585
Grp Volume(v), veh/h	415	767	0	197	309	0	130	483	0	348	324	0
Grp Sat Flow(s),veh/h/ln	983	1870	0	795	1617	1585	1056	1777	0	912	1777	1585
Q Serve(g_s), s	11.6	7.0	0.0	4.2	6.4	0.0	4.2	4.2	0.0	13.8	2.7	0.0
Cycle Q Clear(g_c), s	18.0	7.0	0.0	11.2	6.4	0.0	6.9	4.2	0.0	18.0	2.7	0.0
Prop In Lane	1.00		0.00	0.53		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	414	1496		440	647		519	1421		439	1421	
V/C Ratio(X)	1.00	0.51		0.45	0.48		0.25	0.34		0.79	0.23	
Avail Cap(c_a), veh/h	414	1496		440	647		519	1421		439	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.9	10.2	0.0	11.3	10.0	0.0	11.2	9.4	0.0	17.0	8.9	0.0
Incr Delay (d2), s/veh	45.0	0.3	0.0	0.7	0.5	0.0	0.3	0.1	0.0	9.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	2.2	0.0	1.4	1.8	0.0	0.8	1.2	0.0	4.2	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	10.5	0.0	12.0	10.6	0.0	11.4	9.5	0.0	26.6	9.0	0.0
LnGrp LOS	F	B		B	B		B	A		C	A	
Approach Vol, veh/h		1182			506			613			672	
Approach Delay, s/veh		29.2			11.1			9.9			18.1	
Approach LOS		C			B			A			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		8.9		20.0		20.0		13.2				
Green Ext Time (p_c), s		2.4		0.0		0.0		1.4				

Intersection Summary

HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	859	323	113	543	49	530	56	470	68	169	128
Future Volume (veh/h)	128	859	323	113	543	49	530	56	470	68	169	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	147	987	0	133	639	51	626	0	203	72	178	17
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	1220		164	1112	89	738	0	328	85	211	254
Arrive On Green	0.10	0.34	0.00	0.09	0.33	0.33	0.21	0.00	0.21	0.16	0.16	0.16
Sat Flow, veh/h	1781	3647	0	1781	3334	266	3563	0	1585	531	1313	1585
Grp Volume(v), veh/h	147	987	0	133	340	350	626	0	203	250	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1823	1781	0	1585	1844	0	1585
Q Serve(g_s), s	7.4	23.1	0.0	6.7	14.4	14.5	15.4	0.0	10.6	12.0	0.0	0.8
Cycle Q Clear(g_c), s	7.4	23.1	0.0	6.7	14.4	14.5	15.4	0.0	10.6	12.0	0.0	0.8
Prop In Lane	1.00		0.00	1.00		0.15	1.00		1.00	0.29		1.00
Lane Grp Cap(c), veh/h	181	1220		164	593	608	738	0	328	296	0	254
V/C Ratio(X)	0.81	0.81		0.81	0.57	0.58	0.85	0.00	0.62	0.84	0.00	0.07
Avail Cap(c_a), veh/h	287	1614		177	698	716	870	0	387	385	0	331
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	27.3	0.0	40.7	25.1	25.1	34.8	0.0	32.9	37.2	0.0	32.5
Incr Delay (d2), s/veh	9.0	2.4	0.0	22.6	0.9	0.9	7.0	0.0	2.2	12.6	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.7	0.0	3.9	5.9	6.1	7.0	0.0	4.2	6.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	29.6	0.0	63.3	26.0	26.0	41.8	0.0	35.2	49.8	0.0	32.7
LnGrp LOS	D	C		E	C	C	D	A	D	D	A	C
Approach Vol, veh/h		1134			823			829				267
Approach Delay, s/veh		32.2			32.0			40.2				48.7
Approach LOS		C			C			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.4	12.9	35.9		19.2	13.8	35.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.3	9.1	41.5		19.1	14.7	35.9				
Max Q Clear Time (g_c+I1), s		17.4	8.7	25.1		14.0	9.4	16.5				
Green Ext Time (p_c), s		1.5	0.0	6.3		0.6	0.2	4.0				

Intersection Summary

HCM 6th Ctrl Delay	35.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: I-280 SB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	737	820	387	822	0	0	0	0	583	2	348
Future Volume (veh/h)	0	737	820	387	822	0	0	0	0	583	2	348
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	801	0	421	893	0				752	0	253
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1173		549	2021	0				968	0	431
Arrive On Green	0.00	0.33	0.00	0.16	0.57	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	801	0	421	893	0				752	0	253
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	11.0	0.0	6.6	8.2	0.0				11.0	0.0	7.8
Cycle Q Clear(g_c), s	0.0	11.0	0.0	6.6	8.2	0.0				11.0	0.0	7.8
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1173		549	2021	0				968	0	431
V/C Ratio(X)	0.00	0.68		0.77	0.44	0.00				0.78	0.00	0.59
Avail Cap(c_a), veh/h	0	2236		668	3206	0				1269	0	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.3	0.0	22.7	7.0	0.0				19.0	0.0	17.8
Incr Delay (d2), s/veh	0.0	0.7	0.0	4.4	0.2	0.0				2.3	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
%ile BackOfQ(50%),veh/ln	0.0	3.9	0.0	2.7	2.2	0.0				4.0	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.1	0.0	27.1	7.2	0.0				21.2	0.0	19.1
LnGrp LOS	A	B		C	A	A				C	A	B
Approach Vol, veh/h		801			1314						1005	
Approach Delay, s/veh		17.1			13.5						20.7	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			13.5	23.1		19.8		36.6				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			10.9	35.5		20.1		50.9				
Max Q Clear Time (g_c+I1), s			8.6	13.0		13.0		10.2				
Green Ext Time (p_c), s			0.4	5.6		2.3		7.4				
Intersection Summary												
HCM 6th Ctrl Delay			16.8									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
8: Driveway & Hickey Blvd.

11/09/2022

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1557	6	88	0	0	0
Future Vol, veh/h	1557	6	88	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1692	7	96	0	0	0

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	850
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	304
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	304
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	0
HCM LOS		A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-

HCM 6th Signalized Intersection Summary
 9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	650	21	331	323	427	51	233	553	348	164	88
Future Volume (veh/h)	90	650	21	331	323	427	51	233	553	348	164	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	107	774	2	368	359	95	59	268	456	405	191	5
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	132	903	397	423	1074	478	557	1171	487	568	298	251
Arrive On Green	0.07	0.25	0.25	0.12	0.30	0.30	0.31	0.31	0.31	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1561	3456	3554	1582	1781	3741	1557	3563	1870	1570
Grp Volume(v), veh/h	107	774	2	368	359	95	59	268	456	405	191	5
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1728	1777	1582	1781	1870	1557	1781	1870	1570
Q Serve(g_s), s	7.1	24.8	0.1	12.5	9.4	5.3	2.8	6.3	33.9	12.9	11.4	0.3
Cycle Q Clear(g_c), s	7.1	24.8	0.1	12.5	9.4	5.3	2.8	6.3	33.9	12.9	11.4	0.3
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	132	903	397	423	1074	478	557	1171	487	568	298	251
V/C Ratio(X)	0.81	0.86	0.01	0.87	0.33	0.20	0.11	0.23	0.94	0.71	0.64	0.02
Avail Cap(c_a), veh/h	187	1043	458	443	1126	501	593	1245	518	1105	580	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	42.4	33.2	51.4	32.3	30.9	29.1	30.3	39.8	47.5	46.9	42.3
Incr Delay (d2), s/veh	16.0	6.5	0.0	16.3	0.2	0.2	0.1	0.1	23.9	1.7	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	11.5	0.0	6.3	4.0	2.1	1.2	2.9	15.9	5.8	5.5	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	48.9	33.2	67.7	32.5	31.1	29.2	30.4	63.7	49.2	49.2	42.3
LnGrp LOS	E	D	C	E	C	C	C	C	E	D	D	D
Approach Vol, veh/h		883			822			783			601	
Approach Delay, s/veh		51.5			48.1			49.7			49.1	
Approach LOS		D			D			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		41.8	19.1	34.8		23.5	13.4	40.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		39.7	15.3	35.0		37.0	12.5	37.8				
Max Q Clear Time (g_c+I1), s		35.9	14.5	26.8		14.9	9.1	11.4				
Green Ext Time (p_c), s		1.4	0.1	3.2		2.6	0.1	2.6				

Intersection Summary

HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Callan Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕		↵	↕		↵	↕	
Traffic Volume (veh/h)	188	635	60	17	363	71	85	293	34	68	133	164
Future Volume (veh/h)	188	635	60	17	363	71	85	293	34	68	133	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	204	690	65	19	403	79	90	312	36	74	145	178
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1063	100	41	607	118	124	408	47	112	184	226
Arrive On Green	0.14	0.32	0.32	0.02	0.20	0.20	0.07	0.25	0.25	0.06	0.24	0.24
Sat Flow, veh/h	1781	3275	308	1781	2964	576	1781	1646	190	1781	763	936
Grp Volume(v), veh/h	204	374	381	19	240	242	90	0	348	74	0	323
Grp Sat Flow(s),veh/h/ln	1781	1777	1806	1781	1777	1763	1781	0	1836	1781	0	1699
Q Serve(g_s), s	5.8	9.5	9.5	0.6	6.5	6.7	2.6	0.0	9.3	2.1	0.0	9.4
Cycle Q Clear(g_c), s	5.8	9.5	9.5	0.6	6.5	6.7	2.6	0.0	9.3	2.1	0.0	9.4
Prop In Lane	1.00		0.17	1.00		0.33	1.00		0.10	1.00		0.55
Lane Grp Cap(c), veh/h	255	577	586	41	364	361	124	0	455	112	0	410
V/C Ratio(X)	0.80	0.65	0.65	0.46	0.66	0.67	0.73	0.00	0.76	0.66	0.00	0.79
Avail Cap(c_a), veh/h	321	759	771	169	607	602	186	0	672	176	0	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	15.2	15.2	25.4	19.3	19.3	24.0	0.0	18.4	24.1	0.0	18.7
Incr Delay (d2), s/veh	10.9	1.2	1.2	7.9	2.1	2.2	7.9	0.0	3.0	6.5	0.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	3.4	3.5	0.3	2.6	2.6	1.3	0.0	3.9	1.0	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	16.5	16.5	33.3	21.3	21.5	31.9	0.0	21.4	30.7	0.0	22.8
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		959			501			438				397
Approach Delay, s/veh		19.9			21.9			23.6				24.2
Approach LOS		B			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	17.6	5.7	21.6	8.2	17.2	12.0	15.3				
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	5.2	19.3	5.0	22.5	5.5	19.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	4.1	11.3	2.6	11.5	4.6	11.4	7.8	8.7				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.5	0.0	1.2	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				21.8								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary

11: Hickey Blvd. & Campus Dr.

11/09/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	207	120	117	688	348	265
Future Volume (veh/h)	207	120	117	688	348	265
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
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	292	169	133	782	387	294
Peak Hour Factor	0.71	0.71	0.88	0.88	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	342	198	171	1729	559	419
Arrive On Green	0.32	0.32	0.10	0.49	0.29	0.29
Sat Flow, veh/h	1076	623	1781	3647	2005	1432
Grp Volume(v), veh/h	462	0	133	782	359	322
Grp Sat Flow(s),veh/h/ln	1702	0	1781	1777	1777	1567
Q Serve(g_s), s	11.7	0.0	3.4	6.7	8.2	8.4
Cycle Q Clear(g_c), s	11.7	0.0	3.4	6.7	8.2	8.4
Prop In Lane	0.63	0.37	1.00			0.91
Lane Grp Cap(c), veh/h	541	0	171	1729	520	458
V/C Ratio(X)	0.85	0.00	0.78	0.45	0.69	0.70
Avail Cap(c_a), veh/h	722	0	290	2434	753	664
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.7	0.0	20.3	7.8	14.4	14.5
Incr Delay (d2), s/veh	7.6	0.0	7.3	0.2	1.7	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	1.6	1.8	2.9	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	0.0	27.6	8.0	16.1	16.4
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	462			915	681	
Approach Delay, s/veh	22.3			10.8	16.3	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		26.9		19.1	8.9	18.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5		19.5	7.5	19.5
Max Q Clear Time (g_c+I1), s		8.7		13.7	5.4	10.4
Green Ext Time (p_c), s		5.5		0.9	0.1	2.9

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	664	455	180	60	188	254	111	910	90	194	453	321	
Future Volume (vph)	664	455	180	60	188	254	111	910	90	194	453	321	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1752	1583		3497	1554	1770	3539	1562	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1752	1583		3497	1554	1770	3539	1562	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	685	469	186	70	219	295	128	1046	103	218	509	361	
RTOR Reduction (vph)	0	0	67	0	0	167	0	0	65	0	0	249	
Lane Group Flow (vph)	569	585	119	0	289	128	128	1046	38	218	509	112	
Confl. Peds. (#/hr)	2						2		1	1			
Confl. Bikes (#/hr)							1						
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4		8	8		5	2		1	6		
Permitted Phases			4			8			2			6	
Actuated Green, G (s)	34.5	34.5	34.5		15.1	15.1	13.0	36.6	36.6	12.5	36.1	36.1	
Effective Green, g (s)	34.5	34.5	34.5		15.1	15.1	13.0	36.6	36.6	12.5	36.1	36.1	
Actuated g/C Ratio	0.30	0.30	0.30		0.13	0.13	0.11	0.31	0.31	0.11	0.31	0.31	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	496	517	467		452	201	197	1109	489	189	1094	489	
v/s Ratio Prot	c0.34	0.33			c0.08		0.07	c0.30		c0.12	0.14		
v/s Ratio Perm			0.08			0.08			0.02			0.07	
v/c Ratio	1.15	1.13	0.25		0.64	0.64	0.65	0.94	0.08	1.15	0.47	0.23	
Uniform Delay, d1	41.1	41.1	31.3		48.2	48.2	49.7	39.0	28.2	52.1	32.5	29.9	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	87.6	81.1	0.3		3.0	6.4	7.2	15.3	0.1	112.9	0.3	0.2	
Delay (s)	128.7	122.2	31.6		51.2	54.6	56.9	54.3	28.2	165.0	32.8	30.2	
Level of Service	F	F	C		D	D	E	D	C	F	C	C	
Approach Delay (s)		112.4			52.9			52.4			58.4		
Approach LOS		F			D			D			E		
Intersection Summary													
HCM 2000 Control Delay			72.8									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.99										
Actuated Cycle Length (s)			116.7									Sum of lost time (s)	18.0
Intersection Capacity Utilization			88.5%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

Intersection

Intersection Delay, s/veh28.1

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	194	17	17	6	23	56	24	404	6	24	246	86
Future Vol, veh/h	194	17	17	6	23	56	24	404	6	24	246	86
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.86	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	20	20	8	31	75	28	470	7	29	300	105
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	18.3	12.7	38.3	26.1
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	85%	7%	7%
Vol Thru, %	93%	7%	27%	69%
Vol Right, %	1%	7%	66%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	434	228	85	356
LT Vol	24	194	6	24
Through Vol	404	17	23	246
RT Vol	6	17	56	86
Lane Flow Rate	505	265	113	434
Geometry Grp	1	1	1	1
Degree of Util (X)	0.874	0.531	0.234	0.753
Departure Headway (Hd)	6.234	7.209	7.429	6.246
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	575	496	486	573
Service Time	4.319	5.307	5.429	4.338
HCM Lane V/C Ratio	0.878	0.534	0.233	0.757
HCM Control Delay	38.3	18.3	12.7	26.1
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	9.9	3.1	0.9	6.6

HCM 6th Signalized Intersection Summary
 14: Gellert Blvd. & Serramonte Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	333	212	395	246	171	226	141	291	149	179	15
Future Volume (veh/h)	66	333	212	395	246	171	226	141	291	149	179	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	69	347	221	459	286	0	260	162	334	184	221	19
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	708	483	586	577		378	378	1173	305	312	27
Arrive On Green	0.06	0.20	0.20	0.17	0.31	0.00	0.11	0.20	0.20	0.09	0.18	0.18
Sat Flow, veh/h	1781	3554	1578	3456	1870	2790	3563	1870	3147	3456	1695	146
Grp Volume(v), veh/h	69	347	221	459	286	0	260	162	334	184	0	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1728	1870	1395	1781	1870	1573	1728	0	1841
Q Serve(g_s), s	2.0	4.6	6.0	6.7	6.6	0.0	3.7	4.0	3.9	2.7	0.0	6.5
Cycle Q Clear(g_c), s	2.0	4.6	6.0	6.7	6.6	0.0	3.7	4.0	3.9	2.7	0.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	107	708	483	586	577		378	378	1173	305	0	339
V/C Ratio(X)	0.64	0.49	0.46	0.78	0.50		0.69	0.43	0.28	0.60	0.00	0.71
Avail Cap(c_a), veh/h	196	1211	706	648	783		398	673	1669	334	0	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	18.8	14.8	21.0	14.9	0.0	22.8	18.4	11.7	23.2	0.0	20.2
Incr Delay (d2), s/veh	6.3	0.5	0.7	5.7	0.7	0.0	4.6	0.8	0.1	2.6	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	2.0	2.9	2.6	0.0	1.7	1.6	1.2	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	19.3	15.5	26.7	15.6	0.0	27.4	19.2	11.8	25.8	0.0	22.9
LnGrp LOS	C	B	B	C	B		C	B	B	C	A	C
Approach Vol, veh/h		637			745			756				424
Approach Delay, s/veh		19.2			22.4			18.7				24.2
Approach LOS		B			C			B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	15.2	13.4	15.0	10.1	14.2	7.7	20.8				
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	5.1	19.0	9.9	18.0	5.9	18.2	5.8	22.1				
Max Q Clear Time (g_c+I1), s	4.7	6.0	8.7	8.0	5.7	8.5	4.0	8.6				
Green Ext Time (p_c), s	0.0	1.9	0.2	2.2	0.0	0.9	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

15: Serramonte Blvd. & I-280 SB Ramps

11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	739	350	0	991	496
Future Volume (veh/h)	0	739	350	0	991	496
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	869	393	0	1194	598
Peak Hour Factor	0.85	0.85	0.89	0.89	0.83	0.83
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1200	1725	0	1558	1258
Arrive On Green	0.00	0.34	0.34	0.00	0.45	0.45
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	869	393	0	1194	598
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	9.1	2.4	0.0	12.3	6.4
Cycle Q Clear(g_c), s	0.0	9.1	2.4	0.0	12.3	6.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1200	1725	0	1558	1258
V/C Ratio(X)	0.00	0.72	0.23	0.00	0.77	0.48
Avail Cap(c_a), veh/h	0	1502	2157	0	1866	1506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	10.1	0.0	9.8	8.2
Incr Delay (d2), s/veh	0.0	1.3	0.1	0.0	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.7	0.0	3.0	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	13.7	10.2	0.0	11.4	8.5
LnGrp LOS	A	B	B	A	B	A
Approach Vol, veh/h		869	393		1792	
Approach Delay, s/veh		13.7	10.2		10.4	
Approach LOS		B	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				18.9	23.7	18.9
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s				11.1	14.3	4.4
Green Ext Time (p_c), s				3.3	4.9	2.2
Intersection Summary						
HCM 6th Ctrl Delay			11.3			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

16: Serramonte Blvd. & I-280 NB Ramps

11/09/2022

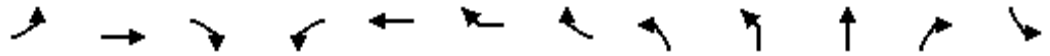


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	308	1429	348	2	0	0
Future Volume (veh/h)	308	1429	348	2	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	371	1722	430	2		
Peak Hour Factor	0.83	0.83	0.81	0.81		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	633	2985	1803	8		
Arrive On Green	0.18	0.84	0.50	0.50		
Sat Flow, veh/h	3456	3647	3721	17		
Grp Volume(v), veh/h	371	1722	211	221		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1867		
Q Serve(g_s), s	2.8	4.2	1.9	1.9		
Cycle Q Clear(g_c), s	2.8	4.2	1.9	1.9		
Prop In Lane	1.00			0.01		
Lane Grp Cap(c), veh/h	633	2985	883	928		
V/C Ratio(X)	0.59	0.58	0.24	0.24		
Avail Cap(c_a), veh/h	1289	4483	1294	1360		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.5	0.7	4.0	4.0		
Incr Delay (d2), s/veh	0.9	0.2	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.1	0.3	0.3		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	0.9	4.2	4.2		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2093	432			
Approach Delay, s/veh		2.7	4.2			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				28.1	9.7	18.5
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	10.5	20.5
Max Q Clear Time (g_c+I1), s				6.2	4.8	3.9
Green Ext Time (p_c), s				17.4	0.7	2.3
Intersection Summary						
HCM 6th Ctrl Delay			3.0			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	340	801	284	229	214	385	102	60	464	421	280	118
Future Volume (vph)	340	801	284	229	214	385	102	60	464	421	280	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	1770	3121	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	1770	3121	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	370	871	309	249	233	418	111	65	504	458	304	128
RTOR Reduction (vph)	0	0	217	0	0	124	0	0	0	0	172	0
Lane Group Flow (vph)	370	871	92	249	496	142	0	0	569	458	132	128
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Effective Green, g (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Actuated g/C Ratio	0.08	0.30	0.30	0.08	0.30	0.30			0.09	0.24	0.24	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	1048	468	147	924	426			240	842	376	147
v/s Ratio Prot	0.11	c0.25		c0.14	0.16					c0.13		0.07
v/s Ratio Perm			0.06			0.10			c0.22		0.08	
v/c Ratio	1.30	0.83	0.20	1.69	0.54	0.33			2.37	0.54	0.35	0.87
Uniform Delay, d1	27.6	19.7	15.8	27.6	17.7	16.5			27.3	20.0	19.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	157.6	5.7	0.2	339.7	0.6	0.5			629.6	0.7	0.6	39.1
Delay (s)	185.2	25.5	16.0	367.3	18.3	17.0			656.9	20.8	19.6	66.3
Level of Service	F	C	B	F	B	B			F	C	B	E
Approach Delay (s)		61.7			103.9					292.4		
Approach LOS		E			F					F		

Intersection Summary

HCM 2000 Control Delay	133.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	280	81	133
Future Volume (vph)	280	81	133
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.97		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3420		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3420		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	304	88	145
RTOR Reduction (vph)	0	0	112
Lane Group Flow (vph)	392	0	33
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	13.8		13.8
Effective Green, g (s)	13.8		13.8
Actuated g/C Ratio	0.23		0.23
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	785		363
v/s Ratio Prot	0.11		
v/s Ratio Perm			0.02
v/c Ratio	0.50		0.09
Uniform Delay, d1	20.1		18.2
Progression Factor	1.00		1.00
Incremental Delay, d2	0.5		0.1
Delay (s)	20.6		18.3
Level of Service	C		B
Approach Delay (s)	28.9		
Approach LOS	C		
Intersection Summary			

HCM 6th TWSC
1: Gellert Blvd. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	8	79	483	14	160	734
Future Vol, veh/h	8	79	483	14	160	734
Conflicting Peds, #/hr	5	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	99	519	15	174	798

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1676	525	0	0	540
Stage 1	525	-	-	-	-
Stage 2	1151	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	105	552	-	-	1028
Stage 1	593	-	-	-	-
Stage 2	301	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	86	549	-	-	1022
Mov Cap-2 Maneuver	86	-	-	-	-
Stage 1	589	-	-	-	-
Stage 2	249	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.6	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	86	549	1022
HCM Lane V/C Ratio	-	-	0.116	0.18	0.17
HCM Control Delay (s)	-	-	52.3	13	9.2
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.7	0.6

HCM 6th TWSC
2: Marbly Ave. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	0	2	84	9	0
Future Vol, veh/h	86	0	2	84	9	0
Conflicting Peds, #/hr	0	1	1	0	4	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	0	3	106	12	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	97	0	213
Stage 1	-	-	-	-	97
Stage 2	-	-	-	-	116
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1496	-	775
Stage 1	-	-	-	-	927
Stage 2	-	-	-	-	909
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1495	-	770
Mov Cap-2 Maneuver	-	-	-	-	770
Stage 1	-	-	-	-	926
Stage 2	-	-	-	-	904

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	770	-	-	1495	-
HCM Lane V/C Ratio	0.016	-	-	0.002	-
HCM Control Delay (s)	9.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	17	0	0	5	7	59	1	11	77	5
Future Vol, veh/h	1	1	17	0	0	5	7	59	1	11	77	5
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	2	2	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	84	84	84	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	21	0	0	10	8	70	1	12	87	6

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	211	208	96	215	211	73	98	0	0	73	0	0
Stage 1	119	119	-	89	89	-	-	-	-	-	-	-
Stage 2	92	89	-	126	122	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	746	689	960	742	686	989	1495	-	-	1527	-	-
Stage 1	885	797	-	918	821	-	-	-	-	-	-	-
Stage 2	915	821	-	878	795	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	727	675	955	715	672	987	1488	-	-	1524	-	-
Mov Cap-2 Maneuver	727	675	-	715	672	-	-	-	-	-	-	-
Stage 1	875	787	-	911	814	-	-	-	-	-	-	-
Stage 2	900	814	-	849	785	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		8.7		0.8		0.9	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1488	-	-	920	987	1524	-	-
HCM Lane V/C Ratio	0.006	-	-	0.026	0.01	0.008	-	-
HCM Control Delay (s)	7.4	0	-	9	8.7	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

HCM 6th TWSC
4: Serravista Ave. & Driveway

11/09/2022

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	17	92	68	0	0	18
Future Vol, veh/h	17	92	68	0	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	100	74	0	0	20

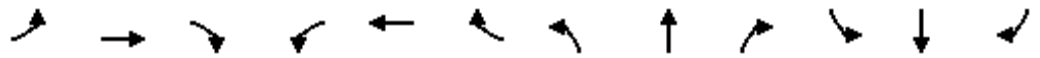
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	74	0	-	0	210 74
Stage 1	-	-	-	-	74 -
Stage 2	-	-	-	-	136 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1526	-	-	-	778 988
Stage 1	-	-	-	-	949 -
Stage 2	-	-	-	-	890 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1526	-	-	-	769 988
Mov Cap-2 Maneuver	-	-	-	-	769 -
Stage 1	-	-	-	-	938 -
Stage 2	-	-	-	-	890 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	988
HCM Lane V/C Ratio	0.012	-	-	-	0.02
HCM Control Delay (s)	7.4	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary
 5: Junipero Serra Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	787	137	136	522	649	123	352	98	284	434	227
Future Volume (veh/h)	294	787	137	136	522	649	123	352	98	284	434	227
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	303	811	0	145	555	0	135	387	0	312	477	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	1598		312	691		422	1454		466	1454	
Arrive On Green	0.43	0.43	0.00	0.43	0.43	0.00	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	854	3741	0	423	1617	1585	917	3647	0	995	3554	1585
Grp Volume(v), veh/h	303	811	0	145	555	0	135	387	0	312	477	0
Grp Sat Flow(s),veh/h/ln	854	1870	0	423	1617	1585	917	1777	0	995	1777	1585
Q Serve(g_s), s	7.0	8.7	0.0	11.1	16.5	0.0	6.5	4.0	0.0	16.6	5.0	0.0
Cycle Q Clear(g_c), s	23.5	8.7	0.0	19.8	16.5	0.0	11.5	4.0	0.0	20.6	5.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	1598		312	691		422	1454		466	1454	
V/C Ratio(X)	1.26	0.51		0.47	0.80		0.32	0.27		0.67	0.33	
Avail Cap(c_a), veh/h	240	1598		312	691		422	1454		466	1454	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.9	11.5	0.0	18.7	13.7	0.0	15.0	10.8	0.0	17.6	11.1	0.0
Incr Delay (d2), s/veh	146.8	0.3	0.0	1.1	6.8	0.0	0.4	0.1	0.0	3.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.7	3.0	0.0	1.6	6.1	0.0	1.2	1.3	0.0	3.6	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	172.7	11.8	0.0	19.8	20.6	0.0	15.5	10.9	0.0	21.3	11.2	0.0
LnGrp LOS	F	B		B	C		B	B		C	B	
Approach Vol, veh/h		1114			700			522			789	
Approach Delay, s/veh		55.6			20.4			12.1			15.2	
Approach LOS		E			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		28.0		27.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		23.5		22.5		23.5				
Max Q Clear Time (g_c+I1), s		13.5		25.5		22.6		21.8				
Green Ext Time (p_c), s		2.1		0.0		0.0		0.9				

Intersection Summary

HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷	↷		↷	↷
Traffic Volume (veh/h)	182	763	217	210	730	53	761	90	422	60	90	100
Future Volume (veh/h)	182	763	217	210	730	53	761	90	422	60	90	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		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	829	0	219	760	51	897	0	144	66	99	6
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	1008		251	996	67	1033	0	460	81	122	173
Arrive On Green	0.13	0.28	0.00	0.14	0.29	0.29	0.29	0.00	0.29	0.11	0.11	0.11
Sat Flow, veh/h	1781	3647	0	1781	3378	227	3563	0	1585	733	1100	1563
Grp Volume(v), veh/h	198	829	0	219	400	411	897	0	144	165	0	6
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1828	1781	0	1585	1834	0	1563
Q Serve(g_s), s	11.2	22.5	0.0	12.4	21.1	21.1	24.6	0.0	7.3	9.1	0.0	0.4
Cycle Q Clear(g_c), s	11.2	22.5	0.0	12.4	21.1	21.1	24.6	0.0	7.3	9.1	0.0	0.4
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	0.40		1.00
Lane Grp Cap(c), veh/h	231	1008		251	524	539	1033	0	460	204	0	173
V/C Ratio(X)	0.86	0.82		0.87	0.76	0.76	0.87	0.00	0.31	0.81	0.00	0.03
Avail Cap(c_a), veh/h	299	1326		287	651	670	1340	0	596	322	0	274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.0	34.5	0.0	43.4	33.1	33.1	34.7	0.0	28.6	44.8	0.0	40.9
Incr Delay (d2), s/veh	17.4	3.3	0.0	22.3	4.2	4.1	5.1	0.0	0.4	8.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	9.9	0.0	6.9	9.4	9.7	10.8	0.0	2.8	4.6	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	37.8	0.0	65.8	37.3	37.2	39.8	0.0	29.0	53.0	0.0	41.0
LnGrp LOS	E	D		E	D	D	D	A	C	D	A	D
Approach Vol, veh/h		1027			1030			1041				171
Approach Delay, s/veh		42.3			43.3			38.3				52.6
Approach LOS		D			D			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.4	19.0	33.8		16.0	17.9	34.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		26.6	14.4	24.5		11.1	13.2	23.1				
Green Ext Time (p_c), s		3.3	0.1	4.8		0.5	0.2	4.3				

Intersection Summary

HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: I-280 SB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	576	677	361	1280	0	0	0	0	552	5	408
Future Volume (veh/h)	0	576	677	361	1280	0	0	0	0	552	5	408
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	670	0	376	1333	0				748	0	300
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1056		516	1905	0				1016	0	452
Arrive On Green	0.00	0.30	0.00	0.15	0.54	0.00				0.29	0.00	0.29
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	670	0	376	1333	0				748	0	300
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	8.2	0.0	5.2	14.0	0.0				9.6	0.0	8.4
Cycle Q Clear(g_c), s	0.0	8.2	0.0	5.2	14.0	0.0				9.6	0.0	8.4
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1056		516	1905	0				1016	0	452
V/C Ratio(X)	0.00	0.63		0.73	0.70	0.00				0.74	0.00	0.66
Avail Cap(c_a), veh/h	0	1871		652	2860	0				1451	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.3	0.0	20.4	8.7	0.0				16.3	0.0	15.9
Incr Delay (d2), s/veh	0.0	0.6	0.0	3.1	0.5	0.0				1.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	0.0	2.1	3.7	0.0				3.2	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.9	0.0	23.5	9.1	0.0				17.5	0.0	17.5
LnGrp LOS	A	B		C	A	A				B	A	B
Approach Vol, veh/h		670			1709						1048	
Approach Delay, s/veh		15.9			12.3						17.5	
Approach LOS		B			B						B	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			12.0	19.5		18.8		31.5				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			9.5	26.5		20.5		40.5				
Max Q Clear Time (g_c+I1), s			7.2	10.2		11.6		16.0				
Green Ext Time (p_c), s			0.3	4.0		2.8		11.0				
Intersection Summary												
HCM 6th Ctrl Delay			14.6									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
8: Driveway & Hickey Blvd.

11/09/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖			↗
Traffic Vol, veh/h	1214	0	35	0	0	39
Future Vol, veh/h	1214	0	35	0	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1320	0	38	0	0	42

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	660
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	406
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	406
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	14.9
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	406	-	-
HCM Lane V/C Ratio	0.104	-	-
HCM Control Delay (s)	14.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

HCM 6th Signalized Intersection Summary
 9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘↗	↑↑	↗	↘	↕↑	↗	↘	↕↑	↗
Traffic Volume (veh/h)	119	391	25	556	422	675	71	267	278	553	314	196
Future Volume (veh/h)	119	391	25	556	422	675	71	267	278	553	314	196
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		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	495	0	611	464	343	78	293	37	614	349	29
Peak Hour Factor	0.79	0.79	0.79	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	681	304	707	1038	457	250	526	215	803	422	349
Arrive On Green	0.10	0.19	0.00	0.20	0.29	0.29	0.14	0.14	0.14	0.23	0.23	0.23
Sat Flow, veh/h	1781	3554	1585	3456	3554	1566	1781	3741	1528	3563	1870	1549
Grp Volume(v), veh/h	151	495	0	611	464	343	78	293	37	614	349	29
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1566	1781	1870	1528	1781	1870	1549
Q Serve(g_s), s	6.3	9.9	0.0	12.9	8.1	15.1	3.0	5.5	1.6	12.2	13.5	1.1
Cycle Q Clear(g_c), s	6.3	9.9	0.0	12.9	8.1	15.1	3.0	5.5	1.6	12.2	13.5	1.1
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	186	681	304	707	1038	457	250	526	215	803	422	349
V/C Ratio(X)	0.81	0.73	0.00	0.86	0.45	0.75	0.31	0.56	0.17	0.76	0.83	0.08
Avail Cap(c_a), veh/h	186	844	377	775	1271	560	435	913	373	870	457	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	28.8	0.0	29.1	21.8	24.3	29.3	30.4	28.7	27.5	27.9	23.2
Incr Delay (d2), s/veh	23.3	2.4	0.0	9.4	0.3	4.5	0.7	0.9	0.4	3.8	11.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.2	0.0	6.0	3.2	5.8	1.3	2.5	0.6	5.4	7.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.6	31.2	0.0	38.5	22.1	28.8	30.0	31.3	29.1	31.2	39.2	23.3
LnGrp LOS	E	C	A	D	C	C	C	C	C	C	D	C
Approach Vol, veh/h		646			1418			408			992	
Approach Delay, s/veh		37.1			30.8			30.8			33.8	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.2	20.0	19.0		21.6	12.4	26.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.0	18.0		18.5	7.9	27.1				
Max Q Clear Time (g_c+I1), s		7.5	14.9	11.9		15.5	8.3	17.1				
Green Ext Time (p_c), s		1.7	0.6	1.6		1.4	0.0	3.1				

Intersection Summary

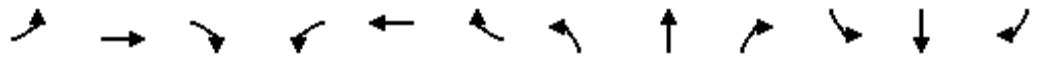
HCM 6th Ctrl Delay	32.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Callan Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	144	424	100	68	519	129	52	182	34	41	207	192
Future Volume (veh/h)	144	424	100	68	519	129	52	182	34	41	207	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	164	482	114	75	570	142	61	214	40	44	220	204
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.85	0.85	0.85	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	886	208	105	715	178	94	451	84	76	253	234
Arrive On Green	0.12	0.31	0.31	0.06	0.25	0.25	0.05	0.30	0.30	0.04	0.29	0.29
Sat Flow, veh/h	1781	2849	670	1781	2813	699	1781	1528	286	1781	885	820
Grp Volume(v), veh/h	164	299	297	75	359	353	61	0	254	44	0	424
Grp Sat Flow(s),veh/h/ln	1781	1777	1742	1781	1777	1735	1781	0	1813	1781	0	1705
Q Serve(g_s), s	5.5	8.6	8.7	2.5	11.6	11.7	2.1	0.0	7.1	1.5	0.0	14.6
Cycle Q Clear(g_c), s	5.5	8.6	8.7	2.5	11.6	11.7	2.1	0.0	7.1	1.5	0.0	14.6
Prop In Lane	1.00		0.38	1.00		0.40	1.00		0.16	1.00		0.48
Lane Grp Cap(c), veh/h	206	553	542	105	452	441	94	0	535	76	0	487
V/C Ratio(X)	0.80	0.54	0.55	0.72	0.80	0.80	0.65	0.00	0.47	0.58	0.00	0.87
Avail Cap(c_a), veh/h	246	557	546	208	519	507	145	0	600	147	0	567
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.5	17.6	17.6	28.5	21.5	21.5	28.6	0.0	17.8	28.9	0.0	20.9
Incr Delay (d2), s/veh	14.3	1.1	1.1	8.8	7.4	7.8	7.4	0.0	0.7	6.7	0.0	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.3	3.3	1.3	5.3	5.2	1.0	0.0	2.8	0.8	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	18.6	18.8	37.3	28.9	29.3	36.0	0.0	18.5	35.6	0.0	33.3
LnGrp LOS	D	B	B	D	C	C	D	A	B	D	A	C
Approach Vol, veh/h		760			787			315				468
Approach Delay, s/veh		23.5			29.9			21.9				33.5
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	22.7	8.1	23.7	7.7	22.1	11.6	20.2				
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	5.1	20.4	7.2	19.3	5.0	20.5	8.5	18.0				
Max Q Clear Time (g_c+I1), s	3.5	9.1	4.5	10.7	4.1	16.6	7.5	13.7				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.3	0.0	1.0	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay				27.4								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary

11: Hickey Blvd. & Campus Dr.

11/09/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	150	86	63	510	632	135
Future Volume (veh/h)	150	86	63	510	632	135
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.99
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	190	109	68	548	695	148
Peak Hour Factor	0.79	0.79	0.93	0.93	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	249	143	119	1905	1025	218
Arrive On Green	0.23	0.23	0.07	0.54	0.35	0.35
Sat Flow, veh/h	1077	618	1781	3647	3002	619
Grp Volume(v), veh/h	300	0	68	548	424	419
Grp Sat Flow(s),veh/h/ln	1701	0	1781	1777	1777	1751
Q Serve(g_s), s	6.4	0.0	1.4	3.3	7.8	7.9
Cycle Q Clear(g_c), s	6.4	0.0	1.4	3.3	7.8	7.9
Prop In Lane	0.63	0.36	1.00			0.35
Lane Grp Cap(c), veh/h	393	0	119	1905	626	617
V/C Ratio(X)	0.76	0.00	0.57	0.29	0.68	0.68
Avail Cap(c_a), veh/h	792	0	235	2575	846	834
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	13.9	0.0	17.5	4.9	10.6	10.6
Incr Delay (d2), s/veh	3.1	0.0	4.2	0.1	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.6	0.6	2.4	2.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.0	0.0	21.7	5.0	11.9	12.0
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	300			616	843	
Approach Delay, s/veh	17.0			6.8	12.0	
Approach LOS	B			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.2		13.4	7.1	18.1
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.1	18.4
Max Q Clear Time (g_c+I1), s		5.3		8.4	3.4	9.9
Green Ext Time (p_c), s		3.6		0.7	0.0	3.4

Intersection Summary

HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	356	284	142	111	340	256	179	573	85	204	623	653
Future Volume (vph)	356	284	142	111	340	256	179	573	85	204	623	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1758	1583		3496	1549	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.77	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1758	1583		2711	1549	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	387	309	154	117	358	269	188	603	89	215	656	687
RTOR Reduction (vph)	0	0	100	0	0	209	0	0	69	0	0	370
Lane Group Flow (vph)	341	355	54	0	475	60	188	603	20	215	656	317
Confl. Peds. (#/hr)	7					7						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	18.6	18.6	18.6		19.4	19.4	10.1	19.2	19.2	11.9	21.0	21.0
Effective Green, g (s)	18.6	18.6	18.6		19.4	19.4	10.1	19.2	19.2	11.9	21.0	21.0
Actuated g/C Ratio	0.21	0.21	0.21		0.22	0.22	0.12	0.22	0.22	0.14	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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
Lane Grp Cap (vph)	358	375	338		603	345	205	780	348	241	853	381
v/s Ratio Prot	c0.20	0.20					0.11	0.17		c0.12	0.19	
v/s Ratio Perm			0.03		c0.18	0.04			0.01			c0.20
v/c Ratio	0.95	0.95	0.16		0.79	0.17	0.92	0.77	0.06	0.89	0.77	0.83
Uniform Delay, d1	33.8	33.8	27.9		31.9	27.4	38.1	31.9	26.8	37.0	30.8	31.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.1	32.6	0.2		6.7	0.2	40.1	4.8	0.1	31.0	4.2	14.4
Delay (s)	68.9	66.4	28.1		38.7	27.6	78.2	36.7	26.9	68.0	35.0	45.8
Level of Service	E	E	C		D	C	E	D	C	E	D	D
Approach Delay (s)		60.5			34.7			44.6			44.3	
Approach LOS		E			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			46.0		HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			87.1		Sum of lost time (s)				18.0			
Intersection Capacity Utilization			74.7%		ICU Level of Service				D			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 28.9

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	98	14	21	5	14	24	35	245	7	22	430	163
Future Vol, veh/h	98	14	21	5	14	24	35	245	7	22	430	163
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.87	0.87	0.87	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	17	26	6	17	29	40	282	8	24	467	177
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.5	10.4	14.5	41.4
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	74%	12%	4%
Vol Thru, %	85%	11%	33%	70%
Vol Right, %	2%	16%	56%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	287	133	43	615
LT Vol	35	98	5	22
Through Vol	245	14	14	430
RT Vol	7	21	24	163
Lane Flow Rate	330	164	52	668
Geometry Grp	1	1	1	1
Degree of Util (X)	0.513	0.301	0.098	0.932
Departure Headway (Hd)	5.602	6.597	6.695	5.019
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	640	542	539	722
Service Time	3.671	4.679	4.695	3.073
HCM Lane V/C Ratio	0.516	0.303	0.096	0.925
HCM Control Delay	14.5	12.5	10.4	41.4
HCM Lane LOS	B	B	B	E
HCM 95th-tile Q	2.9	1.3	0.3	13

HCM 6th Signalized Intersection Summary
 14: Gellert Blvd. & Serramonte Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	411	289	553	366	575	354	301	592	502	309	65
Future Volume (veh/h)	64	411	289	553	366	575	354	301	592	502	309	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	472	332	564	373	0	385	327	643	534	329	69
Peak Hour Factor	0.87	0.87	0.87	0.98	0.98	0.98	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	95	739	534	650	641		470	395	1227	622	387	81
Arrive On Green	0.05	0.21	0.21	0.19	0.34	0.00	0.13	0.21	0.21	0.18	0.26	0.26
Sat Flow, veh/h	1781	3554	1564	3456	1870	2790	3563	1870	2990	3456	1491	313
Grp Volume(v), veh/h	74	472	332	564	373	0	385	327	643	534	0	398
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1728	1870	1395	1781	1870	1495	1728	0	1804
Q Serve(g_s), s	3.5	10.3	15.0	13.4	13.9	0.0	8.9	14.1	13.9	12.7	0.0	17.7
Cycle Q Clear(g_c), s	3.5	10.3	15.0	13.4	13.9	0.0	8.9	14.1	13.9	12.7	0.0	17.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	95	739	534	650	641		470	395	1227	622	0	468
V/C Ratio(X)	0.78	0.64	0.62	0.87	0.58		0.82	0.83	0.52	0.86	0.00	0.85
Avail Cap(c_a), veh/h	139	756	542	715	641		526	429	1282	698	0	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.5	30.6	23.4	33.3	22.8	0.0	35.7	31.9	19.5	33.6	0.0	29.8
Incr Delay (d2), s/veh	15.3	1.7	2.1	10.3	1.3	0.0	9.1	12.0	0.4	9.6	0.0	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.5	5.6	6.4	6.1	0.0	4.4	7.5	4.7	6.0	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.9	32.3	25.5	43.6	24.2	0.0	44.8	43.9	19.8	43.2	0.0	41.9
LnGrp LOS	D	C	C	D	C		D	D	B	D	A	D
Approach Vol, veh/h		878			937			1355			932	
Approach Delay, s/veh		31.7			35.9			32.7			42.7	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.7	22.4	20.4	22.1	15.7	26.4	9.0	33.5				
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	17.1	19.4	17.5	18.0	12.5	24.0	6.6	28.9				
Max Q Clear Time (g_c+I1), s	14.7	16.1	15.4	17.0	10.9	19.7	5.5	15.9				
Green Ext Time (p_c), s	0.6	1.6	0.5	0.5	0.3	0.9	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

15: Serramonte Blvd. & I-280 SB Ramps

11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1509	655	0	845	913
Future Volume (veh/h)	0	1509	655	0	845	913
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1588	720	0	889	961
Peak Hour Factor	0.95	0.95	0.91	0.91	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1688	2426	0	1292	1043
Arrive On Green	0.00	0.48	0.48	0.00	0.37	0.37
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1588	720	0	889	961
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	25.3	5.1	0.0	12.9	19.6
Cycle Q Clear(g_c), s	0.0	25.3	5.1	0.0	12.9	19.6
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1688	2426	0	1292	1043
V/C Ratio(X)	0.00	0.94	0.30	0.00	0.69	0.92
Avail Cap(c_a), veh/h	0	1699	2440	0	1304	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.8	9.6	0.0	15.7	17.8
Incr Delay (d2), s/veh	0.0	10.8	0.1	0.0	1.5	12.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.8	1.6	0.0	4.3	6.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	25.6	9.6	0.0	17.3	30.6
LnGrp LOS	A	C	A	A	B	C
Approach Vol, veh/h		1588	720		1850	
Approach Delay, s/veh		25.6	9.6		24.2	
Approach LOS		C	A		C	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				32.8	26.8	32.8
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				28.5	22.5	28.5
Max Q Clear Time (g_c+I1), s				27.3	21.6	7.1
Green Ext Time (p_c), s				1.0	0.7	5.1
Intersection Summary						
HCM 6th Ctrl Delay			22.2			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

16: Serramonte Blvd. & I-280 NB Ramps

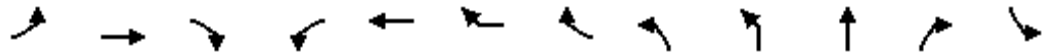
11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖↖	↑↑	↗↗			
Traffic Volume (veh/h)	727	1631	644	15	0	0
Future Volume (veh/h)	727	1631	644	15	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	749	1681	708	16		
Peak Hour Factor	0.97	0.97	0.91	0.91		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1088	2977	1281	29		
Arrive On Green	0.31	0.84	0.36	0.36		
Sat Flow, veh/h	3456	3647	3644	80		
Grp Volume(v), veh/h	749	1681	354	370		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1854		
Q Serve(g_s), s	5.3	4.0	4.4	4.4		
Cycle Q Clear(g_c), s	5.3	4.0	4.4	4.4		
Prop In Lane	1.00			0.04		
Lane Grp Cap(c), veh/h	1088	2977	641	669		
V/C Ratio(X)	0.69	0.56	0.55	0.55		
Avail Cap(c_a), veh/h	1557	4548	1185	1236		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.3	0.7	7.1	7.1		
Incr Delay (d2), s/veh	0.8	0.2	0.7	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.1	1.0	1.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	0.9	7.8	7.8		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		2430	724			
Approach Delay, s/veh		3.4	7.8			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				27.7	13.2	14.5
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	12.5	18.5
Max Q Clear Time (g_c+I1), s				6.0	7.3	6.4
Green Ext Time (p_c), s				17.0	1.5	3.6
Intersection Summary						
HCM 6th Ctrl Delay			4.4			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL	
Lane Configurations													
Traffic Volume (vph)	494	758	339	223	391	437	103	136	450	494	171	144	
Future Volume (vph)	494	758	339	223	391	437	103	136	450	494	171	144	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94	0.85			1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95	
Satd. Flow (prot)	3433	3539	1555	1770	3176	1421			3433	3539	1555	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95	
Satd. Flow (perm)	3433	3539	1555	1770	3176	1421			2628	3539	1555	1770	
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93	
Adj. Flow (vph)	543	833	373	248	434	486	114	149	495	543	188	155	
RTOR Reduction (vph)	0	0	222	0	0	126	0	0	0	0	139	0	
Lane Group Flow (vph)	543	833	151	248	711	197	0	0	644	543	49	155	
Confl. Peds. (#/hr)			5	5							6	6	
Confl. Bikes (#/hr)			1			1	1						
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot	
Protected Phases	7	4		3	8				5	2		1	
Permitted Phases			4			8		5			2		
Actuated Green, G (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.1	16.1	5.0	
Effective Green, g (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.1	16.1	5.0	
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.26	0.26	0.08	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	278	1009	443	143	905	405			234	923	405	143	
v/s Ratio Prot	c0.16	c0.24		0.14	0.22					0.15		0.09	
v/s Ratio Perm			0.10			0.14			c0.25		0.03		
v/c Ratio	1.95	0.83	0.34	1.73	0.79	0.49			2.75	0.59	0.12	1.08	
Uniform Delay, d1	28.4	20.6	17.5	28.4	20.3	18.3			28.1	19.9	17.4	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	441.8	5.6	0.5	357.9	4.5	0.9			800.4	1.0	0.1	99.5	
Delay (s)	470.2	26.2	17.9	386.2	24.9	19.2			828.5	20.9	17.5	127.8	
Level of Service	F	C	B	F	C	B			F	C	B	F	
Approach Delay (s)		162.3			93.3					398.7			
Approach LOS		F			F					F			
Intersection Summary													
HCM 2000 Control Delay			184.7									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.13										
Actuated Cycle Length (s)			61.7									Sum of lost time (s)	18.0
Intersection Capacity Utilization			82.9%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	365	148	222
Future Volume (vph)	365	148	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3373		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3373		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	392	159	239
RTOR Reduction (vph)	0	0	179
Lane Group Flow (vph)	551	0	60
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.6		15.6
Effective Green, g (s)	15.6		15.6
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	852		395
v/s Ratio Prot	c0.16		
v/s Ratio Perm			0.04
v/c Ratio	0.65		0.15
Uniform Delay, d1	20.6		17.9
Progression Factor	1.00		1.00
Incremental Delay, d2	1.7		0.2
Delay (s)	22.3		18.1
Level of Service	C		B
Approach Delay (s)	38.5		
Approach LOS	D		
Intersection Summary			

**Appendix C – Existing + Project Alternative 1 Conditions
Intersection Level of Service Worksheets**

Intersection						
Int Delay, s/veh	6.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	9	176	752	17	199	344
Future Vol, veh/h	9	176	752	17	199	344
Conflicting Peds, #/hr	5	2	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	241	826	19	221	382

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1658	831	0	0	848	0
Stage 1	829	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	107	370	-	-	790	-
Stage 1	429	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	76	368	-	-	788	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	308	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	33	0	4.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	76	368	788
HCM Lane V/C Ratio	-	-	0.162	0.655	0.281
HCM Control Delay (s)	-	-	61.3	31.6	11.3
HCM Lane LOS	-	-	F	D	B
HCM 95th %tile Q(veh)	-	-	0.5	4.5	1.2

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	222	9	4	161	15	0
Future Vol, veh/h	222	9	4	161	15	0
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	80	80	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	364	15	5	201	22	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	381	0	586 374
Stage 1	-	-	-	-	374 -
Stage 2	-	-	-	-	212 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1177	-	473 672
Stage 1	-	-	-	-	696 -
Stage 2	-	-	-	-	823 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1175	-	469 671
Mov Cap-2 Maneuver	-	-	-	-	469 -
Stage 1	-	-	-	-	695 -
Stage 2	-	-	-	-	818 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	-	-	1175	-
HCM Lane V/C Ratio	0.048	-	-	0.004	-
HCM Control Delay (s)	13.1	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	11	2	6	9	8	23	128	8	4	36	7
Future Vol, veh/h	25	11	2	6	9	8	23	128	8	4	36	7
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	55	55	55	68	68	68	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	56	24	4	11	16	15	34	188	12	6	55	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	354	348	63	354	347	200	68	0	0	205	0	0
Stage 1	75	75	-	267	267	-	-	-	-	-	-	-
Stage 2	279	273	-	87	80	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	601	576	1002	601	576	841	1533	-	-	1366	-	-
Stage 1	934	833	-	738	688	-	-	-	-	-	-	-
Stage 2	728	684	-	921	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	563	555	1000	563	555	836	1530	-	-	1359	-	-
Mov Cap-2 Maneuver	563	555	-	563	555	-	-	-	-	-	-	-
Stage 1	909	827	-	716	667	-	-	-	-	-	-	-
Stage 2	680	663	-	885	822	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.4		11.1		1.1		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1530	-	-	574	631	1359	-
HCM Lane V/C Ratio	0.022	-	-	0.147	0.066	0.005	-
HCM Control Delay (s)	7.4	0	-	12.4	11.1	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.2	0	-

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	133	49	139	20	6	42
Future Vol, veh/h	133	49	139	20	6	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	53	151	22	7	46

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	173	0	0	505	162
Stage 1	-	-	-	162	-
Stage 2	-	-	-	343	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1404	-	-	527	883
Stage 1	-	-	-	867	-
Stage 2	-	-	-	719	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1404	-	-	471	883
Mov Cap-2 Maneuver	-	-	-	471	-
Stage 1	-	-	-	775	-
Stage 2	-	-	-	719	-

Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1404	-	-	-	796
HCM Lane V/C Ratio	0.103	-	-	-	0.066
HCM Control Delay (s)	7.9	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.2

HCM 6th Signalized Intersection Summary
5: Junipero Serra Blvd. & Hickey Blvd.

Timing Plan: AM Peak

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷	↶	↷		↶	↷	↷
Traffic Volume (veh/h)	353	662	81	96	401	417	151	444	124	310	288	271
Future Volume (veh/h)	353	662	81	96	401	417	151	444	124	310	288	271
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	415	779	0	104	436	0	164	483	0	348	324	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	1496		241	857		519	1421		439	1421	
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	953	3741	0	304	2144	1585	1056	3647	0	912	3554	1585
Grp Volume(v), veh/h	415	779	0	211	329	0	164	483	0	348	324	0
Grp Sat Flow(s),veh/h/ln	953	1870	0	830	1617	1585	1056	1777	0	912	1777	1585
Q Serve(g_s), s	11.1	7.1	0.0	4.2	6.9	0.0	5.5	4.2	0.0	13.8	2.7	0.0
Cycle Q Clear(g_c), s	18.0	7.1	0.0	11.3	6.9	0.0	8.2	4.2	0.0	18.0	2.7	0.0
Prop In Lane	1.00		0.00	0.49		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	395	1496		452	647		519	1421		439	1421	
V/C Ratio(X)	1.05	0.52		0.47	0.51		0.32	0.34		0.79	0.23	
Avail Cap(c_a), veh/h	395	1496		452	647		519	1421		439	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.2	10.2	0.0	11.2	10.2	0.0	11.6	9.4	0.0	17.0	8.9	0.0
Incr Delay (d2), s/veh	59.1	0.3	0.0	0.8	0.7	0.0	0.3	0.1	0.0	9.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	2.2	0.0	1.1	1.9	0.0	1.0	1.2	0.0	4.2	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.3	10.6	0.0	12.0	10.8	0.0	12.0	9.5	0.0	26.6	9.0	0.0
LnGrp LOS	F	B		B	B		B	A		C	A	
Approach Vol, veh/h		1194			540			647			672	
Approach Delay, s/veh		34.1			11.3			10.1			18.1	
Approach LOS		C			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		10.2		20.0		20.0		13.3				
Green Ext Time (p_c), s		2.3		0.0		0.0		1.5				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

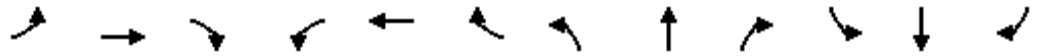
Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
6: I-280 NB Ramps & Hickey Blvd.

Timing Plan: AM Peak

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	869	345	113	605	49	607	56	470	68	169	128
Future Volume (veh/h)	128	869	345	113	605	49	607	56	470	68	169	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	147	999	0	133	712	51	711	0	203	72	178	17
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	180	1212		163	1114	80	790	0	352	84	208	252
Arrive On Green	0.10	0.34	0.00	0.09	0.33	0.33	0.22	0.00	0.22	0.16	0.16	0.16
Sat Flow, veh/h	1781	3647	0	1781	3363	241	3563	0	1585	531	1313	1585
Grp Volume(v), veh/h	147	999	0	133	376	387	711	0	203	250	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1827	1781	0	1585	1844	0	1585
Q Serve(g_s), s	7.8	24.8	0.0	7.1	17.3	17.3	18.7	0.0	11.0	12.7	0.0	0.9
Cycle Q Clear(g_c), s	7.8	24.8	0.0	7.1	17.3	17.3	18.7	0.0	11.0	12.7	0.0	0.9
Prop In Lane	1.00		0.00	1.00		0.13	1.00		1.00	0.29		1.00
Lane Grp Cap(c), veh/h	180	1212		163	589	605	790	0	352	293	0	252
V/C Ratio(X)	0.82	0.82		0.82	0.64	0.64	0.90	0.00	0.58	0.85	0.00	0.07
Avail Cap(c_a), veh/h	272	1532		168	663	682	826	0	367	366	0	315
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	29.1	0.0	42.9	27.3	27.3	36.4	0.0	33.4	39.4	0.0	34.4
Incr Delay (d2), s/veh	10.9	3.0	0.0	25.3	1.7	1.7	12.5	0.0	2.1	14.8	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	10.6	0.0	4.2	7.3	7.5	9.0	0.0	4.3	6.9	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	32.1	0.0	68.2	29.0	29.0	48.9	0.0	35.5	54.2	0.0	34.5
LnGrp LOS	D	C		E	C	C	D	A	D	D	A	C
Approach Vol, veh/h		1146			896			914				267
Approach Delay, s/veh		34.8			34.8			46.0				52.9
Approach LOS		C			C			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.8	13.3	37.3		19.8	14.2	36.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.3	9.1	41.5		19.1	14.7	35.9				
Max Q Clear Time (g_c+I1), s		20.7	9.1	26.8		14.7	9.8	19.3				
Green Ext Time (p_c), s		0.7	0.0	6.0		0.6	0.1	4.3				

Intersection Summary

HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
7: I-280 SB Ramps & Hickey Blvd.

Timing Plan: AM Peak

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	778	844	385	961	0	0	0	0	583	2	416
Future Volume (veh/h)	0	778	844	385	961	0	0	0	0	583	2	416
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	846	0	418	1045	0				775	0	302
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1209		539	2034	0				979	0	435
Arrive On Green	0.00	0.34	0.00	0.16	0.57	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	846	0	418	1045	0				775	0	302
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	12.1	0.0	6.8	10.5	0.0				11.9	0.0	10.1
Cycle Q Clear(g_c), s	0.0	12.1	0.0	6.8	10.5	0.0				11.9	0.0	10.1
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1209		539	2034	0				979	0	435
V/C Ratio(X)	0.00	0.70		0.78	0.51	0.00				0.79	0.00	0.69
Avail Cap(c_a), veh/h	0	2141		639	3070	0				1215	0	541
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.8	0.0	23.9	7.6	0.0				19.8	0.0	19.1
Incr Delay (d2), s/veh	0.0	0.7	0.0	5.0	0.2	0.0				2.9	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	0.0	2.9	2.9	0.0				4.5	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.6	0.0	28.9	7.8	0.0				22.7	0.0	22.0
LnGrp LOS	A	B		C	A	A				C	A	C
Approach Vol, veh/h		846			1463						1077	
Approach Delay, s/veh		17.6			13.9						22.5	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			13.7	24.5		20.7			38.2			
Change Period (Y+Rc), s			4.5	4.5		4.5			4.5			
Max Green Setting (Gmax), s			10.9	35.5		20.1			50.9			
Max Q Clear Time (g_c+I1), s			8.8	14.1		13.9			12.5			
Green Ext Time (p_c), s			0.3	5.9		2.3			9.1			

Intersection Summary

HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵			↵
Traffic Vol, veh/h	1568	59	179	1081	0	63
Future Vol, veh/h	1568	59	179	1081	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1704	64	195	1175	0	68

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	884
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	288
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	288
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	21.4
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	288	-	-
HCM Lane V/C Ratio	0.238	-	-
HCM Control Delay (s)	21.4	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.9	-	-

HCM 6th Signalized Intersection Summary
 9: Gellert Blvd. & Hickey Blvd.

Timing Plan: AM Peak
 11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	90	681	52	388	323	427	70	241	562	363	173	88
Future Volume (veh/h)	90	681	52	388	323	427	70	241	562	363	173	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	107	811	39	431	359	95	80	277	466	422	201	5
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	810	355	406	959	427	563	1183	493	539	283	237
Arrive On Green	0.08	0.23	0.23	0.12	0.27	0.27	0.32	0.32	0.32	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1560	3456	3554	1582	1781	3741	1558	3563	1870	1569
Grp Volume(v), veh/h	107	811	39	431	359	95	80	277	466	422	201	5
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1728	1777	1582	1781	1870	1558	1781	1870	1569
Q Serve(g_s), s	5.7	21.9	1.9	11.3	7.9	4.5	3.1	5.3	28.1	11.0	9.8	0.3
Cycle Q Clear(g_c), s	5.7	21.9	1.9	11.3	7.9	4.5	3.1	5.3	28.1	11.0	9.8	0.3
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	135	810	355	406	959	427	563	1183	493	539	283	237
V/C Ratio(X)	0.79	1.00	0.11	1.06	0.37	0.22	0.14	0.23	0.95	0.78	0.71	0.02
Avail Cap(c_a), veh/h	169	810	355	406	959	427	571	1198	499	667	350	294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	37.1	29.4	42.4	28.5	27.3	23.5	24.3	32.1	39.3	38.8	34.7
Incr Delay (d2), s/veh	18.4	32.1	0.1	61.8	0.2	0.3	0.1	0.1	27.1	4.9	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	12.8	0.7	8.2	3.3	1.7	1.3	2.3	13.8	5.1	4.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	69.2	29.5	104.2	28.8	27.5	23.6	24.4	59.2	44.2	43.8	34.8
LnGrp LOS	E	F	C	F	C	C	C	C	E	D	D	C
Approach Vol, veh/h		957			885			823			628	
Approach Delay, s/veh		66.8			65.4			44.0			44.0	
Approach LOS		E			E			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.9	15.8	26.4		19.0	11.8	30.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.8	11.3	21.9		18.0	9.1	24.1				
Max Q Clear Time (g_c+I1), s		30.1	13.3	23.9		13.0	7.7	9.9				
Green Ext Time (p_c), s		0.3	0.0	0.0		1.3	0.0	2.2				

Intersection Summary

HCM 6th Ctrl Delay	56.4
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Callan Blvd. & Hickey Blvd.

Timing Plan: AM Peak
 11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	188	697	60	17	382	71	85	293	34	68	133	164
Future Volume (veh/h)	188	697	60	17	382	71	85	293	34	68	133	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	204	758	65	19	424	79	90	312	36	74	145	178
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1089	93	41	627	116	123	407	47	111	183	225
Arrive On Green	0.14	0.33	0.33	0.02	0.21	0.21	0.07	0.25	0.25	0.06	0.24	0.24
Sat Flow, veh/h	1781	3305	283	1781	2991	553	1781	1646	190	1781	763	936
Grp Volume(v), veh/h	204	407	416	19	251	252	90	0	348	74	0	323
Grp Sat Flow(s),veh/h/ln	1781	1777	1811	1781	1777	1768	1781	0	1836	1781	0	1699
Q Serve(g_s), s	5.9	10.6	10.6	0.6	6.9	7.0	2.6	0.0	9.4	2.2	0.0	9.5
Cycle Q Clear(g_c), s	5.9	10.6	10.6	0.6	6.9	7.0	2.6	0.0	9.4	2.2	0.0	9.5
Prop In Lane	1.00		0.16	1.00		0.31	1.00		0.10	1.00		0.55
Lane Grp Cap(c), veh/h	254	585	597	41	373	371	123	0	454	111	0	409
V/C Ratio(X)	0.80	0.70	0.70	0.46	0.67	0.68	0.73	0.00	0.77	0.67	0.00	0.79
Avail Cap(c_a), veh/h	318	750	765	167	600	597	184	0	665	174	0	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	15.5	15.5	25.7	19.4	19.4	24.3	0.0	18.6	24.4	0.0	19.0
Incr Delay (d2), s/veh	11.2	2.0	1.9	7.9	2.1	2.2	8.1	0.0	3.2	6.7	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(50%),veh/ln	3.0	3.9	4.0	0.3	2.7	2.8	1.3	0.0	4.0	1.1	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	17.5	17.5	33.6	21.5	21.6	32.4	0.0	21.8	31.1	0.0	23.2
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1027			522			438				397
Approach Delay, s/veh		20.6			22.0			24.0				24.7
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	17.7	5.7	22.1	8.2	17.3	12.1	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	5.2	19.3	5.0	22.5	5.5	19.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	4.2	11.4	2.6	12.6	4.6	11.5	7.9	9.0				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.6	0.0	1.2	0.1	2.0				
Intersection Summary												
HCM 6th Ctrl Delay				22.2								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
 11: Hickey Blvd. & Campus Dr.

Timing Plan: AM Peak
 11/09/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	207	120	117	750	367	265
Future Volume (veh/h)	207	120	117	750	367	265
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
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	292	169	133	852	408	294
Peak Hour Factor	0.71	0.71	0.88	0.88	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	341	197	171	1740	581	414
Arrive On Green	0.32	0.32	0.10	0.49	0.30	0.30
Sat Flow, veh/h	1076	622	1781	3647	2051	1395
Grp Volume(v), veh/h	462	0	133	852	370	332
Grp Sat Flow(s),veh/h/ln	1702	0	1781	1777	1777	1575
Q Serve(g_s), s	11.8	0.0	3.4	7.5	8.6	8.7
Cycle Q Clear(g_c), s	11.8	0.0	3.4	7.5	8.6	8.7
Prop In Lane	0.63	0.37	1.00			0.89
Lane Grp Cap(c), veh/h	539	0	171	1740	527	467
V/C Ratio(X)	0.86	0.00	0.78	0.49	0.70	0.71
Avail Cap(c_a), veh/h	713	0	287	2406	745	660
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.9	0.0	20.5	8.0	14.5	14.6
Incr Delay (d2), s/veh	7.9	0.0	7.3	0.2	1.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	1.6	2.0	3.0	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.8	0.0	27.9	8.2	16.2	16.6
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	462			985	702	
Approach Delay, s/veh	22.8			10.8	16.4	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		27.3		19.2	9.0	18.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5		19.5	7.5	19.5
Max Q Clear Time (g_c+I1), s		9.5		13.8	5.4	10.7
Green Ext Time (p_c), s		6.0		0.9	0.1	2.9

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B
























Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis
12: Skyline Blvd. & Hickey Blvd.

Timing Plan: AM Peak

11/07/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	664	455	180	70	188	264	111	910	121	225	453	321
Future Volume (vph)	664	455	180	70	188	264	111	910	121	225	453	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1752	1583		3492	1556	1770	3539	1561	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1752	1583		2454	1556	1770	3539	1561	1770	3539	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Adj. Flow (vph)	685	469	186	81	219	307	128	1046	139	253	509	361
RTOR Reduction (vph)	0	0	68	0	0	164	0	0	68	0	0	251
Lane Group Flow (vph)	569	585	118	0	300	143	128	1046	71	253	509	110
Confl. Peds. (#/hr)	2						2		1	1		
Confl. Bikes (#/hr)							1					
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	34.5	34.5	34.5		17.3	17.3	13.2	36.9	36.9	12.5	36.2	36.2
Effective Green, g (s)	34.5	34.5	34.5		17.3	17.3	13.2	36.9	36.9	12.5	36.2	36.2
Actuated g/C Ratio	0.29	0.29	0.29		0.15	0.15	0.11	0.31	0.31	0.10	0.30	0.30
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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
Lane Grp Cap (vph)	486	507	458		356	225	196	1095	483	185	1074	480
v/s Ratio Prot	c0.34	0.33					0.07	c0.30		c0.14	0.14	
v/s Ratio Perm			0.07		c0.12	0.09			0.05			0.07
v/c Ratio	1.17	1.15	0.26		0.84	0.63	0.65	0.96	0.15	1.37	0.47	0.23
Uniform Delay, d1	42.4	42.4	32.5		49.6	48.0	50.8	40.3	29.8	53.4	33.8	31.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	97.0	89.8	0.3		16.4	5.8	7.6	17.3	0.1	196.0	0.3	0.2
Delay (s)	139.3	132.1	32.8		66.0	53.7	58.4	57.7	29.9	249.3	34.1	31.3
Level of Service	F	F	C		E	D	E	E	C	F	C	C
Approach Delay (s)		121.4			59.8			54.8			81.7	
Approach LOS		F			E			D			F	
Intersection Summary												
HCM 2000 Control Delay			82.7									F
HCM 2000 Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			119.2								18.0	
Intersection Capacity Utilization			90.7%									E
Analysis Period (min)			15									

c Critical Lane Group

Intersection												
Intersection Delay, s/veh	30.9											
Intersection LOS	D											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	194	17	17	10	23	56	24	404	21	24	246	86
Future Vol, veh/h	194	17	17	10	23	56	24	404	21	24	246	86
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.86	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	20	20	13	31	75	28	470	24	29	300	105
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19	13.1	44	27.3
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	85%	11%	7%
Vol Thru, %	90%	7%	26%	69%
Vol Right, %	5%	7%	63%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	449	228	89	356
LT Vol	24	194	10	24
Through Vol	404	17	23	246
RT Vol	21	17	56	86
Lane Flow Rate	522	265	119	434
Geometry Grp	1	1	1	1
Degree of Util (X)	0.909	0.546	0.249	0.764
Departure Headway (Hd)	6.382	7.419	7.566	6.455
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	574	490	477	564
Service Time	4.382	5.419	5.583	4.455
HCM Lane V/C Ratio	0.909	0.541	0.249	0.77
HCM Control Delay	44	19	13.1	27.3
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	11	3.2	1	6.9

HCM 6th Signalized Intersection Summary
14: Gellert Blvd. & Serramonte Blvd.

Timing Plan: AM Peak
11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷	↶↷	↶↷	↷	↷	↶↷	↷	↷
Traffic Volume (veh/h)	66	333	212	420	246	171	226	141	291	149	179	15
Future Volume (veh/h)	66	333	212	420	246	171	226	141	291	149	179	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	69	347	221	488	286	0	260	162	334	184	221	19
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	704	480	607	587		377	378	1192	302	311	27
Arrive On Green	0.06	0.20	0.20	0.18	0.31	0.00	0.11	0.20	0.20	0.09	0.18	0.18
Sat Flow, veh/h	1781	3554	1578	3456	1870	2790	3563	1870	3147	3456	1695	146
Grp Volume(v), veh/h	69	347	221	488	286	0	260	162	334	184	0	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1728	1870	1395	1781	1870	1573	1728	0	1841
Q Serve(g_s), s	2.0	4.6	6.1	7.2	6.6	0.0	3.8	4.0	4.0	2.7	0.0	6.5
Cycle Q Clear(g_c), s	2.0	4.6	6.1	7.2	6.6	0.0	3.8	4.0	4.0	2.7	0.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	107	704	480	607	587		377	378	1192	302	0	338
V/C Ratio(X)	0.65	0.49	0.46	0.80	0.49		0.69	0.43	0.28	0.61	0.00	0.71
Avail Cap(c_a), veh/h	193	1197	699	640	773		393	665	1675	330	0	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.6	19.0	15.1	21.1	14.9	0.0	23.0	18.6	11.6	23.5	0.0	20.5
Incr Delay (d2), s/veh	6.4	0.5	0.7	7.1	0.6	0.0	4.8	0.8	0.1	2.8	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	2.0	3.3	2.6	0.0	1.7	1.7	1.2	1.2	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	19.6	15.7	28.2	15.5	0.0	27.9	19.4	11.7	26.3	0.0	23.2
LnGrp LOS	C	B	B	C	B		C	B	B	C	A	C
Approach Vol, veh/h		637			774			756				424
Approach Delay, s/veh		19.5			23.5			18.9				24.6
Approach LOS		B			C			B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	15.3	13.9	15.1	10.2	14.3	7.7	21.3				
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	5.1	19.0	9.9	18.0	5.9	18.2	5.8	22.1				
Max Q Clear Time (g_c+I1), s	4.7	6.0	9.2	8.1	5.8	8.5	4.0	8.6				
Green Ext Time (p_c), s	0.0	1.9	0.1	2.2	0.0	0.9	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 15: Serramonte Blvd. & I-280 SB Ramps

Timing Plan: AM Peak
 11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	747	365	0	991	506
Future Volume (veh/h)	0	747	365	0	991	506
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	879	410	0	1194	610
Peak Hour Factor	0.85	0.85	0.89	0.89	0.83	0.83
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1206	1733	0	1557	1257
Arrive On Green	0.00	0.34	0.34	0.00	0.45	0.45
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	879	410	0	1194	610
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	9.3	2.5	0.0	12.4	6.6
Cycle Q Clear(g_c), s	0.0	9.3	2.5	0.0	12.4	6.6
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1206	1733	0	1557	1257
V/C Ratio(X)	0.00	0.73	0.24	0.00	0.77	0.49
Avail Cap(c_a), veh/h	0	1494	2147	0	1856	1499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	10.2	0.0	9.9	8.3
Incr Delay (d2), s/veh	0.0	1.4	0.1	0.0	1.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.7	0.0	3.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	13.8	10.2	0.0	11.5	8.6
LnGrp LOS	A	B	B	A	B	A
Approach Vol, veh/h		879	410		1804	
Approach Delay, s/veh		13.8	10.2		10.5	
Approach LOS		B	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				19.0	23.8	19.0
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s				11.3	14.4	4.5
Green Ext Time (p_c), s				3.2	4.9	2.3
Intersection Summary						
HCM 6th Ctrl Delay			11.4			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary
 16: Serramonte Blvd. & I-280 NB Ramps

Timing Plan: AM Peak
 11/09/2022

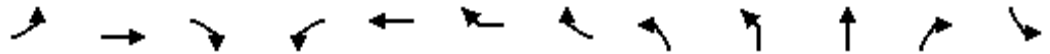


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖↖	↑↑	↗↗			
Traffic Volume (veh/h)	311	1434	363	2	0	0
Future Volume (veh/h)	311	1434	363	2	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	375	1728	448	2		
Peak Hour Factor	0.83	0.83	0.81	0.81		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	637	2987	1803	8		
Arrive On Green	0.18	0.84	0.50	0.50		
Sat Flow, veh/h	3456	3647	3722	16		
Grp Volume(v), veh/h	375	1728	219	231		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1867		
Q Serve(g_s), s	2.8	4.3	2.0	2.0		
Cycle Q Clear(g_c), s	2.8	4.3	2.0	2.0		
Prop In Lane	1.00			0.01		
Lane Grp Cap(c), veh/h	637	2987	883	928		
V/C Ratio(X)	0.59	0.58	0.25	0.25		
Avail Cap(c_a), veh/h	1285	4468	1290	1356		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.5	0.7	4.1	4.1		
Incr Delay (d2), s/veh	0.9	0.2	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.1	0.3	0.3		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	0.9	4.2	4.2		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2103	450			
Approach Delay, s/veh		2.8	4.2			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				28.2	9.7	18.5
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	10.5	20.5
Max Q Clear Time (g_c+I1), s				6.3	4.8	4.0
Green Ext Time (p_c), s				17.5	0.7	2.4
Intersection Summary						
HCM 6th Ctrl Delay			3.0			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

Timing Plan: AM Peak

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	345	801	284	229	214	385	102	60	464	421	280	118
Future Volume (vph)	345	801	284	229	214	385	102	60	464	421	280	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	1770	3121	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	1770	3121	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	375	871	309	249	233	418	111	65	504	458	304	128
RTOR Reduction (vph)	0	0	217	0	0	124	0	0	0	0	172	0
Lane Group Flow (vph)	375	871	92	249	496	142	0	0	569	458	132	128
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Effective Green, g (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Actuated g/C Ratio	0.08	0.30	0.30	0.08	0.30	0.30			0.09	0.24	0.24	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	1048	468	147	924	426			240	842	376	147
v/s Ratio Prot	0.11	c0.25		c0.14	0.16					c0.13		0.07
v/s Ratio Perm			0.06			0.10			c0.22		0.08	
v/c Ratio	1.32	0.83	0.20	1.69	0.54	0.33			2.37	0.54	0.35	0.87
Uniform Delay, d1	27.6	19.7	15.8	27.6	17.7	16.5			27.3	20.0	19.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	164.8	5.7	0.2	339.7	0.6	0.5			629.6	0.7	0.6	39.1
Delay (s)	192.3	25.5	16.0	367.3	18.3	17.0			656.9	20.8	19.6	66.3
Level of Service	F	C	B	F	B	B			F	C	B	E
Approach Delay (s)		63.8			103.9					292.4		
Approach LOS		E			F					F		

Intersection Summary

HCM 2000 Control Delay	133.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

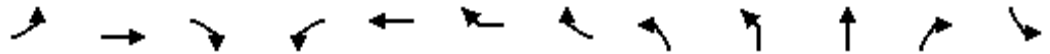
Timing Plan: AM Peak
 11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	280	96	133
Future Volume (vph)	280	96	133
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3404		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3404		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	304	104	145
RTOR Reduction (vph)	0	0	112
Lane Group Flow (vph)	408	0	33
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	13.8		13.8
Effective Green, g (s)	13.8		13.8
Actuated g/C Ratio	0.23		0.23
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	781		363
v/s Ratio Prot	0.12		
v/s Ratio Perm			0.02
v/c Ratio	0.52		0.09
Uniform Delay, d1	20.3		18.2
Progression Factor	1.00		1.00
Incremental Delay, d2	0.6		0.1
Delay (s)	20.9		18.3
Level of Service	C		B
Approach Delay (s)	28.9		
Approach LOS	C		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	345	801	284	229	214	385	102	60	464	421	280	118
Future Volume (vph)	345	801	284	229	214	385	102	60	464	421	280	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	3433	3121	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	3433	3121	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	375	871	309	249	233	418	111	65	504	458	304	128
RTOR Reduction (vph)	0	0	217	0	0	124	0	0	0	0	172	0
Lane Group Flow (vph)	375	871	92	249	496	142	0	0	569	458	132	128
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Effective Green, g (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Actuated g/C Ratio	0.08	0.30	0.30	0.08	0.30	0.30			0.09	0.24	0.24	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	1048	468	285	924	426			240	842	376	147
v/s Ratio Prot	c0.11	c0.25		0.07	0.16					c0.13		0.07
v/s Ratio Perm			0.06			0.10			c0.22		0.08	
v/c Ratio	1.32	0.83	0.20	0.87	0.54	0.33			2.37	0.54	0.35	0.87
Uniform Delay, d1	27.6	19.7	15.8	27.2	17.7	16.5			27.3	20.0	19.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	164.8	5.7	0.2	24.3	0.6	0.5			629.6	0.7	0.6	39.1
Delay (s)	192.3	25.5	16.0	51.5	18.3	17.0			656.9	20.8	19.6	66.3
Level of Service	F	C	B	D	B	B			F	C	B	E
Approach Delay (s)		63.8			26.1					292.4		
Approach LOS		E			C					F		

Intersection Summary

HCM 2000 Control Delay	116.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	280	96	133
Future Volume (vph)	280	96	133
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3404		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3404		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	304	104	145
RTOR Reduction (vph)	0	0	112
Lane Group Flow (vph)	408	0	33
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	13.8		13.8
Effective Green, g (s)	13.8		13.8
Actuated g/C Ratio	0.23		0.23
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	781		363
v/s Ratio Prot	0.12		
v/s Ratio Perm			0.02
v/c Ratio	0.52		0.09
Uniform Delay, d1	20.3		18.2
Progression Factor	1.00		1.00
Incremental Delay, d2	0.6		0.1
Delay (s)	20.9		18.3
Level of Service	C		B
Approach Delay (s)	28.9		
Approach LOS	C		
Intersection Summary			

HCM 6th Signalized Intersection Summary AM

9: Gellert Blvd. & Hickey Blvd. MITIGATED

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↵	↵↵	↑↑	↵	↵	↕↕	↵	↵	↕↑	↵
Traffic Volume (veh/h)	90	681	52	388	323	427	70	241	562	363	173	88
Future Volume (veh/h)	90	681	52	388	323	427	70	241	562	363	173	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	107	811	39	431	359	95	80	216	506	422	201	5
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	932	409	512	1186	528	363	381	624	577	303	254
Arrive On Green	0.08	0.26	0.26	0.15	0.33	0.33	0.20	0.20	0.20	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1561	3456	3554	1582	1781	1870	3063	3563	1870	1570
Grp Volume(v), veh/h	107	811	39	431	359	95	80	216	506	422	201	5
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1728	1777	1582	1781	1870	1531	1781	1870	1570
Q Serve(g_s), s	4.7	17.5	1.5	9.7	6.0	3.4	3.0	8.3	12.7	9.0	8.1	0.2
Cycle Q Clear(g_c), s	4.7	17.5	1.5	9.7	6.0	3.4	3.0	8.3	12.7	9.0	8.1	0.2
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	136	932	409	512	1186	528	363	381	624	577	303	254
V/C Ratio(X)	0.78	0.87	0.10	0.84	0.30	0.18	0.22	0.57	0.81	0.73	0.66	0.02
Avail Cap(c_a), veh/h	189	996	438	538	1186	528	422	443	725	799	419	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	28.3	22.4	33.3	19.8	19.0	26.7	28.8	30.5	32.0	31.6	28.3
Incr Delay (d2), s/veh	13.5	8.1	0.1	11.2	0.1	0.2	0.3	1.3	6.1	2.2	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	8.1	0.5	4.7	2.4	1.2	1.3	3.8	5.0	4.0	3.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	36.4	22.5	44.4	20.0	19.1	27.0	30.1	36.6	34.2	34.1	28.3
LnGrp LOS	D	D	C	D	B	B	C	C	D	C	C	C
Approach Vol, veh/h		957			885			802			628	
Approach Delay, s/veh		37.3			31.8			33.9			34.1	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.8	16.4	25.5		17.5	10.6	31.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	12.5	22.5		18.0	8.5	26.5				
Max Q Clear Time (g_c+I1), s		14.7	11.7	19.5		11.0	6.7	8.0				
Green Ext Time (p_c), s		1.6	0.1	1.5		1.7	0.0	2.4				

Intersection Summary

HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis AM
 12: Skyline Blvd. & Hickey Blvd. MITIGATED

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↘	↔			↕	↗	↘	↕	↗	↘	↕	↗	
Traffic Volume (vph)	664	455	180	70	188	264	111	910	121	225	453	321	
Future Volume (vph)	664	455	180	70	188	264	111	910	121	225	453	321	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.91	0.91			0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99			0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1610	3241			3492	1555	1770	3539	1561	1770	3539	1583	
Flt Permitted	0.95	0.99			0.61	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1610	3241			2170	1555	1770	3539	1561	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	685	469	186	81	219	307	128	1046	139	253	509	361	
RTOR Reduction (vph)	0	16	0	0	0	187	0	0	58	0	0	247	
Lane Group Flow (vph)	445	879	0	0	300	120	128	1046	81	253	509	114	
Confl. Peds. (#/hr)	2					2			1	1			
Confl. Bikes (#/hr)						1							
Turn Type	Split	NA		Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases				8		8			2			6	
Actuated Green, G (s)	43.1	43.1			18.5	18.5	14.5	40.6	40.6	17.5	43.6	43.6	
Effective Green, g (s)	43.1	43.1			18.5	18.5	14.5	40.6	40.6	17.5	43.6	43.6	
Actuated g/C Ratio	0.31	0.31			0.13	0.13	0.11	0.29	0.29	0.13	0.32	0.32	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	503	1014			291	208	186	1043	460	224	1120	501	
v/s Ratio Prot	c0.28	0.27					0.07	c0.30		c0.14	c0.14		
v/s Ratio Perm					c0.14	0.08			0.05			0.07	
v/c Ratio	0.88	0.87			1.07dl	0.58	0.69	1.00	0.18	1.13	0.45	0.23	
Uniform Delay, d1	44.9	44.6			59.6	55.9	59.4	48.5	36.1	60.1	37.6	34.7	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.8	7.9			61.0	3.8	10.1	28.6	0.2	99.4	0.3	0.2	
Delay (s)	61.7	52.5			120.6	59.8	69.5	77.1	36.3	159.5	37.9	34.9	
Level of Service	E	D			F	E	E	E	D	F	D	C	
Approach Delay (s)		55.6			89.8			72.1			64.3		
Approach LOS		E			F			E			E		
Intersection Summary													
HCM 2000 Control Delay			67.5		HCM 2000 Level of Service				E				
HCM 2000 Volume to Capacity ratio			0.97										
Actuated Cycle Length (s)			137.7		Sum of lost time (s)				18.0				
Intersection Capacity Utilization			85.4%		ICU Level of Service				E				
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													

Intersection	
Intersection Delay, s/veh	122.4
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↖	↖	↖	↖	↖
Traffic Vol, veh/h	9	176	752	17	199	344
Future Vol, veh/h	9	176	752	17	199	344
Peak Hour Factor	0.73	0.73	0.91	0.91	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	241	826	19	221	382
Number of Lanes	1	1	1	1	1	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	2	0
HCM Control Delay	15.8	227.9	19.3
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%	100%	0%
Vol Thru, %	100%	0%	0%	0%	0%	100%
Vol Right, %	0%	100%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	752	17	9	176	199	344
LT Vol	0	0	9	0	199	0
Through Vol	752	0	0	0	0	344
RT Vol	0	17	0	176	0	0
Lane Flow Rate	826	19	12	241	221	382
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	1.456	0.029	0.027	0.446	0.415	0.664
Departure Headway (Hd)	6.343	5.63	8.672	7.43	7.255	6.742
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	578	638	415	487	500	539
Service Time	4.06	3.347	6.372	5.13	4.955	4.442
HCM Lane V/C Ratio	1.429	0.03	0.029	0.495	0.442	0.709
HCM Control Delay	232.9	8.5	11.6	16	15	21.8
HCM Lane LOS	F	A	B	C	B	C
HCM 95th-tile Q	40	0.1	0.1	2.3	2	4.9

HCM 6th TWSC PM
1: Gellert Blvd. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	8	220	483	14	215	734
Future Vol, veh/h	8	220	483	14	215	734
Conflicting Peds, #/hr	5	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	275	519	15	234	798

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1796	525	0	0	540	0
Stage 1	525	-	-	-	-	-
Stage 2	1271	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	88	552	-	-	1028	-
Stage 1	593	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	67	549	-	-	1022	-
Mov Cap-2 Maneuver	67	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	202	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.8	0	2.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	67	549	1022	-
HCM Lane V/C Ratio	-	-	0.149	0.501	0.229	-
HCM Control Delay (s)	-	-	67.9	18	9.6	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	0.5	2.8	0.9	-

HCM 6th TWSC PM
2: Marbly Ave. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	156	0	2	187	9	0
Future Vol, veh/h	156	0	2	187	9	0
Conflicting Peds, #/hr	0	1	1	0	4	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	0	3	237	12	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	174	0	421
Stage 1	-	-	-	-	174
Stage 2	-	-	-	-	247
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1403	-	589
Stage 1	-	-	-	-	856
Stage 2	-	-	-	-	794
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1402	-	585
Mov Cap-2 Maneuver	-	-	-	-	585
Stage 1	-	-	-	-	855
Stage 2	-	-	-	-	789

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	585	-	-	1402	-
HCM Lane V/C Ratio	0.021	-	-	0.002	-
HCM Control Delay (s)	11.3	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	1	17	0	0	5	7	59	1	11	77	23
Future Vol, veh/h	9	1	17	0	0	5	7	59	1	11	77	23
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	2	2	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	84	84	84	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1	21	0	0	10	8	70	1	12	87	26

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	221	218	106	225	231	73	118	0	0	73	0	0
Stage 1	129	129	-	89	89	-	-	-	-	-	-	-
Stage 2	92	89	-	136	142	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	735	680	948	730	669	989	1470	-	-	1527	-	-
Stage 1	875	789	-	918	821	-	-	-	-	-	-	-
Stage 2	915	821	-	867	779	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	717	666	943	703	655	987	1463	-	-	1524	-	-
Mov Cap-2 Maneuver	717	666	-	703	655	-	-	-	-	-	-	-
Stage 1	865	779	-	911	814	-	-	-	-	-	-	-
Stage 2	900	814	-	839	769	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.5		8.7		0.8		0.7	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1463	-	-	842	987	1524	-
HCM Lane V/C Ratio	0.006	-	-	0.04	0.01	0.008	-
HCM Control Delay (s)	7.5	0	-	9.5	8.7	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

HCM 6th TWSC PM
4: Serravista Ave. & Driveway

11/09/2022

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	59	92	68	9	22	171
Future Vol, veh/h	59	92	68	9	22	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	100	74	10	24	186

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	84	0	-	0	307 79
Stage 1	-	-	-	-	79 -
Stage 2	-	-	-	-	228 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1513	-	-	-	685 981
Stage 1	-	-	-	-	944 -
Stage 2	-	-	-	-	810 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1513	-	-	-	654 981
Mov Cap-2 Maneuver	-	-	-	-	654 -
Stage 1	-	-	-	-	902 -
Stage 2	-	-	-	-	810 -

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1513	-	-	-	928
HCM Lane V/C Ratio	0.042	-	-	-	0.226
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

HCM 6th Signalized Intersection Summary PM

5: Junipero Serra Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	824	174	136	537	649	139	352	98	284	434	227
Future Volume (veh/h)	294	824	174	136	537	649	139	352	98	284	434	227
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	303	849	0	145	571	0	153	387	0	312	477	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	1598		299	691		422	1454		466	1454	
Arrive On Green	0.43	0.43	0.00	0.43	0.43	0.00	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	841	3741	0	394	1617	1585	917	3647	0	995	3554	1585
Grp Volume(v), veh/h	303	849	0	145	571	0	153	387	0	312	477	0
Grp Sat Flow(s),veh/h/ln	841	1870	0	394	1617	1585	917	1777	0	995	1777	1585
Q Serve(g_s), s	6.3	9.2	0.0	11.7	17.2	0.0	7.5	4.0	0.0	16.6	5.0	0.0
Cycle Q Clear(g_c), s	23.5	9.2	0.0	21.0	17.2	0.0	12.6	4.0	0.0	20.6	5.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	1598		299	691		422	1454		466	1454	
V/C Ratio(X)	1.33	0.53		0.48	0.83		0.36	0.27		0.67	0.33	
Avail Cap(c_a), veh/h	227	1598		299	691		422	1454		466	1454	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.2	11.7	0.0	19.4	13.9	0.0	15.4	10.8	0.0	17.6	11.1	0.0
Incr Delay (d2), s/veh	176.8	0.3	0.0	1.2	8.2	0.0	0.5	0.1	0.0	3.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	3.2	0.0	1.6	6.5	0.0	1.4	1.3	0.0	3.6	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	202.9	12.0	0.0	20.7	22.1	0.0	15.9	10.9	0.0	21.3	11.2	0.0
LnGrp LOS	F	B		C	C		B	B		C	B	
Approach Vol, veh/h		1152			716			540			789	
Approach Delay, s/veh		62.2			21.8			12.3			15.2	
Approach LOS		E			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		28.0		27.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		23.5		22.5		23.5				
Max Q Clear Time (g_c+I1), s		14.6		25.5		22.6		23.0				
Green Ext Time (p_c), s		2.0		0.0		0.0		0.3				

Intersection Summary

HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕		↵	↕	↕		↕	↕
Traffic Volume (veh/h)	182	800	299	209	762	53	801	90	422	60	90	100
Future Volume (veh/h)	182	800	299	209	762	53	801	90	422	60	90	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		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	870	0	218	794	51	941	0	144	66	99	6
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	1028		248	1016	65	1061	0	472	80	121	171
Arrive On Green	0.13	0.29	0.00	0.14	0.30	0.30	0.30	0.00	0.30	0.11	0.11	0.11
Sat Flow, veh/h	1781	3647	0	1781	3389	218	3563	0	1585	733	1100	1563
Grp Volume(v), veh/h	198	870	0	218	416	429	941	0	144	165	0	6
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1830	1781	0	1585	1834	0	1563
Q Serve(g_s), s	11.9	25.2	0.0	13.2	23.5	23.5	27.6	0.0	7.7	9.6	0.0	0.4
Cycle Q Clear(g_c), s	11.9	25.2	0.0	13.2	23.5	23.5	27.6	0.0	7.7	9.6	0.0	0.4
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	0.40		1.00
Lane Grp Cap(c), veh/h	229	1028		248	533	549	1061	0	472	201	0	171
V/C Ratio(X)	0.87	0.85		0.88	0.78	0.78	0.89	0.00	0.31	0.82	0.00	0.04
Avail Cap(c_a), veh/h	281	1249		270	613	632	1262	0	562	303	0	258
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.8	36.6	0.0	46.3	35.1	35.1	36.7	0.0	29.7	47.7	0.0	43.6
Incr Delay (d2), s/veh	20.3	4.7	0.0	25.4	5.7	5.5	7.0	0.0	0.4	10.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	11.3	0.0	7.5	10.7	11.0	12.4	0.0	2.9	5.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.1	41.4	0.0	71.7	40.7	40.6	43.7	0.0	30.1	58.1	0.0	43.7
LnGrp LOS	E	D		E	D	D	D	A	C	E	A	D
Approach Vol, veh/h		1068			1063			1085				171
Approach Delay, s/veh		46.1			47.0			41.9				57.6
Approach LOS		D			D			D				E
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.1	19.7	36.2		16.5	18.6	37.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		29.6	15.2	27.2		11.6	13.9	25.5				
Green Ext Time (p_c), s		3.0	0.1	4.4		0.4	0.2	4.2				

Intersection Summary

HCM 6th Ctrl Delay	45.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

7: I-280 SB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	731	770	361	1352	0	0	0	0	552	5	443
Future Volume (veh/h)	0	731	770	361	1352	0	0	0	0	552	5	443
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	850	0	376	1408	0				761	0	326
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1177		500	1981	0				997	0	444
Arrive On Green	0.00	0.33	0.00	0.14	0.56	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	850	0	376	1408	0				761	0	326
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	11.6	0.0	5.8	16.1	0.0				10.8	0.0	10.3
Cycle Q Clear(g_c), s	0.0	11.6	0.0	5.8	16.1	0.0				10.8	0.0	10.3
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1177		500	1981	0				997	0	444
V/C Ratio(X)	0.00	0.72		0.75	0.71	0.00				0.76	0.00	0.73
Avail Cap(c_a), veh/h	0	1703		594	2603	0				1321	0	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.3	0.0	22.7	9.0	0.0				18.2	0.0	18.1
Incr Delay (d2), s/veh	0.0	0.9	0.0	4.4	0.6	0.0				1.9	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	0.0	2.4	4.5	0.0				3.9	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.1	0.0	27.1	9.6	0.0				20.2	0.0	21.4
LnGrp LOS	A	B		C	A	A				C	A	C
Approach Vol, veh/h		850			1784						1087	
Approach Delay, s/veh		17.1			13.3						20.5	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			12.5	22.8		20.0		35.3				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			9.5	26.5		20.5		40.5				
Max Q Clear Time (g_c+I1), s			7.8	13.6		12.8		18.1				
Green Ext Time (p_c), s			0.3	4.7		2.7		11.2				

Intersection Summary

HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC PM
8: Driveway & Hickey Blvd.

11/14/2022

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1259	26	80	1653	0	256
Future Vol, veh/h	1259	26	80	1653	0	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1325	27	84	1740	0	269

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	676
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	396
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	396
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	31.4
HCM LOS		D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	396	-	-
HCM Lane V/C Ratio	0.68	-	-
HCM Control Delay (s)	31.4	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	4.9	-	-

HCM 6th Signalized Intersection Summary PM

9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	406	41	589	422	675	145	296	315	561	319	196
Future Volume (veh/h)	119	406	41	589	422	675	145	296	315	561	319	196
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		0.99	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	514	0	647	464	343	159	325	78	623	354	29
Peak Hour Factor	0.79	0.79	0.79	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	680	304	724	1071	472	268	563	230	789	414	343
Arrive On Green	0.10	0.19	0.00	0.21	0.30	0.30	0.15	0.15	0.15	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3554	1566	1781	3741	1531	3563	1870	1549
Grp Volume(v), veh/h	151	514	0	647	464	343	159	325	78	623	354	29
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1566	1781	1870	1531	1781	1870	1549
Q Serve(g_s), s	6.6	10.8	0.0	14.4	8.3	15.5	6.6	6.4	3.6	13.1	14.4	1.2
Cycle Q Clear(g_c), s	6.6	10.8	0.0	14.4	8.3	15.5	6.6	6.4	3.6	13.1	14.4	1.2
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	177	680	304	724	1071	472	268	563	230	789	414	343
V/C Ratio(X)	0.85	0.76	0.00	0.89	0.43	0.73	0.59	0.58	0.34	0.79	0.85	0.08
Avail Cap(c_a), veh/h	177	807	360	741	1214	535	416	873	357	831	436	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	30.3	0.0	30.5	22.3	24.8	31.4	31.3	30.1	29.1	29.6	24.5
Incr Delay (d2), s/veh	30.5	3.4	0.0	13.1	0.3	4.3	2.1	0.9	0.9	4.9	14.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	4.7	0.0	7.0	3.3	5.9	2.9	2.9	1.3	5.9	7.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	33.7	0.0	43.6	22.5	29.1	33.5	32.3	31.0	34.1	44.3	24.6
LnGrp LOS	E	C	A	D	C	C	C	C	C	C	D	C
Approach Vol, veh/h		665			1454			562			1006	
Approach Delay, s/veh		41.0			33.4			32.4			37.4	
Approach LOS		D			C			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.4	21.1	19.7		22.1	12.4	28.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.0	18.0		18.5	7.9	27.1				
Max Q Clear Time (g_c+I1), s		8.6	16.4	12.8		16.4	8.6	17.5				
Green Ext Time (p_c), s		2.1	0.2	1.5		1.1	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary PM
 10: Callan Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	144	455	100	68	593	129	52	182	34	41	207	192
Future Volume (veh/h)	144	455	100	68	593	129	52	182	34	41	207	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	164	517	114	75	652	142	61	214	40	44	220	204
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.85	0.85	0.85	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	934	205	103	770	167	93	447	84	76	250	232
Arrive On Green	0.12	0.32	0.32	0.06	0.27	0.27	0.05	0.29	0.29	0.04	0.28	0.28
Sat Flow, veh/h	1781	2892	634	1781	2896	630	1781	1528	286	1781	885	820
Grp Volume(v), veh/h	164	317	314	75	400	394	61	0	254	44	0	424
Grp Sat Flow(s),veh/h/ln	1781	1777	1749	1781	1777	1749	1781	0	1813	1781	0	1705
Q Serve(g_s), s	5.7	9.3	9.4	2.6	13.5	13.5	2.1	0.0	7.3	1.5	0.0	15.0
Cycle Q Clear(g_c), s	5.7	9.3	9.4	2.6	13.5	13.5	2.1	0.0	7.3	1.5	0.0	15.0
Prop In Lane	1.00		0.36	1.00		0.36	1.00		0.16	1.00		0.48
Lane Grp Cap(c), veh/h	205	574	565	103	472	465	93	0	530	76	0	483
V/C Ratio(X)	0.80	0.55	0.56	0.73	0.85	0.85	0.66	0.00	0.48	0.58	0.00	0.88
Avail Cap(c_a), veh/h	239	574	565	202	505	497	141	0	584	143	0	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	17.7	17.7	29.4	22.0	22.0	29.5	0.0	18.4	29.8	0.0	21.7
Incr Delay (d2), s/veh	15.3	1.1	1.2	9.4	12.0	12.4	7.7	0.0	0.7	6.9	0.0	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.6	3.6	1.3	6.6	6.6	1.1	0.0	2.9	0.8	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	18.8	18.9	38.7	34.1	34.4	37.2	0.0	19.1	36.6	0.0	35.4
LnGrp LOS	D	B	B	D	C	C	D	A	B	D	A	D
Approach Vol, veh/h		795			869			315				468
Approach Delay, s/veh		23.8			34.6			22.6				35.5
Approach LOS		C			C			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	23.0	8.2	25.0	7.8	22.4	11.8	21.3				
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	5.1	20.4	7.2	19.3	5.0	20.5	8.5	18.0				
Max Q Clear Time (g_c+I1), s	3.5	9.3	4.6	11.4	4.1	17.0	7.7	15.5				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.3	0.0	0.9	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay				29.7								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary PM
 11: Hickey Blvd. & Campus Dr.

11/09/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	150	60	542	706	135
Future Volume (veh/h)	86	150	60	542	706	135
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.99
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	109	190	65	583	776	148
Peak Hour Factor	0.79	0.79	0.93	0.93	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	140	245	114	1923	1085	207
Arrive On Green	0.23	0.23	0.06	0.54	0.37	0.37
Sat Flow, veh/h	598	1042	1781	3647	3065	567
Grp Volume(v), veh/h	300	0	65	583	464	460
Grp Sat Flow(s),veh/h/ln	1645	0	1781	1777	1777	1761
Q Serve(g_s), s	6.9	0.0	1.4	3.6	9.0	9.0
Cycle Q Clear(g_c), s	6.9	0.0	1.4	3.6	9.0	9.0
Prop In Lane	0.36	0.63	1.00			0.32
Lane Grp Cap(c), veh/h	387	0	114	1923	649	643
V/C Ratio(X)	0.78	0.00	0.57	0.30	0.72	0.72
Avail Cap(c_a), veh/h	736	0	226	2475	813	806
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.4	0.0	18.3	5.1	11.0	11.0
Incr Delay (d2), s/veh	3.4	0.0	4.4	0.1	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.6	0.7	2.9	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.8	0.0	22.7	5.2	13.2	13.2
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	300			648	924	
Approach Delay, s/veh	17.8			6.9	13.2	
Approach LOS	B			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		26.3		13.9	7.1	19.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.1	18.4
Max Q Clear Time (g_c+I1), s		5.6		8.9	3.4	11.0
Green Ext Time (p_c), s		3.9		0.7	0.0	3.3

Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis PM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	356	284	142	148	340	293	179	573	101	220	623	653
Future Volume (vph)	356	284	142	148	340	293	179	573	101	220	623	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1758	1583		3486	1548	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.74	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1758	1583		2618	1548	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	387	309	154	156	358	308	188	603	106	232	656	687
RTOR Reduction (vph)	0	0	100	0	0	209	0	0	83	0	0	370
Lane Group Flow (vph)	341	355	54	0	514	99	188	603	23	232	656	317
Confl. Peds. (#/hr)	7					7						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	18.5	18.5	18.5		20.3	20.3	10.1	19.3	19.3	11.9	21.1	21.1
Effective Green, g (s)	18.5	18.5	18.5		20.3	20.3	10.1	19.3	19.3	11.9	21.1	21.1
Actuated g/C Ratio	0.21	0.21	0.21		0.23	0.23	0.11	0.22	0.22	0.14	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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
Lane Grp Cap (vph)	353	369	332		603	357	203	776	347	239	848	379
v/s Ratio Prot	c0.20	0.20					0.11	0.17		c0.13	0.19	
v/s Ratio Perm			0.03		c0.20	0.06			0.01			c0.20
v/c Ratio	0.97	0.96	0.16		0.85	0.28	0.93	0.78	0.07	0.97	0.77	0.84
Uniform Delay, d1	34.4	34.4	28.4		32.4	27.8	38.6	32.3	27.2	37.9	31.2	31.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.5	36.7	0.2		11.2	0.4	42.5	4.9	0.1	49.8	4.4	14.7
Delay (s)	73.0	71.1	28.6		43.6	28.2	81.1	37.2	27.3	87.6	35.7	46.5
Level of Service	E	E	C		D	C	F	D	C	F	D	D
Approach Delay (s)		64.2			37.9			45.3			48.0	
Approach LOS		E			D			D			D	

Intersection Summary		
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.92	D
Actuated Cycle Length (s)	88.0	Sum of lost time (s)
Intersection Capacity Utilization	75.6%	18.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		D

Intersection

Intersection Delay, s/veh31.5

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	98	14	21	23	14	24	35	245	15	22	430	163
Future Vol, veh/h	98	14	21	23	14	24	35	245	15	22	430	163
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.87	0.87	0.87	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	17	26	28	17	29	40	282	17	24	467	177
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.9	11.1	15.4	46.5
HCM LOS	B	B	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	74%	38%	4%
Vol Thru, %	83%	11%	23%	70%
Vol Right, %	5%	16%	39%	27%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	295	133	61	615
LT Vol	35	98	23	22
Through Vol	245	14	14	430
RT Vol	15	21	24	163
Lane Flow Rate	339	164	74	668
Geometry Grp	1	1	1	1
Degree of Util (X)	0.539	0.312	0.144	0.955
Departure Headway (Hd)	5.718	6.841	6.95	5.142
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	624	529	519	702
Service Time	3.817	4.847	4.96	3.223
HCM Lane V/C Ratio	0.543	0.31	0.143	0.952
HCM Control Delay	15.4	12.9	11.1	46.5
HCM Lane LOS	C	B	B	E
HCM 95th-tile Q	3.2	1.3	0.5	13.9

HCM 6th Signalized Intersection Summary PM

14: Gellert Blvd. & Serramonte Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	411	289	566	366	575	354	301	592	502	309	65
Future Volume (veh/h)	64	411	289	566	366	575	354	301	592	502	309	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	472	332	578	373	0	385	327	643	534	329	69
Peak Hour Factor	0.87	0.87	0.87	0.98	0.98	0.98	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	95	737	533	661	645		469	393	1234	621	385	81
Arrive On Green	0.05	0.21	0.21	0.19	0.35	0.00	0.13	0.21	0.21	0.18	0.26	0.26
Sat Flow, veh/h	1781	3554	1564	3456	1870	2790	3563	1870	2989	3456	1491	313
Grp Volume(v), veh/h	74	472	332	578	373	0	385	327	643	534	0	398
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1728	1870	1395	1781	1870	1495	1728	0	1804
Q Serve(g_s), s	3.5	10.3	15.2	13.8	13.9	0.0	9.0	14.2	14.0	12.8	0.0	17.9
Cycle Q Clear(g_c), s	3.5	10.3	15.2	13.8	13.9	0.0	9.0	14.2	14.0	12.8	0.0	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	95	737	533	661	645		469	393	1234	621	0	466
V/C Ratio(X)	0.78	0.64	0.62	0.88	0.58		0.82	0.83	0.52	0.86	0.00	0.85
Avail Cap(c_a), veh/h	138	752	540	711	645		523	426	1287	694	0	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.8	30.8	23.6	33.4	22.8	0.0	36.0	32.2	19.4	33.9	0.0	30.0
Incr Delay (d2), s/veh	15.5	1.8	2.2	11.2	1.3	0.0	9.3	12.3	0.3	9.8	0.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.5	5.7	6.7	6.1	0.0	4.4	7.6	4.7	6.1	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.3	32.6	25.8	44.7	24.1	0.0	45.2	44.5	19.8	43.7	0.0	42.6
LnGrp LOS	E	C	C	D	C		D	D	B	D	A	D
Approach Vol, veh/h		878			951			1355				932
Approach Delay, s/veh		31.9			36.6			33.0				43.2
Approach LOS		C			D			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	22.4	20.8	22.1	15.7	26.5	9.0	33.9				
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	17.1	19.4	17.5	18.0	12.5	24.0	6.6	28.9				
Max Q Clear Time (g_c+I1), s	14.8	16.2	15.8	17.2	11.0	19.9	5.5	15.9				
Green Ext Time (p_c), s	0.5	1.6	0.4	0.4	0.2	0.9	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

15: Serramonte Blvd. & I-280 SB Ramps

11/09/2022

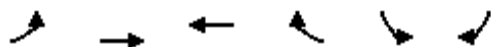


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1539	663	0	845	918
Future Volume (veh/h)	0	1539	663	0	845	918
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1620	729	0	889	966
Peak Hour Factor	0.95	0.95	0.91	0.91	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1691	2430	0	1291	1042
Arrive On Green	0.00	0.48	0.48	0.00	0.37	0.37
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1620	729	0	889	966
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	26.3	5.2	0.0	13.0	19.8
Cycle Q Clear(g_c), s	0.0	26.3	5.2	0.0	13.0	19.8
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1691	2430	0	1291	1042
V/C Ratio(X)	0.00	0.96	0.30	0.00	0.69	0.93
Avail Cap(c_a), veh/h	0	1693	2432	0	1300	1049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.1	9.6	0.0	15.8	18.0
Incr Delay (d2), s/veh	0.0	13.3	0.1	0.0	1.5	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.8	1.7	0.0	4.4	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	28.4	9.7	0.0	17.3	31.5
LnGrp LOS	A	C	A	A	B	C
Approach Vol, veh/h		1620	729		1855	
Approach Delay, s/veh		28.4	9.7		24.7	
Approach LOS		C	A		C	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				33.0	26.9	33.0
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				28.5	22.5	28.5
Max Q Clear Time (g_c+I1), s				28.3	21.8	7.2
Green Ext Time (p_c), s				0.2	0.5	5.2
Intersection Summary						
HCM 6th Ctrl Delay			23.5			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary PM

16: Serramonte Blvd. & I-280 NB Ramps

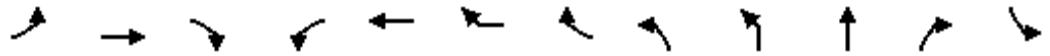
11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶↶	↶↶	↶↶			
Traffic Volume (veh/h)	738	1649	652	15	0	0
Future Volume (veh/h)	738	1649	652	15	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	761	1700	716	16		
Peak Hour Factor	0.97	0.97	0.91	0.91		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1095	2983	1285	29		
Arrive On Green	0.32	0.84	0.36	0.36		
Sat Flow, veh/h	3456	3647	3645	79		
Grp Volume(v), veh/h	761	1700	358	374		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1854		
Q Serve(g_s), s	5.4	4.1	4.5	4.5		
Cycle Q Clear(g_c), s	5.4	4.1	4.5	4.5		
Prop In Lane	1.00			0.04		
Lane Grp Cap(c), veh/h	1095	2983	643	671		
V/C Ratio(X)	0.69	0.57	0.56	0.56		
Avail Cap(c_a), veh/h	1542	4504	1174	1225		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.4	0.7	7.1	7.1		
Incr Delay (d2), s/veh	0.8	0.2	0.8	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.1	1.1	1.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.2	0.9	7.9	7.9		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		2461	732			
Approach Delay, s/veh		3.4	7.9			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				28.0	13.4	14.6
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	12.5	18.5
Max Q Clear Time (g_c+I1), s				6.1	7.4	6.5
Green Ext Time (p_c), s				17.2	1.5	3.6
Intersection Summary						
HCM 6th Ctrl Delay			4.5			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	508	758	339	223	391	437	103	136	450	494	171	144
Future Volume (vph)	508	758	339	223	391	437	103	136	450	494	171	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	1770	3176	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	1770	3176	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	558	833	373	248	434	486	114	149	495	543	188	155
RTOR Reduction (vph)	0	0	222	0	0	126	0	0	0	0	138	0
Lane Group Flow (vph)	558	833	151	248	711	197	0	0	644	543	50	155
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.3	16.3	5.0
Effective Green, g (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.3	16.3	5.0
Actuated g/C Ratio	0.08	0.28	0.28	0.08	0.28	0.28			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	1006	442	142	903	404			233	931	409	142
v/s Ratio Prot	c0.16	c0.24		0.14	0.22					0.15		0.09
v/s Ratio Perm			0.10			0.14			c0.25		0.03	
v/c Ratio	2.01	0.83	0.34	1.75	0.79	0.49			2.76	0.58	0.12	1.09
Uniform Delay, d1	28.4	20.7	17.6	28.4	20.4	18.4			28.2	19.8	17.3	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	469.1	5.7	0.5	363.3	4.6	0.9			805.7	0.9	0.1	102.2
Delay (s)	497.5	26.4	18.0	391.8	25.0	19.3			833.9	20.8	17.5	130.6
Level of Service	F	C	B	F	C	B			F	C	B	F
Approach Delay (s)		173.7			94.5					401.2		
Approach LOS		F			F					F		

Intersection Summary		
HCM 2000 Control Delay	189.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	1.14	F
Actuated Cycle Length (s)	61.9	Sum of lost time (s)
Intersection Capacity Utilization	83.6%	18.0
Analysis Period (min)	15	ICU Level of Service
		E

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022

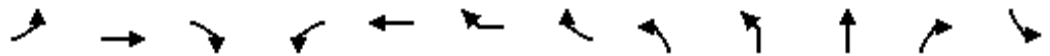


Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	365	156	222
Future Volume (vph)	365	156	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3367		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3367		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	392	168	239
RTOR Reduction (vph)	0	0	178
Lane Group Flow (vph)	560	0	61
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.8		15.8
Effective Green, g (s)	15.8		15.8
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	859		398
v/s Ratio Prot	c0.17		
v/s Ratio Perm			0.04
v/c Ratio	0.65		0.15
Uniform Delay, d1	20.6		17.9
Progression Factor	1.00		1.00
Incremental Delay, d2	1.8		0.2
Delay (s)	22.4		18.0
Level of Service	C		B
Approach Delay (s)	38.9		
Approach LOS	D		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis PM

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL	
Lane Configurations													
Traffic Volume (vph)	508	758	339	223	391	437	103	136	450	494	171	144	
Future Volume (vph)	508	758	339	223	391	437	103	136	450	494	171	144	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	0.91			0.97	0.95	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94	0.85			1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95	
Satd. Flow (prot)	3433	3539	1555	3433	3176	1421			3433	3539	1555	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95	
Satd. Flow (perm)	3433	3539	1555	3433	3176	1421			2628	3539	1555	1770	
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93	
Adj. Flow (vph)	558	833	373	248	434	486	114	149	495	543	188	155	
RTOR Reduction (vph)	0	0	222	0	0	126	0	0	0	0	138	0	
Lane Group Flow (vph)	558	833	151	248	711	197	0	0	644	543	50	155	
Confl. Peds. (#/hr)			5	5							6	6	
Confl. Bikes (#/hr)			1			1	1						
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot	
Protected Phases	7	4		3	8				5	2		1	
Permitted Phases			4			8		5			2		
Actuated Green, G (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.3	16.3	5.0	
Effective Green, g (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.3	16.3	5.0	
Actuated g/C Ratio	0.08	0.28	0.28	0.08	0.28	0.28			0.09	0.26	0.26	0.08	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	277	1006	442	277	903	404			233	931	409	142	
v/s Ratio Prot	c0.16	c0.24		0.07	0.22					0.15		0.09	
v/s Ratio Perm			0.10			0.14			c0.25		0.03		
v/c Ratio	2.01	0.83	0.34	0.90	0.79	0.49			2.76	0.58	0.12	1.09	
Uniform Delay, d1	28.4	20.7	17.6	28.2	20.4	18.4			28.2	19.8	17.3	28.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	469.1	5.7	0.5	28.5	4.6	0.9			805.7	0.9	0.1	102.2	
Delay (s)	497.5	26.4	18.0	56.7	25.0	19.3			833.9	20.8	17.5	130.6	
Level of Service	F	C	B	E	C	B			F	C	B	F	
Approach Delay (s)		173.7			29.7					401.2			
Approach LOS		F			C					F			
Intersection Summary													
HCM 2000 Control Delay			173.6									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.14										
Actuated Cycle Length (s)			61.9									Sum of lost time (s)	18.0
Intersection Capacity Utilization			83.6%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	365	156	222
Future Volume (vph)	365	156	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3367		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3367		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	392	168	239
RTOR Reduction (vph)	0	0	178
Lane Group Flow (vph)	560	0	61
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.8		15.8
Effective Green, g (s)	15.8		15.8
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	859		398
v/s Ratio Prot	c0.17		
v/s Ratio Perm			0.04
v/c Ratio	0.65		0.15
Uniform Delay, d1	20.6		17.9
Progression Factor	1.00		1.00
Incremental Delay, d2	1.8		0.2
Delay (s)	22.4		18.0
Level of Service	C		B
Approach Delay (s)	38.9		
Approach LOS	D		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis PM

12: Skyline Blvd. & Hickey Blvd. - MITIGATED

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	356	284	142	148	340	293	179	573	101	220	623	653
Future Volume (vph)	356	284	142	148	340	293	179	573	101	220	623	653
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.91	0.91			0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.96			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99			0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3222			3486	1548	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.99			0.67	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3222			2381	1548	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	387	309	154	156	358	308	188	603	106	232	656	687
RTOR Reduction (vph)	0	40	0	0	0	208	0	0	83	0	0	370
Lane Group Flow (vph)	286	524	0	0	514	100	188	603	23	232	656	317
Confl. Peds. (#/hr)	7					7						
Turn Type	Split	NA		Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)	17.9	17.9			20.8	20.8	10.1	19.3	19.3	11.9	21.1	21.1
Effective Green, g (s)	17.9	17.9			20.8	20.8	10.1	19.3	19.3	11.9	21.1	21.1
Actuated g/C Ratio	0.20	0.20			0.24	0.24	0.11	0.22	0.22	0.14	0.24	0.24
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	327	656			563	366	203	777	347	239	849	379
v/s Ratio Prot	c0.18	0.16					0.11	0.17		c0.13	0.19	
v/s Ratio Perm					c0.22	0.06			0.01			c0.20
v/c Ratio	0.87	0.80			0.91	0.27	0.93	0.78	0.07	0.97	0.77	0.84
Uniform Delay, d1	33.9	33.3			32.7	27.4	38.5	32.3	27.2	37.8	31.2	31.8
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.9	6.8			19.2	0.4	42.5	4.9	0.1	49.8	4.4	14.7
Delay (s)	55.8	40.1			51.9	27.8	81.1	37.2	27.3	87.6	35.6	46.5
Level of Service	E	D			D	C	F	D	C	F	D	D
Approach Delay (s)		45.4			42.9			45.2			48.0	
Approach LOS		D			D			D			D	

Intersection Summary	
HCM 2000 Control Delay	45.8 HCM 2000 Level of Service D
HCM 2000 Volume to Capacity ratio	0.91
Actuated Cycle Length (s)	87.9 Sum of lost time (s) 18.0
Intersection Capacity Utilization	75.6% ICU Level of Service D
Analysis Period (min)	15
c	Critical Lane Group

**Appendix D – Existing + Project Alternative 2 Conditions
Intersection Level of Service Worksheets**

HCM 6th TWSC AM
1: Gellert Blvd. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	9	151	752	17	162	344
Future Vol, veh/h	9	151	752	17	162	344
Conflicting Peds, #/hr	5	2	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	207	826	19	180	382

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1576	831	0	0	848	0
Stage 1	829	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	121	370	-	-	790	-
Stage 1	429	-	-	-	-	-
Stage 2	468	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	93	368	-	-	788	-
Mov Cap-2 Maneuver	93	-	-	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	359	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.9	0	3.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	93	368	788
HCM Lane V/C Ratio	-	-	0.133	0.562	0.228
HCM Control Delay (s)	-	-	49.5	26.6	10.9
HCM Lane LOS	-	-	E	D	B
HCM 95th %tile Q(veh)	-	-	0.4	3.3	0.9

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	174	9	4	142	15	0
Future Vol, veh/h	174	9	4	142	15	0
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	80	80	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	15	5	178	22	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	302	0	484 295
Stage 1	-	-	-	-	295 -
Stage 2	-	-	-	-	189 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1259	-	542 744
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	843 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1257	-	538 743
Mov Cap-2 Maneuver	-	-	-	-	538 -
Stage 1	-	-	-	-	753 -
Stage 2	-	-	-	-	839 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	538	-	-	1257	-
HCM Lane V/C Ratio	0.042	-	-	0.004	-
HCM Control Delay (s)	12	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	19	11	2	6	9	8	23	128	8	4	36	3
Future Vol, veh/h	19	11	2	6	9	8	23	128	8	4	36	3
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	55	55	55	68	68	68	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	24	4	11	16	15	34	188	12	6	55	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	351	345	60	351	341	200	62	0	0	205	0	0
Stage 1	72	72	-	267	267	-	-	-	-	-	-	-
Stage 2	279	273	-	84	74	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	604	578	1005	604	581	841	1541	-	-	1366	-	-
Stage 1	938	835	-	738	688	-	-	-	-	-	-	-
Stage 2	728	684	-	924	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	565	557	1003	565	560	836	1538	-	-	1359	-	-
Mov Cap-2 Maneuver	565	557	-	565	560	-	-	-	-	-	-	-
Stage 1	913	829	-	716	667	-	-	-	-	-	-	-
Stage 2	680	663	-	888	827	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.1		11.1		1.1		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1538	-	-	578	634	1359	-
HCM Lane V/C Ratio	0.022	-	-	0.123	0.066	0.005	-
HCM Control Delay (s)	7.4	0	-	12.1	11.1	7.7	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	0	-

HCM 6th TWSC AM
4: Serravista Ave. & Driveway

11/09/2022

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	95	49	139	14	2	17
Future Vol, veh/h	95	49	139	14	2	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	53	151	15	2	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	166	0	-	0	418 159
Stage 1	-	-	-	-	159 -
Stage 2	-	-	-	-	259 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1412	-	-	-	591 886
Stage 1	-	-	-	-	870 -
Stage 2	-	-	-	-	784 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1412	-	-	-	547 886
Mov Cap-2 Maneuver	-	-	-	-	547 -
Stage 1	-	-	-	-	805 -
Stage 2	-	-	-	-	784 -

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1412	-	-	-	832
HCM Lane V/C Ratio	0.073	-	-	-	0.025
HCM Control Delay (s)	7.8	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

HCM 6th Signalized Intersection Summary AM

5: Junipero Serra Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	353	656	75	96	390	417	140	444	124	310	288	271
Future Volume (veh/h)	353	656	75	96	390	417	140	444	124	310	288	271
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	415	772	0	104	424	0	152	483	0	348	324	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	1496		245	851		519	1421		439	1421	
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	963	3741	0	311	2129	1585	1056	3647	0	912	3554	1585
Grp Volume(v), veh/h	415	772	0	207	321	0	152	483	0	348	324	0
Grp Sat Flow(s),veh/h/ln	963	1870	0	823	1617	1585	1056	1777	0	912	1777	1585
Q Serve(g_s), s	11.3	7.0	0.0	4.1	6.7	0.0	5.0	4.2	0.0	13.8	2.7	0.0
Cycle Q Clear(g_c), s	18.0	7.0	0.0	11.2	6.7	0.0	7.7	4.2	0.0	18.0	2.7	0.0
Prop In Lane	1.00		0.00	0.50		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	402	1496		449	647		519	1421		439	1421	
V/C Ratio(X)	1.03	0.52		0.46	0.50		0.29	0.34		0.79	0.23	
Avail Cap(c_a), veh/h	402	1496		449	647		519	1421		439	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.1	10.2	0.0	11.2	10.1	0.0	11.5	9.4	0.0	17.0	8.9	0.0
Incr Delay (d2), s/veh	53.5	0.3	0.0	0.7	0.6	0.0	0.3	0.1	0.0	9.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	2.2	0.0	1.1	1.9	0.0	0.9	1.2	0.0	4.2	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.6	10.5	0.0	11.9	10.7	0.0	11.8	9.5	0.0	26.6	9.0	0.0
LnGrp LOS	F	B		B	B		B	A		C	A	
Approach Vol, veh/h		1187			528			635			672	
Approach Delay, s/veh		32.2			11.2			10.1			18.1	
Approach LOS		C			B			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		9.7		20.0		20.0		13.2				
Green Ext Time (p_c), s		2.3		0.0		0.0		1.5				

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM

6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	862	330	113	583	49	580	56	470	68	169	128
Future Volume (veh/h)	128	862	330	113	583	49	580	56	470	68	169	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	147	991	0	133	686	51	681	0	203	72	178	17
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	1212		163	1111	83	774	0	344	85	209	253
Arrive On Green	0.10	0.34	0.00	0.09	0.33	0.33	0.22	0.00	0.22	0.16	0.16	0.16
Sat Flow, veh/h	1781	3647	0	1781	3353	249	3563	0	1585	531	1313	1585
Grp Volume(v), veh/h	147	991	0	133	363	374	681	0	203	250	0	17
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1826	1781	0	1585	1844	0	1585
Q Serve(g_s), s	7.6	24.0	0.0	6.9	16.2	16.2	17.5	0.0	10.8	12.4	0.0	0.9
Cycle Q Clear(g_c), s	7.6	24.0	0.0	6.9	16.2	16.2	17.5	0.0	10.8	12.4	0.0	0.9
Prop In Lane	1.00		0.00	1.00		0.14	1.00		1.00	0.29		1.00
Lane Grp Cap(c), veh/h	181	1212		163	589	605	774	0	344	294	0	253
V/C Ratio(X)	0.81	0.82		0.81	0.62	0.62	0.88	0.00	0.59	0.85	0.00	0.07
Avail Cap(c_a), veh/h	277	1563		172	676	695	842	0	375	373	0	321
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.5	28.4	0.0	42.1	26.5	26.5	35.7	0.0	33.2	38.6	0.0	33.7
Incr Delay (d2), s/veh	10.2	2.8	0.0	24.3	1.3	1.3	10.0	0.0	2.1	14.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	10.2	0.0	4.1	6.8	7.0	8.2	0.0	4.3	6.7	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	31.2	0.0	66.3	27.9	27.9	45.8	0.0	35.2	52.5	0.0	33.8
LnGrp LOS	D	C		E	C	C	D	A	D	D	A	C
Approach Vol, veh/h		1138			870			884			267	
Approach Delay, s/veh		33.8			33.7			43.4			51.3	
Approach LOS		C			C			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	13.1	36.7		19.5	14.1	35.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.3	9.1	41.5		19.1	14.7	35.9				
Max Q Clear Time (g_c+I1), s		19.5	8.9	26.0		14.4	9.6	18.2				
Green Ext Time (p_c), s		1.0	0.0	6.1		0.6	0.1	4.2				

Intersection Summary

HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

- User approved volume balancing among the lanes for turning movement.
- Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM
7: I-280 SB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	750	828	385	911	0	0	0	0	583	2	392
Future Volume (veh/h)	0	750	828	385	911	0	0	0	0	583	2	392
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	815	0	418	990	0				767	0	285
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1183		543	2020	0				979	0	436
Arrive On Green	0.00	0.33	0.00	0.16	0.57	0.00				0.27	0.00	0.27
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	815	0	418	990	0				767	0	285
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	11.4	0.0	6.7	9.6	0.0				11.4	0.0	9.1
Cycle Q Clear(g_c), s	0.0	11.4	0.0	6.7	9.6	0.0				11.4	0.0	9.1
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1183		543	2020	0				979	0	436
V/C Ratio(X)	0.00	0.69		0.77	0.49	0.00				0.78	0.00	0.65
Avail Cap(c_a), veh/h	0	2197		656	3150	0				1247	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.6	0.0	23.2	7.4	0.0				19.2	0.0	18.4
Incr Delay (d2), s/veh	0.0	0.7	0.0	4.6	0.2	0.0				2.6	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	0.0	2.8	2.6	0.0				4.3	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.3	0.0	27.8	7.6	0.0				21.8	0.0	20.2
LnGrp LOS	A	B		C	A	A				C	A	C
Approach Vol, veh/h		815			1408						1052	
Approach Delay, s/veh		17.3			13.6						21.4	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			13.5	23.6		20.3		37.1				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			10.9	35.5		20.1		50.9				
Max Q Clear Time (g_c+I1), s			8.7	13.4		13.4		11.6				
Green Ext Time (p_c), s			0.4	5.7		2.4		8.5				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC AM
8: Driveway & Hickey Blvd.

11/09/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1562	42	129	1081	0	26
Future Vol, veh/h	1562	42	129	1081	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1698	46	140	1175	0	28

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	872
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	294
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	294
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	18.5
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	294	-	-
HCM Lane V/C Ratio	0.096	-	-
HCM Control Delay (s)	18.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

HCM 6th Signalized Intersection Summary AM

9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶↷	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	90	670	41	365	323	427	57	236	556	358	170	88
Future Volume (veh/h)	90	670	41	365	323	427	57	236	556	358	170	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	107	798	26	406	359	95	66	271	459	416	198	5
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	815	358	409	966	430	559	1174	489	535	281	236
Arrive On Green	0.08	0.23	0.23	0.12	0.27	0.27	0.31	0.31	0.31	0.15	0.15	0.15
Sat Flow, veh/h	1781	3554	1560	3456	3554	1582	1781	3741	1557	3563	1870	1569
Grp Volume(v), veh/h	107	798	26	406	359	95	66	271	459	416	198	5
Grp Sat Flow(s),veh/h/ln	1781	1777	1560	1728	1777	1582	1781	1870	1557	1781	1870	1569
Q Serve(g_s), s	5.6	21.3	1.2	11.2	7.8	4.4	2.5	5.1	27.4	10.7	9.6	0.3
Cycle Q Clear(g_c), s	5.6	21.3	1.2	11.2	7.8	4.4	2.5	5.1	27.4	10.7	9.6	0.3
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	135	815	358	409	966	430	559	1174	489	535	281	236
V/C Ratio(X)	0.79	0.98	0.07	0.99	0.37	0.22	0.12	0.23	0.94	0.78	0.71	0.02
Avail Cap(c_a), veh/h	170	815	358	409	966	430	574	1206	502	671	352	296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	36.6	28.9	42.1	28.2	26.9	23.3	24.2	31.9	39.1	38.6	34.6
Incr Delay (d2), s/veh	18.1	26.4	0.1	42.6	0.2	0.3	0.1	0.1	25.4	4.6	4.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	11.9	0.5	7.1	3.3	1.7	1.1	2.3	13.3	5.0	4.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	63.0	28.9	84.7	28.4	27.2	23.4	24.3	57.3	43.6	43.2	34.6
LnGrp LOS	E	E	C	F	C	C	C	C	E	D	D	C
Approach Vol, veh/h		931			860			796			619	
Approach Delay, s/veh		61.9			54.8			43.3			43.4	
Approach LOS		E			D			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		34.5	15.8	26.4		18.8	11.7	30.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.8	11.3	21.9		18.0	9.1	24.1				
Max Q Clear Time (g_c+I1), s		29.4	13.2	23.3		12.7	7.6	9.8				
Green Ext Time (p_c), s		0.6	0.0	0.0		1.3	0.0	2.2				

Intersection Summary

HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary AM
10: Callan Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	188	675	60	17	369	71	85	293	34	68	133	164
Future Volume (veh/h)	188	675	60	17	369	71	85	293	34	68	133	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	204	734	65	19	410	79	90	312	36	74	145	178
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1075	95	41	614	117	124	408	47	112	184	226
Arrive On Green	0.14	0.33	0.33	0.02	0.21	0.21	0.07	0.25	0.25	0.06	0.24	0.24
Sat Flow, veh/h	1781	3295	292	1781	2974	568	1781	1646	190	1781	763	936
Grp Volume(v), veh/h	204	396	403	19	244	245	90	0	348	74	0	323
Grp Sat Flow(s),veh/h/ln	1781	1777	1809	1781	1777	1765	1781	0	1836	1781	0	1699
Q Serve(g_s), s	5.9	10.2	10.2	0.6	6.7	6.8	2.6	0.0	9.3	2.1	0.0	9.4
Cycle Q Clear(g_c), s	5.9	10.2	10.2	0.6	6.7	6.8	2.6	0.0	9.3	2.1	0.0	9.4
Prop In Lane	1.00		0.16	1.00		0.32	1.00		0.10	1.00		0.55
Lane Grp Cap(c), veh/h	255	580	590	41	367	364	124	0	455	112	0	410
V/C Ratio(X)	0.80	0.68	0.68	0.46	0.66	0.67	0.73	0.00	0.77	0.66	0.00	0.79
Avail Cap(c_a), veh/h	320	756	770	168	605	601	185	0	670	175	0	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	15.4	15.4	25.5	19.3	19.3	24.1	0.0	18.5	24.2	0.0	18.8
Incr Delay (d2), s/veh	11.0	1.7	1.7	7.9	2.1	2.2	7.9	0.0	3.1	6.6	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	3.7	3.8	0.3	2.6	2.7	1.3	0.0	3.9	1.0	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	17.1	17.1	33.4	21.4	21.5	32.1	0.0	21.6	30.8	0.0	22.9
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1003			508			438				397
Approach Delay, s/veh		20.3			21.9			23.7				24.4
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	17.6	5.7	21.8	8.2	17.3	12.1	15.4				
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	5.2	19.3	5.0	22.5	5.5	19.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	4.1	11.3	2.6	12.2	4.6	11.4	7.9	8.8				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.5	0.0	1.2	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				22.0								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary AM
 11: Hickey Blvd. & Campus Dr.

11/09/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	207	120	117	728	354	265
Future Volume (veh/h)	207	120	117	728	354	265
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
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	292	169	133	827	393	294
Peak Hour Factor	0.71	0.71	0.88	0.88	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	341	198	171	1732	565	418
Arrive On Green	0.32	0.32	0.10	0.49	0.29	0.29
Sat Flow, veh/h	1076	622	1781	3647	2018	1421
Grp Volume(v), veh/h	462	0	133	827	362	325
Grp Sat Flow(s),veh/h/ln	1702	0	1781	1777	1777	1569
Q Serve(g_s), s	11.7	0.0	3.4	7.2	8.3	8.5
Cycle Q Clear(g_c), s	11.7	0.0	3.4	7.2	8.3	8.5
Prop In Lane	0.63	0.37	1.00			0.91
Lane Grp Cap(c), veh/h	540	0	171	1732	522	461
V/C Ratio(X)	0.86	0.00	0.78	0.48	0.69	0.70
Avail Cap(c_a), veh/h	719	0	290	2426	751	663
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.8	0.0	20.4	7.9	14.5	14.5
Incr Delay (d2), s/veh	7.7	0.0	7.3	0.2	1.7	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	1.6	1.9	2.9	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.5	0.0	27.7	8.1	16.1	16.5
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	462			960	687	
Approach Delay, s/veh	22.5			10.8	16.3	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		27.0		19.1	8.9	18.1
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5		19.5	7.5	19.5
Max Q Clear Time (g_c+I1), s		9.2		13.7	5.4	10.5
Green Ext Time (p_c), s		5.8		0.9	0.1	2.9

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis AM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	664	455	180	63	188	257	111	910	110	214	453	321	
Future Volume (vph)	664	455	180	63	188	257	111	910	110	214	453	321	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1752	1583		3496	1556	1770	3539	1561	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.70	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1752	1583		2490	1556	1770	3539	1561	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	685	469	186	73	219	299	128	1046	126	240	509	361	
RTOR Reduction (vph)	0	0	67	0	0	165	0	0	66	0	0	251	
Lane Group Flow (vph)	569	585	119	0	292	134	128	1046	60	240	509	110	
Confl. Peds. (#/hr)	2						2		1	1			
Confl. Bikes (#/hr)							1						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases			4	8		8			2			6	
Actuated Green, G (s)	34.5	34.5	34.5		17.0	17.0	13.2	36.8	36.8	12.5	36.1	36.1	
Effective Green, g (s)	34.5	34.5	34.5		17.0	17.0	13.2	36.8	36.8	12.5	36.1	36.1	
Actuated g/C Ratio	0.29	0.29	0.29		0.14	0.14	0.11	0.31	0.31	0.11	0.30	0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	488	508	459		356	222	196	1096	483	186	1075	481	
v/s Ratio Prot	c0.34	0.33					0.07	c0.30		c0.14	0.14		
v/s Ratio Perm			0.07		c0.12	0.09			0.04			0.07	
v/c Ratio	1.17	1.15	0.26		0.82	0.61	0.65	0.95	0.13	1.29	0.47	0.23	
Uniform Delay, d1	42.1	42.1	32.3		49.4	47.8	50.6	40.2	29.4	53.1	33.6	30.9	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	95.1	88.9	0.3		14.0	4.6	7.6	17.2	0.1	164.8	0.3	0.2	
Delay (s)	137.2	131.0	32.6		63.4	52.4	58.2	57.4	29.6	217.9	34.0	31.2	
Level of Service	F	F	C		E	D	E	E	C	F	C	C	
Approach Delay (s)		120.0			57.8			54.8			72.8		
Approach LOS		F			E			D			E		
Intersection Summary													
HCM 2000 Control Delay			79.9									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.05										
Actuated Cycle Length (s)			118.8									Sum of lost time (s)	18.0
Intersection Capacity Utilization			89.9%									ICU Level of Service	E
Analysis Period (min)			15										

c Critical Lane Group

Intersection

Intersection Delay, s/veh30.8

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	194	17	17	7	23	56	24	404	16	86	246	24
Future Vol, veh/h	194	17	17	7	23	56	24	404	16	86	246	24
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.86	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	226	20	20	9	31	75	28	470	19	105	300	29
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	19	13	42.5	28.9
HCM LOS	C	B	E	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	85%	8%	24%
Vol Thru, %	91%	7%	27%	69%
Vol Right, %	4%	7%	65%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	444	228	86	356
LT Vol	24	194	7	86
Through Vol	404	17	23	246
RT Vol	16	17	56	24
Lane Flow Rate	516	265	115	434
Geometry Grp	1	1	1	1
Degree of Util (X)	0.9	0.546	0.241	0.778
Departure Headway (Hd)	6.389	7.409	7.555	6.567
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	573	490	477	556
Service Time	4.389	5.409	5.573	4.567
HCM Lane V/C Ratio	0.901	0.541	0.241	0.781
HCM Control Delay	42.5	19	13	28.9
HCM Lane LOS	E	C	B	D
HCM 95th-tile Q	10.7	3.2	0.9	7.2

HCM 6th Signalized Intersection Summary AM

14: Gellert Blvd. & Serramonte Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	333	212	411	246	171	226	141	294	149	179	15
Future Volume (veh/h)	66	333	212	411	246	171	226	141	294	149	179	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	69	347	221	478	286	0	260	162	338	184	221	19
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	705	481	600	584		377	378	1186	303	312	27
Arrive On Green	0.06	0.20	0.20	0.17	0.31	0.00	0.11	0.20	0.20	0.09	0.18	0.18
Sat Flow, veh/h	1781	3554	1578	3456	1870	2790	3563	1870	3147	3456	1695	146
Grp Volume(v), veh/h	69	347	221	478	286	0	260	162	338	184	0	240
Grp Sat Flow(s),veh/h/ln	1781	1777	1578	1728	1870	1395	1781	1870	1573	1728	0	1841
Q Serve(g_s), s	2.0	4.6	6.0	7.1	6.6	0.0	3.7	4.0	4.0	2.7	0.0	6.5
Cycle Q Clear(g_c), s	2.0	4.6	6.0	7.1	6.6	0.0	3.7	4.0	4.0	2.7	0.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	107	705	481	600	584		377	378	1186	303	0	338
V/C Ratio(X)	0.64	0.49	0.46	0.80	0.49		0.69	0.43	0.29	0.61	0.00	0.71
Avail Cap(c_a), veh/h	194	1202	702	643	777		395	668	1673	331	0	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.5	18.9	15.0	21.1	14.9	0.0	22.9	18.6	11.6	23.4	0.0	20.4
Incr Delay (d2), s/veh	6.3	0.5	0.7	6.6	0.6	0.0	4.7	0.8	0.1	2.7	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.8	2.0	3.1	2.6	0.0	1.7	1.7	1.2	1.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.8	19.5	15.7	27.7	15.5	0.0	27.7	19.3	11.8	26.1	0.0	23.1
LnGrp LOS	C	B	B	C	B		C	B	B	C	A	C
Approach Vol, veh/h		637			764			760				424
Approach Delay, s/veh		19.4			23.1			18.8				24.4
Approach LOS		B			C			B				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	15.3	13.7	15.1	10.1	14.3	7.7	21.1				
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	5.1	19.0	9.9	18.0	5.9	18.2	5.8	22.1				
Max Q Clear Time (g_c+I1), s	4.7	6.0	9.1	8.0	5.7	8.5	4.0	8.6				
Green Ext Time (p_c), s	0.0	1.9	0.2	2.2	0.0	0.9	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM

15: Serramonte Blvd. & I-280 SB Ramps

11/09/2022

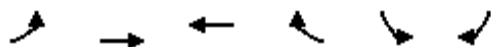


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↘↘	↘↘
Traffic Volume (veh/h)	0	741	360	0	991	502
Future Volume (veh/h)	0	741	360	0	991	502
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	872	404	0	1194	605
Peak Hour Factor	0.85	0.85	0.89	0.89	0.83	0.83
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1202	1727	0	1558	1258
Arrive On Green	0.00	0.34	0.34	0.00	0.45	0.45
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	872	404	0	1194	605
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	9.2	2.4	0.0	12.4	6.5
Cycle Q Clear(g_c), s	0.0	9.2	2.4	0.0	12.4	6.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1202	1727	0	1558	1258
V/C Ratio(X)	0.00	0.73	0.23	0.00	0.77	0.48
Avail Cap(c_a), veh/h	0	1499	2154	0	1862	1504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	10.1	0.0	9.8	8.2
Incr Delay (d2), s/veh	0.0	1.3	0.1	0.0	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.7	0.0	3.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	13.7	10.2	0.0	11.5	8.5
LnGrp LOS	A	B	B	A	B	A
Approach Vol, veh/h		872	404		1799	
Approach Delay, s/veh		13.7	10.2		10.5	
Approach LOS		B	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				18.9	23.7	18.9
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s				11.2	14.4	4.4
Green Ext Time (p_c), s				3.2	4.9	2.2
Intersection Summary						
HCM 6th Ctrl Delay			11.4			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary AM

16: Serramonte Blvd. & I-280 NB Ramps

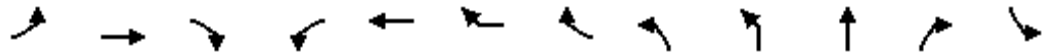
11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶↶	↶↶	↶↶			
Traffic Volume (veh/h)	309	1430	358	2	0	0
Future Volume (veh/h)	309	1430	358	2	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	372	1723	442	2		
Peak Hour Factor	0.83	0.83	0.81	0.81		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	634	2986	1803	8		
Arrive On Green	0.18	0.84	0.50	0.50		
Sat Flow, veh/h	3456	3647	3721	16		
Grp Volume(v), veh/h	372	1723	216	228		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1867		
Q Serve(g_s), s	2.8	4.2	2.0	2.0		
Cycle Q Clear(g_c), s	2.8	4.2	2.0	2.0		
Prop In Lane	1.00			0.01		
Lane Grp Cap(c), veh/h	634	2986	883	928		
V/C Ratio(X)	0.59	0.58	0.25	0.25		
Avail Cap(c_a), veh/h	1289	4480	1294	1359		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.5	0.7	4.1	4.1		
Incr Delay (d2), s/veh	0.9	0.2	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.1	0.3	0.3		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.4	0.9	4.2	4.2		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2095	444			
Approach Delay, s/veh		2.7	4.2			
Approach LOS		A	A			
Timer - Assigned Phs			4		7	8
Phs Duration (G+Y+Rc), s			28.2		9.7	18.5
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			35.5		10.5	20.5
Max Q Clear Time (g_c+I1), s			6.2		4.8	4.0
Green Ext Time (p_c), s			17.4		0.7	2.4
Intersection Summary						
HCM 6th Ctrl Delay			3.0			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	342	801	284	229	214	385	102	60	464	421	280	118
Future Volume (vph)	342	801	284	229	214	385	102	60	464	421	280	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	1770	3121	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	1770	3121	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	372	871	309	249	233	418	111	65	504	458	304	128
RTOR Reduction (vph)	0	0	217	0	0	124	0	0	0	0	172	0
Lane Group Flow (vph)	372	871	92	249	496	142	0	0	569	458	132	128
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Effective Green, g (s)	5.0	17.8	17.8	5.0	17.8	17.8			5.5	14.3	14.3	5.0
Actuated g/C Ratio	0.08	0.30	0.30	0.08	0.30	0.30			0.09	0.24	0.24	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	285	1048	468	147	924	426			240	842	376	147
v/s Ratio Prot	0.11	c0.25		c0.14	0.16					c0.13		0.07
v/s Ratio Perm			0.06			0.10			c0.22		0.08	
v/c Ratio	1.31	0.83	0.20	1.69	0.54	0.33			2.37	0.54	0.35	0.87
Uniform Delay, d1	27.6	19.7	15.8	27.6	17.7	16.5			27.3	20.0	19.0	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	160.5	5.7	0.2	339.7	0.6	0.5			629.6	0.7	0.6	39.1
Delay (s)	188.0	25.5	16.0	367.3	18.3	17.0			656.9	20.8	19.6	66.3
Level of Service	F	C	B	F	B	B			F	C	B	E
Approach Delay (s)		62.6			103.9					292.4		
Approach LOS		E			F					F		

Intersection Summary

HCM 2000 Control Delay	133.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	60.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	280	91	133
Future Volume (vph)	280	91	133
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3409		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3409		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	304	99	145
RTOR Reduction (vph)	0	0	112
Lane Group Flow (vph)	403	0	33
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	13.8		13.8
Effective Green, g (s)	13.8		13.8
Actuated g/C Ratio	0.23		0.23
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	782		363
v/s Ratio Prot	0.12		
v/s Ratio Perm			0.02
v/c Ratio	0.52		0.09
Uniform Delay, d1	20.2		18.2
Progression Factor	1.00		1.00
Incremental Delay, d2	0.6		0.1
Delay (s)	20.8		18.3
Level of Service	C		B
Approach Delay (s)	28.9		
Approach LOS	C		
Intersection Summary			

HCM 6th Signalized Intersection Summary AM

9: Gellert Blvd. & Hickey Blvd. MITIGATED

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑↑	↗	↵	↕↗	↗	↵	↕↑	↗
Traffic Volume (veh/h)	90	670	41	365	323	427	57	236	556	358	170	88
Future Volume (veh/h)	90	670	41	365	323	427	57	236	556	358	170	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	107	798	26	406	359	95	66	212	498	416	198	5
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	933	410	494	1168	520	362	380	623	576	302	254
Arrive On Green	0.08	0.26	0.26	0.14	0.33	0.33	0.20	0.20	0.20	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1561	3456	3554	1582	1781	1870	3063	3563	1870	1570
Grp Volume(v), veh/h	107	798	26	406	359	95	66	212	498	416	198	5
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1728	1777	1582	1781	1870	1531	1781	1870	1570
Q Serve(g_s), s	4.6	16.7	1.0	8.9	5.9	3.4	2.4	8.0	12.1	8.7	7.8	0.2
Cycle Q Clear(g_c), s	4.6	16.7	1.0	8.9	5.9	3.4	2.4	8.0	12.1	8.7	7.8	0.2
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	137	933	410	494	1168	520	362	380	623	576	302	254
V/C Ratio(X)	0.78	0.86	0.06	0.82	0.31	0.18	0.18	0.56	0.80	0.72	0.65	0.02
Avail Cap(c_a), veh/h	193	1020	448	551	1201	535	432	453	742	818	430	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	27.5	21.7	32.6	19.6	18.8	25.8	28.1	29.7	31.2	30.8	27.6
Incr Delay (d2), s/veh	12.6	6.8	0.1	8.9	0.1	0.2	0.2	1.3	5.3	1.8	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	7.6	0.3	4.2	2.3	1.2	1.0	3.6	4.7	3.8	3.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.2	34.3	21.7	41.5	19.8	19.0	26.1	29.3	35.0	33.0	33.2	27.7
LnGrp LOS	D	C	C	D	B	B	C	C	C	C	C	C
Approach Vol, veh/h		931			860			776			619	
Approach Delay, s/veh		35.6			30.0			32.7			33.0	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.4	15.7	25.1		17.2	10.5	30.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	12.5	22.5		18.0	8.5	26.5				
Max Q Clear Time (g_c+I1), s		14.1	10.9	18.7		10.7	6.6	7.9				
Green Ext Time (p_c), s		1.7	0.3	1.8		1.7	0.0	2.4				

Intersection Summary

HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis 1

2: Skyline Blvd. & Hickey Blvd. MITIGATED AM

11/08/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	664	455	180	63	188	257	111	910	110	214	453	321	
Future Volume (vph)	664	455	180	63	188	257	111	910	110	214	453	321	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1752	1583		3496	1554	1770	3539	1560	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.70	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1752	1583		2481	1554	1770	3539	1560	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	685	469	186	73	219	299	128	1046	126	240	509	361	
RTOR Reduction (vph)	0	0	51	0	0	190	0	0	54	0	0	243	
Lane Group Flow (vph)	569	585	135	0	292	109	128	1046	72	240	509	118	
Confl. Peds. (#/hr)	2					2			1	1			
Confl. Bikes (#/hr)						1							
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases			4	8		8			2			6	
Actuated Green, G (s)	49.1	49.1	49.1		18.5	18.5	15.5	44.2	44.2	20.2	48.9	48.9	
Effective Green, g (s)	49.1	49.1	49.1		18.5	18.5	15.5	44.2	44.2	20.2	48.9	48.9	
Actuated g/C Ratio	0.33	0.33	0.33		0.12	0.12	0.10	0.29	0.29	0.13	0.33	0.33	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	550	573	518		305	191	182	1042	459	238	1153	516	
v/s Ratio Prot	c0.34	0.33					0.07	c0.30		c0.14	0.14		
v/s Ratio Perm			0.09		c0.12	0.07			0.05			0.07	
v/c Ratio	1.03	1.02	0.26		0.96	0.57	0.70	1.00	0.16	1.01	0.44	0.23	
Uniform Delay, d1	50.5	50.5	37.1		65.4	62.0	65.0	52.9	39.1	64.9	39.8	36.8	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	47.6	43.0	0.3		39.7	3.9	11.6	28.8	0.2	60.5	0.3	0.2	
Delay (s)	98.0	93.4	37.4		105.1	65.9	76.7	81.7	39.3	125.4	40.1	37.0	
Level of Service	F	F	D		F	E	E	F	D	F	D	D	
Approach Delay (s)		87.6			85.2			77.1			57.5		
Approach LOS		F			F			E			E		
Intersection Summary													
HCM 2000 Control Delay			76.4									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.01										
Actuated Cycle Length (s)			150.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			89.9%									ICU Level of Service	E
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th TWSC PM
1: Gellert Blvd. & Serravista Ave.

11/09/2022

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	8	152	483	14	173	734
Future Vol, veh/h	8	152	483	14	173	734
Conflicting Peds, #/hr	5	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	190	519	15	188	798

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1704	525	0	0	540	0
Stage 1	525	-	-	-	-	-
Stage 2	1179	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	101	552	-	-	1028	-
Stage 1	593	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	82	549	-	-	1022	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	237	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	82	549	1022
HCM Lane V/C Ratio	-	-	0.122	0.346	0.184
HCM Control Delay (s)	-	-	54.9	15	9.3
HCM Lane LOS	-	-	F	C	A
HCM 95th %tile Q(veh)	-	-	0.4	1.5	0.7

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	102	0	2	137	9	0
Future Vol, veh/h	102	0	2	137	9	0
Conflicting Peds, #/hr	0	1	1	0	4	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	113	0	3	173	12	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	114	0	297
Stage 1	-	-	-	-	114
Stage 2	-	-	-	-	183
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1475	-	694
Stage 1	-	-	-	-	911
Stage 2	-	-	-	-	848
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1474	-	689
Mov Cap-2 Maneuver	-	-	-	-	689
Stage 1	-	-	-	-	910
Stage 2	-	-	-	-	843

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	689	-	-	1474	-
HCM Lane V/C Ratio	0.017	-	-	0.002	-
HCM Control Delay (s)	10.3	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	17	0	0	5	7	59	1	11	77	14
Future Vol, veh/h	3	1	17	0	0	5	7	59	1	11	77	14
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	2	2	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	84	84	84	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	21	0	0	10	8	70	1	12	87	16

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	216	213	101	220	221	73	108	0	0	73	0	0
Stage 1	124	124	-	89	89	-	-	-	-	-	-	-
Stage 2	92	89	-	131	132	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	740	684	954	736	678	989	1483	-	-	1527	-	-
Stage 1	880	793	-	918	821	-	-	-	-	-	-	-
Stage 2	915	821	-	873	787	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	722	670	949	709	664	987	1476	-	-	1524	-	-
Mov Cap-2 Maneuver	722	670	-	709	664	-	-	-	-	-	-	-
Stage 1	870	783	-	911	814	-	-	-	-	-	-	-
Stage 2	900	814	-	844	777	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.2		8.7		0.8		0.8	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1476	-	-	891	987	1524	-
HCM Lane V/C Ratio	0.006	-	-	0.029	0.01	0.008	-
HCM Control Delay (s)	7.5	0	-	9.2	8.7	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	18	92	68	3	14	103
Future Vol, veh/h	18	92	68	3	14	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	100	74	3	15	112

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	77	0	-	0	216 76
Stage 1	-	-	-	-	76 -
Stage 2	-	-	-	-	140 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1522	-	-	-	772 985
Stage 1	-	-	-	-	947 -
Stage 2	-	-	-	-	887 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1522	-	-	-	761 985
Mov Cap-2 Maneuver	-	-	-	-	761 -
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	887 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1522	-	-	-	951
HCM Lane V/C Ratio	0.013	-	-	-	0.134
HCM Control Delay (s)	7.4	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5

HCM 6th Signalized Intersection Summary PM

5: Junipero Serra Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	806	156	136	525	649	126	352	98	284	434	227
Future Volume (veh/h)	294	806	156	136	525	649	126	352	98	284	434	227
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	303	831	0	145	559	0	138	387	0	312	477	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1598		305	691		422	1454		466	1454	
Arrive On Green	0.43	0.43	0.00	0.43	0.43	0.00	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	850	3741	0	407	1617	1585	917	3647	0	995	3554	1585
Grp Volume(v), veh/h	303	831	0	145	559	0	138	387	0	312	477	0
Grp Sat Flow(s),veh/h/ln	850	1870	0	407	1617	1585	917	1777	0	995	1777	1585
Q Serve(g_s), s	6.9	9.0	0.0	11.4	16.6	0.0	6.7	4.0	0.0	16.6	5.0	0.0
Cycle Q Clear(g_c), s	23.5	9.0	0.0	20.4	16.6	0.0	11.7	4.0	0.0	20.6	5.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1598		305	691		422	1454		466	1454	
V/C Ratio(X)	1.28	0.52		0.48	0.81		0.33	0.27		0.67	0.33	
Avail Cap(c_a), veh/h	237	1598		305	691		422	1454		466	1454	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.0	11.6	0.0	19.1	13.8	0.0	15.1	10.8	0.0	17.6	11.1	0.0
Incr Delay (d2), s/veh	153.9	0.3	0.0	1.1	7.1	0.0	0.4	0.1	0.0	3.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	3.1	0.0	1.6	6.2	0.0	1.2	1.3	0.0	3.6	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	179.9	11.9	0.0	20.3	20.9	0.0	15.5	10.9	0.0	21.3	11.2	0.0
LnGrp LOS	F	B		C	C		B	B		C	B	
Approach Vol, veh/h		1134			704			525			789	
Approach Delay, s/veh		56.8			20.8			12.1			15.2	
Approach LOS		E			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		28.0		27.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		23.5		22.5		23.5				
Max Q Clear Time (g_c+I1), s		13.7		25.5		22.6		22.4				
Green Ext Time (p_c), s		2.0		0.0		0.0		0.6				

Intersection Summary

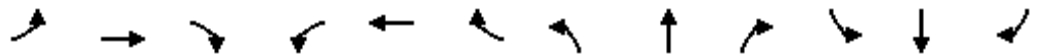
HCM 6th Ctrl Delay	30.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↕		↰	↕		↰	↕	↰		↕	↰
Traffic Volume (veh/h)	182	783	259	209	738	53	770	90	422	60	90	100
Future Volume (veh/h)	182	783	259	209	738	53	770	90	422	60	90	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		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	198	851	0	218	769	51	907	0	144	66	99	6
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1022		249	1009	67	1038	0	462	81	122	173
Arrive On Green	0.13	0.29	0.00	0.14	0.30	0.30	0.29	0.00	0.29	0.11	0.11	0.11
Sat Flow, veh/h	1781	3647	0	1781	3381	224	3563	0	1585	733	1100	1563
Grp Volume(v), veh/h	198	851	0	218	404	416	907	0	144	165	0	6
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1829	1781	0	1585	1834	0	1563
Q Serve(g_s), s	11.5	23.7	0.0	12.7	21.8	21.8	25.5	0.0	7.5	9.3	0.0	0.4
Cycle Q Clear(g_c), s	11.5	23.7	0.0	12.7	21.8	21.8	25.5	0.0	7.5	9.3	0.0	0.4
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	0.40		1.00
Lane Grp Cap(c), veh/h	230	1022		249	530	545	1038	0	462	203	0	173
V/C Ratio(X)	0.86	0.83		0.88	0.76	0.76	0.87	0.00	0.31	0.81	0.00	0.03
Avail Cap(c_a), veh/h	292	1297		280	637	655	1310	0	583	315	0	268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.0	35.2	0.0	44.5	33.6	33.6	35.5	0.0	29.1	45.9	0.0	41.9
Incr Delay (d2), s/veh	18.4	3.8	0.0	23.4	4.5	4.4	5.6	0.0	0.4	9.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	10.5	0.0	7.1	9.8	10.1	11.3	0.0	2.8	4.7	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	39.0	0.0	67.8	38.1	38.0	41.2	0.0	29.5	54.8	0.0	42.0
LnGrp LOS	E	D		E	D	D	D	A	C	D	A	D
Approach Vol, veh/h		1049			1038			1051				171
Approach Delay, s/veh		43.6			44.3			39.6				54.4
Approach LOS		D			D			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		35.2	19.2	34.8		16.2	18.1	36.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		27.5	14.7	25.7		11.3	13.5	23.8				
Green Ext Time (p_c), s		3.2	0.1	4.7		0.5	0.2	4.3				

Intersection Summary

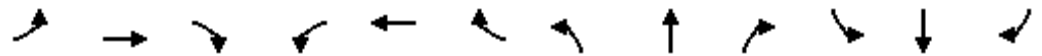
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM
7: I-280 SB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	656	725	361	1297	0	0	0	0	552	5	416
Future Volume (veh/h)	0	656	725	361	1297	0	0	0	0	552	5	416
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	763	0	376	1351	0				751	0	306
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1108		510	1938	0				1006	0	447
Arrive On Green	0.00	0.31	0.00	0.15	0.55	0.00				0.28	0.00	0.28
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	763	0	376	1351	0				751	0	306
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	9.8	0.0	5.4	14.6	0.0				10.0	0.0	9.0
Cycle Q Clear(g_c), s	0.0	9.8	0.0	5.4	14.6	0.0				10.0	0.0	9.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1108		510	1938	0				1006	0	447
V/C Ratio(X)	0.00	0.69		0.74	0.70	0.00				0.75	0.00	0.68
Avail Cap(c_a), veh/h	0	1803		628	2755	0				1398	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.8	0.0	21.3	8.7	0.0				17.1	0.0	16.7
Incr Delay (d2), s/veh	0.0	0.8	0.0	3.6	0.5	0.0				1.4	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	3.5	0.0	2.2	3.9	0.0				3.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.5	0.0	24.9	9.2	0.0				18.5	0.0	18.5
LnGrp LOS	A	B		C	A	A				B	A	B
Approach Vol, veh/h		763			1727						1057	
Approach Delay, s/veh		16.5			12.6						18.5	
Approach LOS		B			B						B	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			12.2	20.8		19.2		33.0				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			9.5	26.5		20.5		40.5				
Max Q Clear Time (g_c+I1), s			7.4	11.8		12.0		16.6				
Green Ext Time (p_c), s			0.3	4.5		2.7		11.0				

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC PM
8: Driveway & Hickey Blvd.

11/14/2022

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1241	8	24	1653	0	154
Future Vol, veh/h	1241	8	24	1653	0	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1306	8	25	1740	0	162

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	657
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	407
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	407
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB		NB	
HCM Control Delay, s	0		19.6	
HCM LOS			C	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	407	-	-
HCM Lane V/C Ratio	0.398	-	-
HCM Control Delay (s)	19.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.9	-	-

HCM 6th Signalized Intersection Summary PM

9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	394	28	564	422	675	109	282	298	555	315	196
Future Volume (veh/h)	119	394	28	564	422	675	109	282	298	555	315	196
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		0.99	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	499	0	620	464	343	120	310	59	617	350	29
Peak Hour Factor	0.79	0.79	0.79	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	679	303	711	1045	461	259	545	223	798	419	347
Arrive On Green	0.10	0.19	0.00	0.21	0.29	0.29	0.15	0.15	0.15	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3554	1566	1781	3741	1530	3563	1870	1549
Grp Volume(v), veh/h	151	499	0	620	464	343	120	310	59	617	350	29
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1566	1781	1870	1530	1781	1870	1549
Q Serve(g_s), s	6.4	10.2	0.0	13.4	8.2	15.2	4.8	5.9	2.6	12.5	13.8	1.1
Cycle Q Clear(g_c), s	6.4	10.2	0.0	13.4	8.2	15.2	4.8	5.9	2.6	12.5	13.8	1.1
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	183	679	303	711	1045	461	259	545	223	798	419	347
V/C Ratio(X)	0.83	0.73	0.00	0.87	0.44	0.74	0.46	0.57	0.26	0.77	0.84	0.08
Avail Cap(c_a), veh/h	183	831	370	763	1251	551	428	899	367	856	449	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.9	29.3	0.0	29.6	22.1	24.6	30.1	30.6	29.2	28.1	28.5	23.6
Incr Delay (d2), s/veh	25.7	2.7	0.0	10.4	0.3	4.5	1.3	0.9	0.6	4.2	12.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	4.4	0.0	6.3	3.2	5.8	2.1	2.7	1.0	5.6	7.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	32.0	0.0	40.0	22.4	29.0	31.4	31.6	29.9	32.2	40.8	23.7
LnGrp LOS	E	C	A	D	C	C	C	C	C	C	D	C
Approach Vol, veh/h		650			1427			489			996	
Approach Delay, s/veh		38.4			31.6			31.3			35.0	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.7	20.3	19.2		21.7	12.4	27.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.0	18.0		18.5	7.9	27.1				
Max Q Clear Time (g_c+I1), s		7.9	15.4	12.2		15.8	8.4	17.2				
Green Ext Time (p_c), s		1.9	0.5	1.6		1.3	0.0	3.1				

Intersection Summary

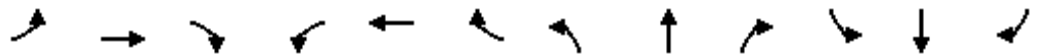
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary PM
 10: Callan Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	144	431	100	68	557	129	52	182	34	41	207	192
Future Volume (veh/h)	144	431	100	68	557	129	52	182	34	41	207	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	164	490	114	75	612	142	61	214	40	44	220	204
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.85	0.85	0.85	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	908	210	104	745	172	93	449	84	76	251	233
Arrive On Green	0.12	0.32	0.32	0.06	0.26	0.26	0.05	0.29	0.29	0.04	0.28	0.28
Sat Flow, veh/h	1781	2859	661	1781	2857	662	1781	1528	286	1781	885	820
Grp Volume(v), veh/h	164	303	301	75	380	374	61	0	254	44	0	424
Grp Sat Flow(s),veh/h/ln	1781	1777	1744	1781	1777	1742	1781	0	1813	1781	0	1705
Q Serve(g_s), s	5.6	8.8	8.9	2.6	12.6	12.6	2.1	0.0	7.2	1.5	0.0	14.8
Cycle Q Clear(g_c), s	5.6	8.8	8.9	2.6	12.6	12.6	2.1	0.0	7.2	1.5	0.0	14.8
Prop In Lane	1.00		0.38	1.00		0.38	1.00		0.16	1.00		0.48
Lane Grp Cap(c), veh/h	205	564	554	104	463	454	93	0	533	76	0	485
V/C Ratio(X)	0.80	0.54	0.54	0.72	0.82	0.82	0.66	0.00	0.48	0.58	0.00	0.87
Avail Cap(c_a), veh/h	242	564	554	205	511	501	142	0	591	145	0	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	17.6	17.6	29.0	21.8	21.8	29.1	0.0	18.1	29.4	0.0	21.3
Incr Delay (d2), s/veh	14.8	1.0	1.1	9.1	9.5	9.9	7.6	0.0	0.7	6.8	0.0	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.4	3.3	1.3	5.9	5.9	1.1	0.0	2.9	0.8	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	18.6	18.7	38.1	31.3	31.7	36.7	0.0	18.8	36.1	0.0	34.4
LnGrp LOS	D	B	B	D	C	C	D	A	B	D	A	C
Approach Vol, veh/h		768			829			315				468
Approach Delay, s/veh		23.6			32.1			22.3				34.6
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	22.9	8.1	24.4	7.8	22.3	11.7	20.8				
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	5.1	20.4	7.2	19.3	5.0	20.5	8.5	18.0				
Max Q Clear Time (g_c+I1), s	3.5	9.2	4.6	10.9	4.1	16.8	7.6	14.6				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.3	0.0	0.9	0.0	1.5				
Intersection Summary												
HCM 6th Ctrl Delay				28.5								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary PM
11: Hickey Blvd. & Campus Dr.

11/09/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	150	60	517	671	135
Future Volume (veh/h)	86	150	60	517	671	135
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.99
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	109	190	65	556	737	148
Peak Hour Factor	0.79	0.79	0.93	0.93	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	141	245	115	1908	1056	212
Arrive On Green	0.24	0.24	0.06	0.54	0.36	0.36
Sat Flow, veh/h	598	1042	1781	3647	3036	591
Grp Volume(v), veh/h	300	0	65	556	445	440
Grp Sat Flow(s),veh/h/ln	1645	0	1781	1777	1777	1756
Q Serve(g_s), s	6.7	0.0	1.4	3.4	8.5	8.5
Cycle Q Clear(g_c), s	6.7	0.0	1.4	3.4	8.5	8.5
Prop In Lane	0.36	0.63	1.00			0.34
Lane Grp Cap(c), veh/h	388	0	115	1908	637	630
V/C Ratio(X)	0.77	0.00	0.57	0.29	0.70	0.70
Avail Cap(c_a), veh/h	748	0	230	2514	826	817
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	14.1	0.0	18.0	5.0	10.9	10.9
Incr Delay (d2), s/veh	3.3	0.0	4.3	0.1	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.6	0.7	2.7	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	0.0	22.3	5.1	12.6	12.7
LnGrp LOS	B	A	C	A	B	B
Approach Vol, veh/h	300			621	885	
Approach Delay, s/veh	17.5			6.9	12.7	
Approach LOS	B			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		25.8		13.8	7.1	18.7
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.1	18.4
Max Q Clear Time (g_c+I1), s		5.4		8.7	3.4	10.5
Green Ext Time (p_c), s		3.7		0.7	0.0	3.4

Intersection Summary

HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B
























Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis PM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	356	284	142	130	340	275	179	573	89	208	623	653	
Future Volume (vph)	356	284	142	130	340	275	179	573	89	208	623	653	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1758	1583		3491	1548	1770	3539	1583	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.75	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1758	1583		2659	1548	1770	3539	1583	1770	3539	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	387	309	154	137	358	289	188	603	94	219	656	687	
RTOR Reduction (vph)	0	0	100	0	0	210	0	0	73	0	0	370	
Lane Group Flow (vph)	341	355	54	0	495	79	188	603	21	219	656	317	
Confl. Peds. (#/hr)	7					7							
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases			4	8		8			2			6	
Actuated Green, G (s)	18.5	18.5	18.5		19.9	19.9	10.1	19.2	19.2	11.9	21.0	21.0	
Effective Green, g (s)	18.5	18.5	18.5		19.9	19.9	10.1	19.2	19.2	11.9	21.0	21.0	
Actuated g/C Ratio	0.21	0.21	0.21		0.23	0.23	0.12	0.22	0.22	0.14	0.24	0.24	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	355	371	334		604	352	204	776	347	240	849	379	
v/s Ratio Prot	c0.20	0.20					0.11	0.17		c0.12	0.19		
v/s Ratio Perm			0.03		c0.19	0.05			0.01			c0.20	
v/c Ratio	0.96	0.96	0.16		0.82	0.22	0.92	0.78	0.06	0.91	0.77	0.84	
Uniform Delay, d1	34.1	34.1	28.2		32.1	27.5	38.3	32.1	27.0	37.3	31.0	31.6	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	37.3	35.2	0.2		8.5	0.3	41.5	4.9	0.1	35.3	4.4	14.7	
Delay (s)	71.4	69.3	28.4		40.6	27.8	79.8	37.1	27.1	72.6	35.4	46.3	
Level of Service	E	E	C		D	C	E	D	C	E	D	D	
Approach Delay (s)		62.7			35.9			45.1			45.4		
Approach LOS		E			D			D			D		
Intersection Summary													
HCM 2000 Control Delay			47.1									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.90										
Actuated Cycle Length (s)			87.5									Sum of lost time (s)	18.0
Intersection Capacity Utilization			75.2%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Intersection

Intersection Delay, s/veh 34.8

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	98	14	21	14	14	24	35	245	9	163	430	22
Future Vol, veh/h	98	14	21	14	14	24	35	245	9	163	430	22
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.87	0.87	0.87	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	17	26	17	17	29	40	282	10	177	467	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.8	10.9	15.1	52.3
HCM LOS	B	B	C	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	74%	27%	27%
Vol Thru, %	85%	11%	27%	70%
Vol Right, %	3%	16%	46%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	289	133	52	615
LT Vol	35	98	14	163
Through Vol	245	14	14	430
RT Vol	9	21	24	22
Lane Flow Rate	332	164	63	668
Geometry Grp	1	1	1	1
Degree of Util (X)	0.527	0.307	0.122	0.979
Departure Headway (Hd)	5.707	6.727	6.91	5.274
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	628	530	522	682
Service Time	3.789	4.827	4.91	3.338
HCM Lane V/C Ratio	0.529	0.309	0.121	0.979
HCM Control Delay	15.1	12.8	10.9	52.3
HCM Lane LOS	C	B	B	F
HCM 95th-tile Q	3.1	1.3	0.4	14.9

HCM 6th Signalized Intersection Summary PM

14: Gellert Blvd. & Serramonte Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑	↗↗	↵↗	↑↗	↗	↵↗	↗	↗
Traffic Volume (veh/h)	64	411	289	556	366	575	354	301	608	502	309	65
Future Volume (veh/h)	64	411	289	556	366	575	354	301	608	502	309	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	472	332	567	373	0	385	327	661	534	329	69
Peak Hour Factor	0.87	0.87	0.87	0.98	0.98	0.98	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	95	738	534	652	641		469	396	1231	622	387	81
Arrive On Green	0.05	0.21	0.21	0.19	0.34	0.00	0.13	0.21	0.21	0.18	0.26	0.26
Sat Flow, veh/h	1781	3554	1564	3456	1870	2790	3563	1870	2990	3456	1491	313
Grp Volume(v), veh/h	74	472	332	567	373	0	385	327	661	534	0	398
Grp Sat Flow(s),veh/h/ln	1781	1777	1564	1728	1870	1395	1781	1870	1495	1728	0	1804
Q Serve(g_s), s	3.5	10.3	15.1	13.5	13.9	0.0	8.9	14.2	14.4	12.7	0.0	17.8
Cycle Q Clear(g_c), s	3.5	10.3	15.1	13.5	13.9	0.0	8.9	14.2	14.4	12.7	0.0	17.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	95	738	534	652	641		469	396	1231	622	0	469
V/C Ratio(X)	0.78	0.64	0.62	0.87	0.58		0.82	0.83	0.54	0.86	0.00	0.85
Avail Cap(c_a), veh/h	139	754	541	713	641		525	428	1282	696	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.7	30.7	23.5	33.4	22.9	0.0	35.9	32.0	19.6	33.8	0.0	29.8
Incr Delay (d2), s/veh	15.4	1.8	2.2	10.6	1.3	0.0	9.2	11.8	0.4	9.7	0.0	12.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.5	5.7	6.5	6.1	0.0	4.4	7.5	4.8	6.0	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.1	32.5	25.7	44.0	24.2	0.0	45.0	43.8	20.0	43.5	0.0	41.9
LnGrp LOS	E	C	C	D	C		D	D	B	D	A	D
Approach Vol, veh/h		878			940			1373			932	
Approach Delay, s/veh		31.8			36.2			32.7			42.8	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	22.5	20.5	22.1	15.7	26.6	9.0	33.6				
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	17.1	19.4	17.5	18.0	12.5	24.0	6.6	28.9				
Max Q Clear Time (g_c+I1), s	14.7	16.4	15.5	17.1	10.9	19.8	5.5	15.9				
Green Ext Time (p_c), s	0.5	1.5	0.5	0.4	0.2	0.9	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	35.6
HCM 6th LOS	D

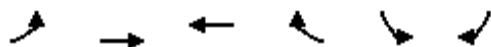
Notes

- User approved volume balancing among the lanes for turning movement.
- Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

15: Serramonte Blvd. & I-280 SB Ramps

11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1525	657	0	845	914
Future Volume (veh/h)	0	1525	657	0	845	914
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1605	722	0	889	962
Peak Hour Factor	0.95	0.95	0.91	0.91	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1690	2429	0	1291	1042
Arrive On Green	0.00	0.48	0.48	0.00	0.37	0.37
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1605	722	0	889	962
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	25.8	5.2	0.0	13.0	19.7
Cycle Q Clear(g_c), s	0.0	25.8	5.2	0.0	13.0	19.7
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1690	2429	0	1291	1042
V/C Ratio(X)	0.00	0.95	0.30	0.00	0.69	0.92
Avail Cap(c_a), veh/h	0	1696	2436	0	1302	1051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.0	9.6	0.0	15.8	17.9
Incr Delay (d2), s/veh	0.0	12.0	0.1	0.0	1.5	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.3	1.6	0.0	4.4	6.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	27.0	9.6	0.0	17.3	30.9
LnGrp LOS	A	C	A	A	B	C
Approach Vol, veh/h		1605	722		1851	
Approach Delay, s/veh		27.0	9.6		24.4	
Approach LOS		C	A		C	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				32.9	26.8	32.9
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				28.5	22.5	28.5
Max Q Clear Time (g_c+I1), s				27.8	21.7	7.2
Green Ext Time (p_c), s				0.6	0.6	5.1
Intersection Summary						
HCM 6th Ctrl Delay			22.8			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary PM
 16: Serramonte Blvd. & I-280 NB Ramps

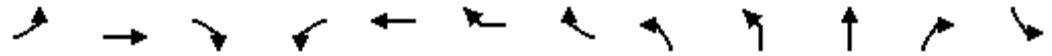
11/09/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖↖	↑↑	↗↗			
Traffic Volume (veh/h)	733	1640	646	15	0	0
Future Volume (veh/h)	733	1640	646	15	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	756	1691	710	16		
Peak Hour Factor	0.97	0.97	0.91	0.91		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1093	2980	1280	29		
Arrive On Green	0.32	0.84	0.36	0.36		
Sat Flow, veh/h	3456	3647	3644	80		
Grp Volume(v), veh/h	756	1691	355	371		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1854		
Q Serve(g_s), s	5.3	4.1	4.5	4.5		
Cycle Q Clear(g_c), s	5.3	4.1	4.5	4.5		
Prop In Lane	1.00			0.04		
Lane Grp Cap(c), veh/h	1093	2980	641	669		
V/C Ratio(X)	0.69	0.57	0.55	0.55		
Avail Cap(c_a), veh/h	1551	4529	1180	1231		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	8.3	0.7	7.1	7.1		
Incr Delay (d2), s/veh	0.8	0.2	0.8	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.1	1.1	1.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.1	0.9	7.9	7.8		
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		2447	726			
Approach Delay, s/veh		3.4	7.9			
Approach LOS		A	A			
Timer - Assigned Phs			4		7	8
Phs Duration (G+Y+Rc), s			27.9		13.3	14.5
Change Period (Y+Rc), s			4.5		4.5	4.5
Max Green Setting (Gmax), s			35.5		12.5	18.5
Max Q Clear Time (g_c+I1), s			6.1		7.3	6.5
Green Ext Time (p_c), s			17.1		1.5	3.6
Intersection Summary						
HCM 6th Ctrl Delay			4.4			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	499	758	339	223	391	437	103	136	450	494	171	144
Future Volume (vph)	499	758	339	223	391	437	103	136	450	494	171	144
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	1770	3176	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	1770	3176	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	548	833	373	248	434	486	114	149	495	543	188	155
RTOR Reduction (vph)	0	0	222	0	0	126	0	0	0	0	139	0
Lane Group Flow (vph)	548	833	151	248	711	197	0	0	644	543	49	155
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.2	16.2	5.0
Effective Green, g (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.2	16.2	5.0
Actuated g/C Ratio	0.08	0.28	0.28	0.08	0.28	0.28			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	1007	442	143	904	404			233	927	407	143
v/s Ratio Prot	c0.16	c0.24		0.14	0.22					0.15		0.09
v/s Ratio Perm			0.10			0.14			c0.25		0.03	
v/c Ratio	1.98	0.83	0.34	1.73	0.79	0.49			2.76	0.59	0.12	1.08
Uniform Delay, d1	28.4	20.7	17.5	28.4	20.4	18.4			28.1	19.9	17.4	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	453.0	5.7	0.5	357.9	4.6	0.9			805.7	1.0	0.1	99.5
Delay (s)	481.4	26.4	18.0	386.3	24.9	19.3			833.9	20.8	17.5	127.9
Level of Service	F	C	B	F	C	B			F	C	B	F
Approach Delay (s)		166.8			93.4					401.2		
Approach LOS		F			F					F		
Intersection Summary												
HCM 2000 Control Delay			186.7									F
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			61.8									18.0
Intersection Capacity Utilization			83.1%									E
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022

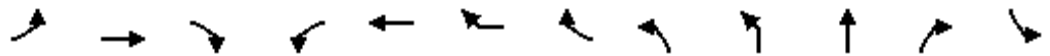


Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	365	149	222
Future Volume (vph)	365	149	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3373		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3373		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	392	160	239
RTOR Reduction (vph)	0	0	178
Lane Group Flow (vph)	552	0	61
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.7		15.7
Effective Green, g (s)	15.7		15.7
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	856		397
v/s Ratio Prot	c0.16		
v/s Ratio Perm			0.04
v/c Ratio	0.64		0.15
Uniform Delay, d1	20.6		17.9
Progression Factor	1.00		1.00
Incremental Delay, d2	1.7		0.2
Delay (s)	22.2		18.1
Level of Service	C		B
Approach Delay (s)	38.5		
Approach LOS	D		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis PM

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	499	758	339	223	391	437	103	136	450	494	171	144
Future Volume (vph)	499	758	339	223	391	437	103	136	450	494	171	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.94	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	3433	3176	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	3433	3176	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	548	833	373	248	434	486	114	149	495	543	188	155
RTOR Reduction (vph)	0	0	222	0	0	126	0	0	0	0	139	0
Lane Group Flow (vph)	548	833	151	248	711	197	0	0	644	543	49	155
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.2	16.2	5.0
Effective Green, g (s)	5.0	17.6	17.6	5.0	17.6	17.6			5.5	16.2	16.2	5.0
Actuated g/C Ratio	0.08	0.28	0.28	0.08	0.28	0.28			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	277	1007	442	277	904	404			233	927	407	143
v/s Ratio Prot	c0.16	c0.24		0.07	0.22					0.15		0.09
v/s Ratio Perm			0.10			0.14			c0.25		0.03	
v/c Ratio	1.98	0.83	0.34	0.90	0.79	0.49			2.76	0.59	0.12	1.08
Uniform Delay, d1	28.4	20.7	17.5	28.1	20.4	18.4			28.1	19.9	17.4	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	453.0	5.7	0.5	28.5	4.6	0.9			805.7	1.0	0.1	99.5
Delay (s)	481.4	26.4	18.0	56.7	24.9	19.3			833.9	20.8	17.5	127.9
Level of Service	F	C	B	E	C	B			F	C	B	F
Approach Delay (s)		166.8			29.6					401.2		
Approach LOS		F			C					F		

Intersection Summary

HCM 2000 Control Delay	171.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	61.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	365	149	222
Future Volume (vph)	365	149	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3373		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3373		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	392	160	239
RTOR Reduction (vph)	0	0	178
Lane Group Flow (vph)	552	0	61
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.7		15.7
Effective Green, g (s)	15.7		15.7
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	856		397
v/s Ratio Prot	c0.16		
v/s Ratio Perm			0.04
v/c Ratio	0.64		0.15
Uniform Delay, d1	20.6		17.9
Progression Factor	1.00		1.00
Incremental Delay, d2	1.7		0.2
Delay (s)	22.2		18.1
Level of Service	C		B
Approach Delay (s)	38.5		
Approach LOS	D		
Intersection Summary			

**Appendix E – Cumulative Conditions
Intersection Level of Service Worksheets**

HCM 6th TWSC
1: Gellert Blvd. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	9	125	698	17	94	311
Future Vol, veh/h	9	125	698	17	94	311
Conflicting Peds, #/hr	5	2	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	171	767	19	104	346

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1329	772	0	0	789	0
Stage 1	770	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	171	400	-	-	831	-
Stage 1	457	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	148	398	-	-	829	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	498	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.4	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	148	398	829
HCM Lane V/C Ratio	-	-	0.083	0.43	0.126
HCM Control Delay (s)	-	-	31.5	20.7	10
HCM Lane LOS	-	-	D	C	A
HCM 95th %tile Q(veh)	-	-	0.3	2.1	0.4

HCM 6th TWSC
2: Marbly Ave. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	86	9	2	123	14	0
Future Vol, veh/h	86	9	2	123	14	0
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	80	80	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	141	15	3	154	21	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	158	0	312
Stage 1	-	-	-	-	151
Stage 2	-	-	-	-	161
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1422	-	681
Stage 1	-	-	-	-	877
Stage 2	-	-	-	-	868
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1419	-	678
Mov Cap-2 Maneuver	-	-	-	-	678
Stage 1	-	-	-	-	875
Stage 2	-	-	-	-	865

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	678	-	-	1419	-
HCM Lane V/C Ratio	0.031	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
 3: Serravista Ave. & Victoria St./Serra Ln.

11/07/2022

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	8	0	9	11	23	114	0	4	36	2
Future Vol, veh/h	6	0	8	0	9	11	23	114	0	4	36	2
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	55	55	55	68	68	68	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	18	0	16	20	34	168	0	6	55	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	326	312	59	319	313	174	60	0	0	173	0	0
Stage 1	71	71	-	241	241	-	-	-	-	-	-	-
Stage 2	255	241	-	78	72	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	627	603	1007	634	602	869	1544	-	-	1404	-	-
Stage 1	939	836	-	762	706	-	-	-	-	-	-	-
Stage 2	749	706	-	931	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	585	582	1005	607	581	864	1541	-	-	1397	-	-
Mov Cap-2 Maneuver	585	582	-	607	581	-	-	-	-	-	-	-
Stage 1	915	831	-	740	686	-	-	-	-	-	-	-
Stage 2	696	686	-	911	830	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		10.4		1.2		0.7	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	769	709	1397	-
HCM Lane V/C Ratio	0.022	-	-	0.04	0.051	0.004	-
HCM Control Delay (s)	7.4	0	-	9.9	10.4	7.6	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-

HCM 6th TWSC
4: Serravista Ave. & Driveway

11/07/2022

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	49	125	0	0	0
Future Vol, veh/h	0	49	125	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	136	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	136	0	-	0	189
Stage 1	-	-	-	-	136
Stage 2	-	-	-	-	53
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1448	-	-	-	800
Stage 1	-	-	-	-	890
Stage 2	-	-	-	-	970
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1448	-	-	-	800
Mov Cap-2 Maneuver	-	-	-	-	800
Stage 1	-	-	-	-	890
Stage 2	-	-	-	-	970

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1448	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th Signalized Intersection Summary

5: Junipero Serra Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	324	573	164	53	357	552	116	581	131	427	312	236
Future Volume (veh/h)	324	573	164	53	357	552	116	581	131	427	312	236
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	381	674	0	58	388	0	126	632	0	480	351	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	462	1496		196	1136		504	1421		375	1421	
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	996	3741	0	238	2839	1585	1030	3647	0	795	3554	1585
Grp Volume(v), veh/h	381	674	0	222	224	0	126	632	0	480	351	0
Grp Sat Flow(s),veh/h/ln	996	1870	0	1460	1617	1585	1030	1777	0	795	1777	1585
Q Serve(g_s), s	13.7	5.9	0.0	0.1	4.3	0.0	4.2	5.8	0.0	12.2	3.0	0.0
Cycle Q Clear(g_c), s	18.0	5.9	0.0	6.1	4.3	0.0	7.1	5.8	0.0	18.0	3.0	0.0
Prop In Lane	1.00		0.00	0.26		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	462	1496		685	647		504	1421		375	1421	
V/C Ratio(X)	0.82	0.45		0.32	0.35		0.25	0.44		1.28	0.25	
Avail Cap(c_a), veh/h	462	1496		685	647		504	1421		375	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	9.9	0.0	9.2	9.4	0.0	11.4	9.9	0.0	19.0	9.0	0.0
Incr Delay (d2), s/veh	11.5	0.2	0.0	0.3	0.3	0.0	0.3	0.2	0.0	145.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	1.8	0.0	1.2	1.2	0.0	0.7	1.6	0.0	18.6	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	10.1	0.0	9.5	9.7	0.0	11.6	10.1	0.0	164.4	9.1	0.0
LnGrp LOS	C	B		A	A		B	B		F	A	
Approach Vol, veh/h		1055			446			758			831	
Approach Delay, s/veh		16.8			9.6			10.3			98.8	
Approach LOS		B			A			B			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		9.1		20.0		20.0		8.1				
Green Ext Time (p_c), s		3.0		0.0		0.0		1.9				

Intersection Summary

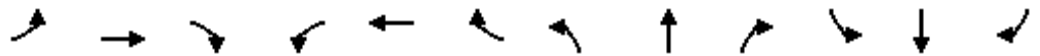
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷	↷		↷	↷
Traffic Volume (veh/h)	130	750	132	114	482	49	523	54	462	163	168	4
Future Volume (veh/h)	130	750	132	114	482	49	523	54	462	163	168	4
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	149	862	0	134	567	50	617	0	274	172	177	1
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1085		165	974	86	730	0	325	184	189	324
Arrive On Green	0.10	0.31	0.00	0.09	0.29	0.29	0.20	0.00	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3304	291	3563	0	1585	900	926	1585
Grp Volume(v), veh/h	149	862	0	134	304	313	617	0	274	349	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1818	1781	0	1585	1825	0	1585
Q Serve(g_s), s	7.6	20.8	0.0	6.9	13.6	13.7	15.5	0.0	15.5	17.5	0.0	0.0
Cycle Q Clear(g_c), s	7.6	20.8	0.0	6.9	13.6	13.7	15.5	0.0	15.5	17.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.16	1.00		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	183	1085		165	524	536	730	0	325	374	0	324
V/C Ratio(X)	0.81	0.79		0.81	0.58	0.58	0.85	0.00	0.84	0.93	0.00	0.00
Avail Cap(c_a), veh/h	281	1580		174	684	699	851	0	379	374	0	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.0	29.7	0.0	41.6	28.0	28.0	35.7	0.0	35.7	36.5	0.0	29.5
Incr Delay (d2), s/veh	10.2	1.8	0.0	23.9	1.0	1.0	7.0	0.0	14.2	30.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	8.7	0.0	4.1	5.7	5.9	7.1	0.0	7.1	10.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	31.5	0.0	65.5	29.0	29.0	42.7	0.0	49.8	66.8	0.0	29.5
LnGrp LOS	D	C		E	C	C	D	A	D	E	A	C
Approach Vol, veh/h		1011			751			891			350	
Approach Delay, s/veh		34.4			35.5			44.9			66.7	
Approach LOS		C			D			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.6	13.1	33.0		23.6	14.1	32.0				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.3	9.1	41.5		19.1	14.7	35.9				
Max Q Clear Time (g_c+I1), s		17.5	8.9	22.8		19.5	9.6	15.7				
Green Ext Time (p_c), s		1.6	0.0	5.7		0.0	0.2	3.6				

Intersection Summary

HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
7: I-280 SB Ramps & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	419	970	206	773	0	0	0	0	604	2	315
Future Volume (veh/h)	0	419	970	206	773	0	0	0	0	604	2	315
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	455	0	224	840	0				764	0	229
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	849		395	1654	0				1104	0	491
Arrive On Green	0.00	0.24	0.00	0.11	0.47	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	455	0	224	840	0				764	0	229
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	4.5	0.0	2.5	6.6	0.0				7.6	0.0	4.7
Cycle Q Clear(g_c), s	0.0	4.5	0.0	2.5	6.6	0.0				7.6	0.0	4.7
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	849		395	1654	0				1104	0	491
V/C Ratio(X)	0.00	0.54		0.57	0.51	0.00				0.69	0.00	0.47
Avail Cap(c_a), veh/h	0	3148		940	4513	0				1787	0	795
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	0.0	16.8	7.5	0.0				12.1	0.0	11.2
Incr Delay (d2), s/veh	0.0	0.5	0.0	1.3	0.2	0.0				0.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.0	0.9	1.6	0.0				2.1	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.8	0.0	18.1	7.7	0.0				12.9	0.0	11.8
LnGrp LOS	A	B		B	A	A				B	A	B
Approach Vol, veh/h		455			1064						993	
Approach Delay, s/veh		13.8			9.9						12.7	
Approach LOS		B			A						B	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			9.1	14.1		16.9			23.2			
Change Period (Y+Rc), s			4.5	4.5		4.5			4.5			
Max Green Setting (Gmax), s			10.9	35.5		20.1			50.9			
Max Q Clear Time (g_c+I1), s			4.5	6.5		9.6			8.6			
Green Ext Time (p_c), s			0.4	3.1		2.9			6.8			
Intersection Summary												
HCM 6th Ctrl Delay			11.7									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
8: Driveway & Hickey Blvd.

11/07/2022

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙			↗
Traffic Vol, veh/h	1388	0	88	998	0	8
Future Vol, veh/h	1388	0	88	998	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1509	0	96	1085	0	9

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	755
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	351
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	351
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	15.5
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	351	-	-
HCM Lane V/C Ratio	0.025	-	-
HCM Control Delay (s)	15.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

HCM 6th Signalized Intersection Summary
 9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	695	17	262	319	417	40	452	278	408	204	90
Future Volume (veh/h)	89	695	17	262	319	417	40	452	278	408	204	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	106	827	2	291	354	87	46	520	130	474	237	8
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	922	405	351	1012	450	349	733	304	661	347	292
Arrive On Green	0.08	0.26	0.26	0.10	0.28	0.28	0.20	0.20	0.20	0.19	0.19	0.19
Sat Flow, veh/h	1781	3554	1561	3456	3554	1582	1781	3741	1552	3563	1870	1572
Grp Volume(v), veh/h	106	827	2	291	354	87	46	520	130	474	237	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1728	1777	1582	1781	1870	1552	1781	1870	1572
Q Serve(g_s), s	4.1	15.7	0.1	5.8	5.5	2.9	1.5	9.1	5.1	8.7	8.3	0.3
Cycle Q Clear(g_c), s	4.1	15.7	0.1	5.8	5.5	2.9	1.5	9.1	5.1	8.7	8.3	0.3
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	136	922	405	351	1012	450	349	733	304	661	347	292
V/C Ratio(X)	0.78	0.90	0.00	0.83	0.35	0.19	0.13	0.71	0.43	0.72	0.68	0.03
Avail Cap(c_a), veh/h	191	940	413	351	1012	450	469	984	408	917	481	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	25.0	19.2	30.8	19.9	18.9	23.2	26.3	24.7	26.7	26.6	23.3
Incr Delay (d2), s/veh	12.6	11.1	0.0	15.2	0.2	0.2	0.2	1.5	1.0	1.6	2.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.5	0.0	3.0	2.2	1.0	0.6	4.0	1.9	3.7	3.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	36.1	19.2	46.1	20.1	19.1	23.4	27.8	25.6	28.4	28.9	23.3
LnGrp LOS	D	D	B	D	C	B	C	C	C	C	C	C
Approach Vol, veh/h		935			732			696			719	
Approach Delay, s/veh		37.0			30.3			27.1			28.5	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	11.6	22.6		17.5	9.8	24.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.4	7.1	18.5		18.0	7.5	18.1				
Max Q Clear Time (g_c+I1), s		11.1	7.8	17.7		10.7	6.1	7.5				
Green Ext Time (p_c), s		2.4	0.0	0.4		2.0	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Callan Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	188	688	53	17	364	59	86	313	34	55	130	172
Future Volume (veh/h)	188	688	53	17	364	59	86	313	34	55	130	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	204	748	58	19	404	66	91	333	36	60	141	187
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1068	83	41	613	99	124	430	46	99	178	236
Arrive On Green	0.14	0.32	0.32	0.02	0.20	0.20	0.07	0.26	0.26	0.06	0.24	0.24
Sat Flow, veh/h	1781	3335	258	1781	3059	496	1781	1658	179	1781	728	966
Grp Volume(v), veh/h	204	398	408	19	233	237	91	0	369	60	0	328
Grp Sat Flow(s),veh/h/ln	1781	1777	1816	1781	1777	1778	1781	0	1838	1781	0	1694
Q Serve(g_s), s	5.8	10.3	10.4	0.6	6.4	6.5	2.6	0.0	9.8	1.7	0.0	9.5
Cycle Q Clear(g_c), s	5.8	10.3	10.4	0.6	6.4	6.5	2.6	0.0	9.8	1.7	0.0	9.5
Prop In Lane	1.00		0.14	1.00		0.28	1.00		0.10	1.00		0.57
Lane Grp Cap(c), veh/h	255	569	582	41	356	356	124	0	476	99	0	415
V/C Ratio(X)	0.80	0.70	0.70	0.46	0.66	0.66	0.73	0.00	0.77	0.61	0.00	0.79
Avail Cap(c_a), veh/h	321	759	776	169	608	608	186	0	674	176	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.8	15.7	15.7	25.4	19.4	19.4	24.0	0.0	18.1	24.3	0.0	18.6
Incr Delay (d2), s/veh	10.8	1.9	1.8	7.9	2.0	2.1	8.0	0.0	3.7	5.9	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(50%),veh/ln	2.9	3.8	3.9	0.3	2.5	2.6	1.3	0.0	4.2	0.8	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	17.5	17.5	33.3	21.4	21.5	32.0	0.0	21.7	30.2	0.0	22.9
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1010			489			460				388
Approach Delay, s/veh		20.6			21.9			23.8				24.0
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	18.1	5.7	21.4	8.2	17.4	12.0	15.1				
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	5.2	19.3	5.0	22.5	5.5	19.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	3.7	11.8	2.6	12.4	4.6	11.5	7.8	8.5				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.5	0.0	1.2	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				22.1								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary

11: Hickey Blvd. & Campus Dr.

11/07/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	263	206	897	546	155
Future Volume (veh/h)	62	263	206	897	546	155
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
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	87	370	234	1019	607	172
Peak Hour Factor	0.71	0.71	0.88	0.88	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	97	414	249	1830	792	224
Arrive On Green	0.32	0.32	0.14	0.51	0.29	0.29
Sat Flow, veh/h	307	1304	1781	3647	2810	768
Grp Volume(v), veh/h	458	0	234	1019	397	382
Grp Sat Flow(s),veh/h/ln	1614	0	1781	1777	1777	1708
Q Serve(g_s), s	14.5	0.0	7.0	10.5	10.9	11.0
Cycle Q Clear(g_c), s	14.5	0.0	7.0	10.5	10.9	11.0
Prop In Lane	0.19	0.81	1.00			0.45
Lane Grp Cap(c), veh/h	513	0	249	1830	518	498
V/C Ratio(X)	0.89	0.00	0.94	0.56	0.77	0.77
Avail Cap(c_a), veh/h	586	0	249	2083	645	619
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	17.5	0.0	22.9	8.9	17.4	17.4
Incr Delay (d2), s/veh	14.7	0.0	41.2	0.3	4.3	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	5.5	3.0	4.4	4.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.2	0.0	64.2	9.1	21.7	22.0
LnGrp LOS	C	A	E	A	C	C
Approach Vol, veh/h	458			1253	779	
Approach Delay, s/veh	32.2			19.4	21.8	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		32.2		21.6	12.0	20.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5		19.5	7.5	19.5
Max Q Clear Time (g_c+I1), s		12.5		16.5	9.0	13.0
Green Ext Time (p_c), s		7.0		0.5	0.0	2.6

Intersection Summary

HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	721	433	170	61	178	313	112	963	76	262	502	330	
Future Volume (vph)	721	433	170	61	178	313	112	963	76	262	502	330	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1747	1583		3495	1556	1770	3539	1561	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.70	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1747	1583		2464	1556	1770	3539	1561	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	743	446	175	71	207	364	129	1107	87	294	564	371	
RTOR Reduction (vph)	0	0	67	0	0	160	0	0	60	0	0	258	
Lane Group Flow (vph)	587	602	108	0	278	204	129	1107	27	294	564	113	
Confl. Peds. (#/hr)	2						2		1	1			
Confl. Bikes (#/hr)							1						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases			4	8		8			2			6	
Actuated Green, G (s)	34.5	34.5	34.5		17.1	17.1	13.2	37.0	37.0	12.5	36.3	36.3	
Effective Green, g (s)	34.5	34.5	34.5		17.1	17.1	13.2	37.0	37.0	12.5	36.3	36.3	
Actuated g/C Ratio	0.29	0.29	0.29		0.14	0.14	0.11	0.31	0.31	0.10	0.30	0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	486	506	458		353	223	196	1099	484	185	1078	482	
v/s Ratio Prot	c0.35	0.34					0.07	c0.31		c0.17	0.16		
v/s Ratio Perm			0.07		0.11	c0.13			0.02			0.07	
v/c Ratio	1.21	1.19	0.23		0.79	0.91	0.66	1.01	0.06	1.59	0.52	0.23	
Uniform Delay, d1	42.3	42.3	32.2		49.2	50.3	50.8	41.0	28.8	53.3	34.2	31.0	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	111.6	103.7	0.3		11.0	37.4	7.7	28.9	0.0	289.2	0.5	0.3	
Delay (s)	153.9	146.0	32.5		60.3	87.7	58.5	70.0	28.8	342.5	34.7	31.2	
Level of Service	F	F	C		E	F	E	E	C	F	C	C	
Approach Delay (s)		134.8			75.8			66.2			107.3		
Approach LOS		F			E			E			F		
Intersection Summary													
HCM 2000 Control Delay			99.2		HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.13										
Actuated Cycle Length (s)			119.1		Sum of lost time (s)				18.0				
Intersection Capacity Utilization			94.7%		ICU Level of Service				F				
Analysis Period (min)			15										

c Critical Lane Group

Intersection

Intersection Delay, s/veh26.1

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	167	17	17	6	23	56	24	415	5	24	237	87
Future Vol, veh/h	167	17	17	6	23	56	24	415	5	24	237	87
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.86	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	194	20	20	8	31	75	28	483	6	29	289	106
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.2	12.2	36.1	23.1
HCM LOS	C	B	E	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	83%	7%	7%
Vol Thru, %	93%	8%	27%	68%
Vol Right, %	1%	8%	66%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	444	201	85	348
LT Vol	24	167	6	24
Through Vol	415	17	23	237
RT Vol	5	17	56	87
Lane Flow Rate	516	234	113	424
Geometry Grp	1	1	1	1
Degree of Util (X)	0.865	0.462	0.223	0.716
Departure Headway (Hd)	6.033	7.122	7.097	6.07
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	599	505	502	594
Service Time	4.091	5.197	5.19	4.131
HCM Lane V/C Ratio	0.861	0.463	0.225	0.714
HCM Control Delay	36.1	16.2	12.2	23.1
HCM Lane LOS	E	C	B	C
HCM 95th-tile Q	9.7	2.4	0.8	5.9

HCM 6th Signalized Intersection Summary
 14: Gellert Blvd. & Serramonte Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↗	↵↗	↑	↗↗	↵↗	↑↗	↗	↵↗	↗	↗
Traffic Volume (veh/h)	66	461	254	464	273	198	247	162	480	143	199	15
Future Volume (veh/h)	66	461	254	464	273	198	247	162	480	143	199	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	69	480	265	540	317	0	284	186	552	177	246	19
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	787	512	593	627		364	399	1216	282	330	26
Arrive On Green	0.06	0.22	0.22	0.17	0.34	0.00	0.10	0.21	0.21	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1579	3456	1870	2790	3563	1870	3148	3456	1712	132
Grp Volume(v), veh/h	69	480	265	540	317	0	284	186	552	177	0	265
Grp Sat Flow(s),veh/h/ln	1781	1777	1579	1728	1870	1395	1781	1870	1574	1728	0	1844
Q Serve(g_s), s	2.2	7.0	7.9	8.9	7.8	0.0	4.5	5.0	7.5	2.9	0.0	7.8
Cycle Q Clear(g_c), s	2.2	7.0	7.9	8.9	7.8	0.0	4.5	5.0	7.5	2.9	0.0	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	103	787	512	593	627		364	399	1216	282	0	356
V/C Ratio(X)	0.67	0.61	0.52	0.91	0.51		0.78	0.47	0.45	0.63	0.00	0.75
Avail Cap(c_a), veh/h	179	1108	654	593	716		364	616	1580	305	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	20.2	15.9	23.5	15.4	0.0	25.3	19.8	13.2	25.7	0.0	22.0
Incr Delay (d2), s/veh	7.2	0.8	0.8	18.3	0.6	0.0	10.4	0.8	0.3	3.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.8	2.6	4.8	3.1	0.0	2.3	2.1	2.4	1.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	21.0	16.7	41.8	16.0	0.0	35.7	20.7	13.5	29.3	0.0	25.1
LnGrp LOS	C	C	B	D	B		D	C	B	C	A	C
Approach Vol, veh/h		814			857			1022			442	
Approach Delay, s/veh		20.7			32.3			21.0			26.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	16.8	14.4	17.3	10.4	15.6	7.8	23.8				
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	5.1	19.0	9.9	18.0	5.9	18.2	5.8	22.1				
Max Q Clear Time (g_c+I1), s	4.9	9.5	10.9	9.9	6.5	9.8	4.2	9.8				
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	0.9	0.0	1.4				

Intersection Summary

HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

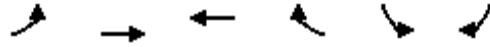
Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

15: Serramonte Blvd. & I-280 SB Ramps

11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1051	476	0	968	506
Future Volume (veh/h)	0	1051	476	0	968	506
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1236	535	0	1166	610
Peak Hour Factor	0.85	0.85	0.89	0.89	0.83	0.83
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1279	1838	0	1590	1283
Arrive On Green	0.00	0.36	0.36	0.00	0.46	0.46
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1236	535	0	1166	610
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	17.1	3.7	0.0	13.7	7.6
Cycle Q Clear(g_c), s	0.0	17.1	3.7	0.0	13.7	7.6
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1279	1838	0	1590	1283
V/C Ratio(X)	0.00	0.97	0.29	0.00	0.73	0.48
Avail Cap(c_a), veh/h	0	1279	1838	0	1590	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	11.4	0.0	11.0	9.3
Incr Delay (d2), s/veh	0.0	17.6	0.1	0.0	3.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.8	1.2	0.0	4.1	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	33.3	11.5	0.0	14.0	10.6
LnGrp LOS	A	C	B	A	B	B
Approach Vol, veh/h		1236	535		1776	
Approach Delay, s/veh		33.3	11.5		12.9	
Approach LOS		C	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				22.5	27.5	22.5
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s				19.1	15.7	5.7
Green Ext Time (p_c), s				0.0	4.3	2.9
Intersection Summary						
HCM 6th Ctrl Delay			19.8			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary

16: Serramonte Blvd. & I-280 NB Ramps

11/07/2022

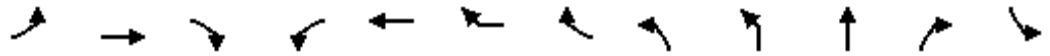


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	482	1544	474	4	0	0
Future Volume (veh/h)	482	1544	474	4	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	581	1860	585	5		
Peak Hour Factor	0.83	0.83	0.81	0.81		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	851	3025	1648	14		
Arrive On Green	0.25	0.85	0.46	0.46		
Sat Flow, veh/h	3456	3647	3704	31		
Grp Volume(v), veh/h	581	1860	288	302		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1865		
Q Serve(g_s), s	4.6	4.9	3.2	3.2		
Cycle Q Clear(g_c), s	4.6	4.9	3.2	3.2		
Prop In Lane	1.00			0.02		
Lane Grp Cap(c), veh/h	851	3025	811	851		
V/C Ratio(X)	0.68	0.61	0.35	0.36		
Avail Cap(c_a), veh/h	1199	4169	1204	1263		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.3	0.7	5.3	5.3		
Incr Delay (d2), s/veh	1.0	0.2	0.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.6	0.7		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.3	0.9	5.6	5.6		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2441	590			
Approach Delay, s/veh		3.4	5.6			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				30.3	12.0	18.3
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	10.5	20.5
Max Q Clear Time (g_c+I1), s				6.9	6.6	5.2
Green Ext Time (p_c), s				18.8	0.9	3.2
Intersection Summary						
HCM 6th Ctrl Delay			3.8			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	340	863	338	221	270	373	130	162	494	514	366	152
Future Volume (vph)	340	863	338	221	270	373	130	162	494	514	366	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	1770	3146	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	1770	3146	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	370	938	367	240	293	405	141	176	537	559	398	165
RTOR Reduction (vph)	0	0	233	0	0	125	0	0	0	0	157	0
Lane Group Flow (vph)	370	938	134	240	564	150	0	0	713	559	241	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1022	457	142	908	416			232	925	414	142
v/s Ratio Prot	0.11	c0.27		c0.14	0.18					c0.16		0.09
v/s Ratio Perm			0.08			0.10			c0.27		0.15	
v/c Ratio	1.35	0.92	0.29	1.69	0.62	0.36			3.07	0.60	0.58	1.16
Uniform Delay, d1	28.6	21.4	17.2	28.6	19.2	17.6			28.4	20.2	20.0	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	177.7	12.6	0.4	339.0	1.3	0.5			944.3	1.1	2.1	125.6
Delay (s)	206.4	34.0	17.6	367.7	20.5	18.1			972.7	21.3	22.1	154.3
Level of Service	F	C	B	F	C	B			F	C	C	F
Approach Delay (s)		68.5			97.1					427.7		
Approach LOS		E			F					F		

Intersection Summary

HCM 2000 Control Delay	183.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	333	91	222
Future Volume (vph)	333	91	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.97		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3425		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3425		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	362	99	241
RTOR Reduction (vph)	0	0	180
Lane Group Flow (vph)	461	0	61
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.8		15.8
Effective Green, g (s)	15.8		15.8
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	868		401
v/s Ratio Prot	0.13		
v/s Ratio Perm			0.04
v/c Ratio	0.53		0.15
Uniform Delay, d1	20.1		18.1
Progression Factor	1.00		1.00
Incremental Delay, d2	0.6		0.2
Delay (s)	20.7		18.2
Level of Service	C		B
Approach Delay (s)	45.4		
Approach LOS	D		
Intersection Summary			

HCM 6th TWSC
 1: Gellert Blvd. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	8	78	485	14	147	741
Future Vol, veh/h	8	78	485	14	147	741
Conflicting Peds, #/hr	5	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	98	522	15	160	805

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1658	528	0	0	543	0
Stage 1	528	-	-	-	-	-
Stage 2	1130	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	107	550	-	-	1026	-
Stage 1	592	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	89	547	-	-	1020	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	258	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	89	547	1020
HCM Lane V/C Ratio	-	-	0.112	0.178	0.157
HCM Control Delay (s)	-	-	50.5	13	9.2
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.6	0.6

HCM 6th TWSC
2: Marbly Ave. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	115	10	2	87	0	4
Future Vol, veh/h	115	10	2	87	0	4
Conflicting Peds, #/hr	0	1	1	0	4	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	128	11	3	110	0	5

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	140	0	255
Stage 1	-	-	-	-	135
Stage 2	-	-	-	-	120
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1443	-	734
Stage 1	-	-	-	-	891
Stage 2	-	-	-	-	905
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1442	-	729
Mov Cap-2 Maneuver	-	-	-	-	729
Stage 1	-	-	-	-	890
Stage 2	-	-	-	-	900

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	903	-	-	1442	-
HCM Lane V/C Ratio	0.006	-	-	0.002	-
HCM Control Delay (s)	9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
3: Serravista Ave. & Victoria St./Serra Ln.

11/07/2022

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	17	0	0	19	7	48	1	59	38	5
Future Vol, veh/h	1	1	17	0	0	19	7	48	1	59	38	5
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	2	2	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	84	84	84	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	21	0	0	38	8	57	1	66	43	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	276	259	52	266	262	60	54	0	0	60	0	0
Stage 1	183	183	-	76	76	-	-	-	-	-	-	-
Stage 2	93	76	-	190	186	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	676	645	1016	687	643	1005	1551	-	-	1544	-	-
Stage 1	819	748	-	933	832	-	-	-	-	-	-	-
Stage 2	914	832	-	812	746	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	623	610	1010	644	608	1003	1544	-	-	1541	-	-
Mov Cap-2 Maneuver	623	610	-	644	608	-	-	-	-	-	-	-
Stage 1	811	711	-	926	826	-	-	-	-	-	-	-
Stage 2	875	826	-	758	709	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.9		8.7		0.9		4.3	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	946	1003	1541	-
HCM Lane V/C Ratio	0.005	-	-	0.025	0.038	0.043	-
HCM Control Delay (s)	7.3	0	-	8.9	8.7	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-

HCM 6th TWSC
4: Serravista Ave. & Driveway

11/07/2022

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	102	71	0	18	0
Future Vol, veh/h	0	102	71	0	18	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	111	77	0	20	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	77	0	-	0	188 77
Stage 1	-	-	-	-	77 -
Stage 2	-	-	-	-	111 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1522	-	-	-	801 984
Stage 1	-	-	-	-	946 -
Stage 2	-	-	-	-	914 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1522	-	-	-	801 984
Mov Cap-2 Maneuver	-	-	-	-	801 -
Stage 1	-	-	-	-	946 -
Stage 2	-	-	-	-	914 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1522	-	-	-	801
HCM Lane V/C Ratio	-	-	-	-	0.024
HCM Control Delay (s)	0	-	-	-	9.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary
 5: Junipero Serra Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↔			↕	↰	↰	↕		↰	↕	↰
Traffic Volume (veh/h)	283	856	236	139	541	825	134	406	117	386	454	226
Future Volume (veh/h)	283	856	236	139	541	825	134	406	117	386	454	226
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	292	882	0	148	576	0	147	446	0	424	499	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1598		289	691		412	1454		437	1454	
Arrive On Green	0.43	0.43	0.00	0.43	0.43	0.00	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	837	3741	0	369	1617	1585	898	3647	0	943	3554	1585
Grp Volume(v), veh/h	292	882	0	148	576	0	147	446	0	424	499	0
Grp Sat Flow(s),veh/h/ln	837	1870	0	369	1617	1585	898	1777	0	943	1777	1585
Q Serve(g_s), s	6.1	9.7	0.0	12.7	17.4	0.0	7.4	4.7	0.0	17.8	5.3	0.0
Cycle Q Clear(g_c), s	23.5	9.7	0.0	22.4	17.4	0.0	12.7	4.7	0.0	22.5	5.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	1598		289	691		412	1454		437	1454	
V/C Ratio(X)	1.31	0.55		0.51	0.83		0.36	0.31		0.97	0.34	
Avail Cap(c_a), veh/h	223	1598		289	691		412	1454		437	1454	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.2	11.8	0.0	20.2	14.0	0.0	15.5	11.0	0.0	21.1	11.2	0.0
Incr Delay (d2), s/veh	166.9	0.4	0.0	1.5	8.7	0.0	0.5	0.1	0.0	35.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	3.3	0.0	1.7	6.7	0.0	1.3	1.5	0.0	9.3	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	193.1	12.2	0.0	21.7	22.7	0.0	16.1	11.1	0.0	56.5	11.3	0.0
LnGrp LOS	F	B		C	C		B	B		E	B	
Approach Vol, veh/h		1174			724			593			923	
Approach Delay, s/veh		57.2			22.5			12.3			32.1	
Approach LOS		E			C			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		28.0		27.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		23.5		22.5		23.5				
Max Q Clear Time (g_c+I1), s		14.7		25.5		24.5		24.4				
Green Ext Time (p_c), s		2.2		0.0		0.0		0.0				

Intersection Summary

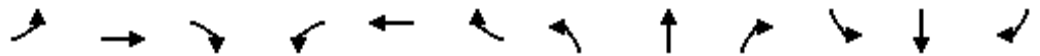
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↕		↖	↕		↖	↕	↗		↕	↗
Traffic Volume (veh/h)	195	776	126	213	735	53	829	75	423	134	91	3
Future Volume (veh/h)	195	776	126	213	735	53	829	75	423	134	91	3
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		0.99	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	843	0	222	766	51	960	0	209	147	100	0
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	970		243	931	62	1050	0	467	161	109	235
Arrive On Green	0.13	0.27	0.00	0.14	0.28	0.28	0.29	0.00	0.29	0.15	0.15	0.00
Sat Flow, veh/h	1781	3647	0	1781	3380	225	3563	0	1585	1081	735	1585
Grp Volume(v), veh/h	212	843	0	222	403	414	960	0	209	247	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1828	1781	0	1585	1816	0	1585
Q Serve(g_s), s	14.3	27.6	0.0	15.0	25.9	25.9	31.7	0.0	13.1	16.3	0.0	0.0
Cycle Q Clear(g_c), s	14.3	27.6	0.0	15.0	25.9	25.9	31.7	0.0	13.1	16.3	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	0.60		1.00
Lane Grp Cap(c), veh/h	238	970		243	489	503	1050	0	467	270	0	235
V/C Ratio(X)	0.89	0.87		0.92	0.82	0.82	0.91	0.00	0.45	0.92	0.00	0.00
Avail Cap(c_a), veh/h	253	1123		243	551	567	1134	0	505	270	0	235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	51.9	42.2	0.0	51.9	41.4	41.4	41.5	0.0	34.9	51.1	0.0	0.0
Incr Delay (d2), s/veh	28.7	6.7	0.0	35.8	8.9	8.7	10.9	0.0	0.7	33.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	12.8	0.0	9.0	12.4	12.7	14.9	0.0	5.1	10.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	49.0	0.0	87.7	50.3	50.1	52.4	0.0	35.6	84.6	0.0	0.0
LnGrp LOS	F	D		F	D	D	D	A	D	F	A	A
Approach Vol, veh/h		1055			1039			1169			247	
Approach Delay, s/veh		55.3			58.2			49.4			84.6	
Approach LOS		E			E			D			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.4	21.1	37.8		22.6	20.8	38.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		33.7	17.0	29.6		18.3	16.3	27.9				
Green Ext Time (p_c), s		2.2	0.0	3.7		0.0	0.1	3.5				

Intersection Summary

HCM 6th Ctrl Delay	56.2
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 7: I-280 SB Ramps & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	444	754	180	1360	0	0	0	0	665	5	356
Future Volume (veh/h)	0	444	754	180	1360	0	0	0	0	665	5	356
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	516	0	188	1417	0				855	0	262
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1318		302	1916	0				1068	0	475
Arrive On Green	0.00	0.37	0.00	0.09	0.54	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	516	0	188	1417	0				855	0	262
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	6.0	0.0	2.9	17.1	0.0				12.3	0.0	7.7
Cycle Q Clear(g_c), s	0.0	6.0	0.0	2.9	17.1	0.0				12.3	0.0	7.7
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1318		302	1916	0				1068	0	475
V/C Ratio(X)	0.00	0.39		0.62	0.74	0.00				0.80	0.00	0.55
Avail Cap(c_a), veh/h	0	1687		588	2578	0				1308	0	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.9	0.0	24.6	9.9	0.0				18.0	0.0	16.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	2.1	0.8	0.0				3.0	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	2.0	0.0	1.2	5.0	0.0				4.5	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.1	0.0	26.7	10.6	0.0				21.0	0.0	17.4
LnGrp LOS	A	B		C	B	A				C	A	B
Approach Vol, veh/h		516			1605						1117	
Approach Delay, s/veh		13.1			12.5						20.2	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			9.4	25.2		21.2		34.6				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			9.5	26.5		20.5		40.5				
Max Q Clear Time (g_c+I1), s			4.9	8.0		14.3		19.1				
Green Ext Time (p_c), s			0.2	3.2		2.4		11.0				
Intersection Summary												
HCM 6th Ctrl Delay			15.2									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
8: Driveway & Hickey Blvd.

11/07/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵			↵
Traffic Vol, veh/h	1113	0	35	1663	0	39
Future Vol, veh/h	1113	0	35	1663	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1210	0	38	1808	0	42

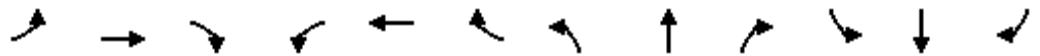
Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	605
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	441
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	441
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	14
HCM LOS		B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	441	-	-
HCM Lane V/C Ratio	0.096	-	-
HCM Control Delay (s)	14	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-

HCM 6th Signalized Intersection Summary
 9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘↗	↑↑	↗	↘	↕↑	↗	↘	↕↑	↗
Traffic Volume (veh/h)	118	399	25	456	426	783	70	392	156	565	408	240
Future Volume (veh/h)	118	399	25	456	426	783	70	392	156	565	408	240
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		0.99	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	149	505	0	501	468	485	77	431	18	628	453	33
Peak Hour Factor	0.79	0.79	0.79	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	847	378	591	1126	497	292	613	252	771	405	335
Arrive On Green	0.09	0.24	0.00	0.17	0.32	0.32	0.16	0.16	0.16	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	3456	3554	1567	1781	3741	1536	3563	1870	1548
Grp Volume(v), veh/h	149	505	0	501	468	485	77	431	18	628	453	33
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1728	1777	1567	1781	1870	1536	1781	1870	1548
Q Serve(g_s), s	7.1	10.8	0.0	12.0	8.9	26.2	3.2	9.3	0.8	14.3	18.5	1.5
Cycle Q Clear(g_c), s	7.1	10.8	0.0	12.0	8.9	26.2	3.2	9.3	0.8	14.3	18.5	1.5
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	165	847	378	591	1126	497	292	613	252	771	405	335
V/C Ratio(X)	0.91	0.60	0.00	0.85	0.42	0.98	0.26	0.70	0.07	0.81	1.12	0.10
Avail Cap(c_a), veh/h	165	847	378	687	1126	497	385	809	332	771	405	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.4	28.9	0.0	34.4	23.0	28.9	31.2	33.8	30.2	31.9	33.5	26.8
Incr Delay (d2), s/veh	43.9	1.1	0.0	8.7	0.2	34.3	0.5	1.8	0.1	6.8	81.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	4.5	0.0	5.6	3.6	14.0	1.4	4.3	0.3	6.7	17.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.4	30.1	0.0	43.1	23.2	63.2	31.7	35.6	30.4	38.6	114.9	27.0
LnGrp LOS	F	C	A	D	C	E	C	D	C	D	F	C
Approach Vol, veh/h		654			1454			526			1114	
Approach Delay, s/veh		42.0			43.4			34.9			69.3	
Approach LOS		D			D			C			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.5	19.1	24.9		23.0	12.4	31.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.0	18.0		18.5	7.9	27.1				
Max Q Clear Time (g_c+I1), s		11.3	14.0	12.8		20.5	9.1	28.2				
Green Ext Time (p_c), s		1.8	0.6	1.5		0.0	0.0	0.0				

Intersection Summary

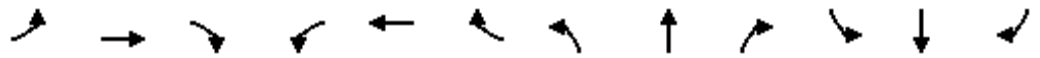
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary
 10: Callan Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	158	433	99	69	571	133	42	183	34	40	192	241
Future Volume (veh/h)	158	433	99	69	571	133	42	183	34	40	192	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	180	492	112	76	627	146	49	215	40	43	204	256
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.85	0.85	0.85	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	933	211	102	736	171	80	464	86	74	224	281
Arrive On Green	0.12	0.32	0.32	0.06	0.26	0.26	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	1781	2873	650	1781	2855	664	1781	1529	284	1781	746	936
Grp Volume(v), veh/h	180	303	301	76	390	383	49	0	255	43	0	460
Grp Sat Flow(s),veh/h/ln	1781	1777	1746	1781	1777	1742	1781	0	1813	1781	0	1682
Q Serve(g_s), s	6.5	9.1	9.2	2.8	13.7	13.8	1.8	0.0	7.5	1.6	0.0	17.3
Cycle Q Clear(g_c), s	6.5	9.1	9.2	2.8	13.7	13.8	1.8	0.0	7.5	1.6	0.0	17.3
Prop In Lane	1.00		0.37	1.00		0.38	1.00		0.16	1.00		0.56
Lane Grp Cap(c), veh/h	221	577	567	102	458	449	80	0	550	74	0	504
V/C Ratio(X)	0.81	0.53	0.53	0.75	0.85	0.85	0.61	0.00	0.46	0.58	0.00	0.91
Avail Cap(c_a), veh/h	230	577	567	195	486	477	135	0	563	138	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.1	18.1	18.1	30.5	23.2	23.2	30.8	0.0	18.6	31.0	0.0	22.2
Incr Delay (d2), s/veh	19.1	0.9	0.9	10.4	13.0	13.5	7.3	0.0	0.6	7.1	0.0	20.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.5	3.5	1.4	6.9	6.8	0.9	0.0	3.0	0.8	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	19.0	19.1	40.9	36.2	36.7	38.2	0.0	19.2	38.1	0.0	42.2
LnGrp LOS	D	B	B	D	D	D	D	A	B	D	A	D
Approach Vol, veh/h		784			849			304				503
Approach Delay, s/veh		25.5			36.9			22.2				41.8
Approach LOS		C			D			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	24.4	8.3	25.9	7.5	24.2	12.7	21.4				
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	5.1	20.4	7.2	19.3	5.0	20.5	8.5	18.0				
Max Q Clear Time (g_c+I1), s	3.6	9.5	4.8	11.2	3.8	19.3	8.5	15.8				
Green Ext Time (p_c), s	0.0	1.0	0.0	2.3	0.0	0.4	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay				32.4								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary
 11: Hickey Blvd. & Campus Dr.

11/07/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	131	148	773	848	108
Future Volume (veh/h)	101	131	148	773	848	108
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.99
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	128	166	159	831	932	119
Peak Hour Factor	0.79	0.79	0.93	0.93	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	162	210	200	2051	1159	148
Arrive On Green	0.23	0.23	0.11	0.58	0.37	0.37
Sat Flow, veh/h	720	934	1781	3647	3259	404
Grp Volume(v), veh/h	295	0	159	831	523	528
Grp Sat Flow(s),veh/h/ln	1659	0	1781	1777	1777	1792
Q Serve(g_s), s	7.6	0.0	4.0	5.9	12.0	12.0
Cycle Q Clear(g_c), s	7.6	0.0	4.0	5.9	12.0	12.0
Prop In Lane	0.43	0.56	1.00			0.23
Lane Grp Cap(c), veh/h	374	0	200	2051	651	656
V/C Ratio(X)	0.79	0.00	0.80	0.41	0.80	0.80
Avail Cap(c_a), veh/h	656	0	200	2185	718	724
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	16.6	0.0	19.7	5.3	13.0	13.0
Incr Delay (d2), s/veh	3.7	0.0	19.8	0.1	6.1	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	2.5	1.2	4.7	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.4	0.0	39.5	5.4	19.1	19.0
LnGrp LOS	C	A	D	A	B	B
Approach Vol, veh/h	295			990	1051	
Approach Delay, s/veh	20.4			10.9	19.0	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		30.8		14.8	9.6	21.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.1	18.4
Max Q Clear Time (g_c+I1), s		7.9		9.6	6.0	14.0
Green Ext Time (p_c), s		5.7		0.6	0.0	2.5

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B
























Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis

12: Skyline Blvd. & Hickey Blvd.

11/07/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	290	140	116	375	290	177	625	85	214	656	655
Future Volume (vph)	384	290	140	116	375	290	177	625	85	214	656	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1756	1583		3498	1548	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.76	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1756	1583		2706	1548	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	417	315	152	122	395	305	186	658	89	225	691	689
RTOR Reduction (vph)	0	0	100	0	0	202	0	0	69	0	0	361
Lane Group Flow (vph)	359	373	52	0	517	103	186	658	20	225	691	328
Confl. Peds. (#/hr)	7					7						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	18.5	18.5	18.5		20.3	20.3	10.1	19.5	19.5	11.9	21.3	21.3
Effective Green, g (s)	18.5	18.5	18.5		20.3	20.3	10.1	19.5	19.5	11.9	21.3	21.3
Actuated g/C Ratio	0.21	0.21	0.21		0.23	0.23	0.11	0.22	0.22	0.13	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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
Lane Grp Cap (vph)	352	368	332		622	356	202	782	349	238	854	382
v/s Ratio Prot	c0.21	0.21					0.11	0.19		c0.13	0.20	
v/s Ratio Perm			0.03		c0.19	0.07			0.01			c0.21
v/c Ratio	1.02	1.01	0.16		0.83	0.29	0.92	0.84	0.06	0.95	0.81	0.86
Uniform Delay, d1	34.9	34.9	28.5		32.3	28.0	38.7	32.9	27.1	37.8	31.5	32.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.1	50.4	0.2		9.2	0.5	41.7	8.2	0.1	43.0	5.7	17.1
Delay (s)	88.0	85.2	28.7		41.6	28.5	80.3	41.0	27.2	80.9	37.2	49.1
Level of Service	F	F	C		D	C	F	D	C	F	D	D
Approach Delay (s)		76.6			36.7			47.5			48.5	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			51.8		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			88.2		Sum of lost time (s)					18.0		
Intersection Capacity Utilization			76.4%		ICU Level of Service					D		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh 30
 Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	102	14	19	5	14	25	35	241	7	22	438	160
Future Vol, veh/h	102	14	19	5	14	25	35	241	7	22	438	160
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.87	0.87	0.87	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	126	17	23	6	17	30	40	277	8	24	476	174
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.7	10.5	14.5	43.3
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	76%	11%	4%
Vol Thru, %	85%	10%	32%	71%
Vol Right, %	2%	14%	57%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	283	135	44	620
LT Vol	35	102	5	22
Through Vol	241	14	14	438
RT Vol	7	19	25	160
Lane Flow Rate	325	167	54	674
Geometry Grp	1	1	1	1
Degree of Util (X)	0.509	0.307	0.1	0.942
Departure Headway (Hd)	5.63	6.625	6.712	5.033
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	638	538	537	714
Service Time	3.701	4.709	4.712	3.091
HCM Lane V/C Ratio	0.509	0.31	0.101	0.944
HCM Control Delay	14.5	12.7	10.5	43.3
HCM Lane LOS	B	B	B	E
HCM 95th-tile Q	2.9	1.3	0.3	13.4

HCM 6th Signalized Intersection Summary
 14: Gellert Blvd. & Serramonte Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	458	282	654	484	711	393	356	731	492	371	65
Future Volume (veh/h)	64	458	282	654	484	711	393	356	731	492	371	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	526	324	667	494	0	427	387	795	523	395	69
Peak Hour Factor	0.87	0.87	0.87	0.98	0.98	0.98	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	95	705	531	673	636		496	434	1315	602	412	72
Arrive On Green	0.05	0.20	0.20	0.19	0.34	0.00	0.14	0.23	0.23	0.17	0.27	0.27
Sat Flow, veh/h	1781	3554	1563	3456	1870	2790	3563	1870	3006	3456	1543	270
Grp Volume(v), veh/h	74	526	324	667	494	0	427	387	795	523	0	464
Grp Sat Flow(s),veh/h/ln	1781	1777	1563	1728	1870	1395	1781	1870	1503	1728	0	1813
Q Serve(g_s), s	3.7	12.5	15.6	17.3	21.3	0.0	10.5	18.0	18.5	13.2	0.0	22.6
Cycle Q Clear(g_c), s	3.7	12.5	15.6	17.3	21.3	0.0	10.5	18.0	18.5	13.2	0.0	22.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	95	705	531	673	636		496	434	1315	602	0	484
V/C Ratio(X)	0.78	0.75	0.61	0.99	0.78		0.86	0.89	0.60	0.87	0.00	0.96
Avail Cap(c_a), veh/h	131	712	534	673	636		496	434	1315	658	0	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	33.9	24.9	36.1	26.6	0.0	37.8	33.4	20.1	36.1	0.0	32.4
Incr Delay (d2), s/veh	17.9	4.3	2.0	32.3	6.1	0.0	14.4	20.1	0.8	11.2	0.0	30.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.7	5.9	10.1	10.2	0.0	5.5	10.4	6.3	6.4	0.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	38.1	26.9	68.3	32.6	0.0	52.2	53.5	20.9	47.3	0.0	62.8
LnGrp LOS	E	D	C	E	C		D	D	C	D	A	E
Approach Vol, veh/h		924			1161			1609			987	
Approach Delay, s/veh		35.9			53.2			37.0			54.6	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.2	25.3	22.0	22.3	17.0	28.5	9.3	35.0				
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	17.1	19.4	17.5	18.0	12.5	24.0	6.6	28.9				
Max Q Clear Time (g_c+I1), s	15.2	20.5	19.3	17.6	12.5	24.6	5.7	23.3				
Green Ext Time (p_c), s	0.4	0.0	0.0	0.2	0.0	0.0	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary

15: Serramonte Blvd. & I-280 SB Ramps

11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1684	939	0	820	982
Future Volume (veh/h)	0	1684	939	0	820	982
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1773	1032	0	863	1034
Peak Hour Factor	0.95	0.95	0.91	0.91	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1688	2425	0	1296	1046
Arrive On Green	0.00	0.47	0.47	0.00	0.38	0.38
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1773	1032	0	863	1034
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	28.5	8.0	0.0	12.5	22.1
Cycle Q Clear(g_c), s	0.0	28.5	8.0	0.0	12.5	22.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1688	2425	0	1296	1046
V/C Ratio(X)	0.00	1.05	0.43	0.00	0.67	0.99
Avail Cap(c_a), veh/h	0	1688	2425	0	1296	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	10.4	0.0	15.6	18.6
Incr Delay (d2), s/veh	0.0	36.5	0.1	0.0	2.7	25.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.0	2.5	0.0	4.4	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	52.2	10.5	0.0	18.3	43.8
LnGrp LOS	A	F	B	A	B	D
Approach Vol, veh/h		1773	1032		1897	
Approach Delay, s/veh		52.2	10.5		32.2	
Approach LOS		D	B		C	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				33.0	27.0	33.0
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				28.5	22.5	28.5
Max Q Clear Time (g_c+I1), s				30.5	24.1	10.0
Green Ext Time (p_c), s				0.0	0.0	7.2
Intersection Summary						
HCM 6th Ctrl Delay			35.0			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary

16: Serramonte Blvd. & I-280 NB Ramps

11/07/2022

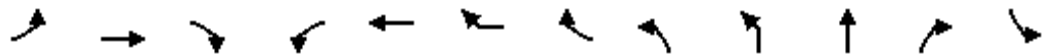


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶↶	↶↶	↶↶			
Traffic Volume (veh/h)	736	1772	950	15	0	0
Future Volume (veh/h)	736	1772	950	15	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	759	1827	1044	16		
Peak Hour Factor	0.97	0.97	0.91	0.91		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1024	3067	1539	24		
Arrive On Green	0.30	0.86	0.43	0.43		
Sat Flow, veh/h	3456	3647	3675	55		
Grp Volume(v), veh/h	759	1827	518	542		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1859		
Q Serve(g_s), s	6.5	4.8	7.7	7.7		
Cycle Q Clear(g_c), s	6.5	4.8	7.7	7.7		
Prop In Lane	1.00			0.03		
Lane Grp Cap(c), veh/h	1024	3067	764	799		
V/C Ratio(X)	0.74	0.60	0.68	0.68		
Avail Cap(c_a), veh/h	1313	3836	999	1046		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.4	0.6	7.5	7.5		
Incr Delay (d2), s/veh	1.7	0.2	1.2	1.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.0	0.1	2.0	2.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	0.8	8.7	8.7		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2586	1060			
Approach Delay, s/veh		4.1	8.7			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				32.9	14.3	18.6
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	12.5	18.5
Max Q Clear Time (g_c+I1), s				6.8	8.5	9.7
Green Ext Time (p_c), s				18.5	1.2	4.4
Intersection Summary						
HCM 6th Ctrl Delay			5.5			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	501	937	295	399	620	540	130	162	520	529	296	177
Future Volume (vph)	501	937	295	399	620	540	130	162	520	529	296	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	1770	3223	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	1770	3223	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	551	1030	324	443	689	600	144	178	571	581	325	190
RTOR Reduction (vph)	0	0	216	0	0	125	0	0	0	0	151	0
Lane Group Flow (vph)	551	1030	108	443	989	319	0	0	749	581	174	190
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.6	16.6	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.6	16.6	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.27	0.27	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	1017	447	141	926	408			230	938	412	141
v/s Ratio Prot	0.16	0.29		c0.25	c0.31					0.16		0.11
v/s Ratio Perm			0.07			0.22			c0.28		0.11	
v/c Ratio	2.01	1.01	0.24	3.14	1.07	0.78			3.26	0.62	0.42	1.35
Uniform Delay, d1	28.8	22.3	17.1	28.8	22.3	20.5			28.6	20.2	19.0	28.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	467.6	31.4	0.3	982.2	49.5	9.4			1026.6	1.2	0.7	195.9
Delay (s)	496.4	53.7	17.4	1011.0	71.8	29.9			1055.2	21.5	19.7	224.7
Level of Service	F	D	B	F	E	C			F	C	B	F
Approach Delay (s)		175.6			283.7					488.9		
Approach LOS		F			F					F		
Intersection Summary												
HCM 2000 Control Delay			269.1			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.43									
Actuated Cycle Length (s)			62.6			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			98.4%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	372	176	222
Future Volume (vph)	372	176	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3355		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3355		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	400	189	239
RTOR Reduction (vph)	0	0	173
Lane Group Flow (vph)	589	0	66
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	16.1		16.1
Effective Green, g (s)	16.1		16.1
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	862		401
v/s Ratio Prot	c0.18		
v/s Ratio Perm			0.04
v/c Ratio	0.68		0.16
Uniform Delay, d1	21.0		18.0
Progression Factor	1.00		1.00
Incremental Delay, d2	2.3		0.2
Delay (s)	23.2		18.2
Level of Service	C		B
Approach Delay (s)	59.6		
Approach LOS	E		
Intersection Summary			

**Appendix F – Cumulative plus Project Alternative 1 Conditions
Intersection Level of Service Worksheets**

HCM 6th TWSC AM
1: Gellert Blvd. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	5.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	9	162	698	17	199	311
Future Vol, veh/h	9	162	698	17	199	311
Conflicting Peds, #/hr	5	2	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	222	767	19	221	346

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1563	772	0	0	789	0
Stage 1	770	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	123	400	-	-	831	-
Stage 1	457	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	89	398	-	-	829	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	456	-	-	-	-	-
Stage 2	326	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.3	0	4.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	89	398	829
HCM Lane V/C Ratio	-	-	0.139	0.558	0.267
HCM Control Delay (s)	-	-	51.8	24.9	10.9
HCM Lane LOS	-	-	F	C	B
HCM 95th %tile Q(veh)	-	-	0.5	3.3	1.1

HCM 6th TWSC AM
2: Marbly Ave. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	222	9	2	150	14	0
Future Vol, veh/h	222	9	2	150	14	0
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	80	80	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	364	15	3	188	21	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	381	0	569 374
Stage 1	-	-	-	-	374 -
Stage 2	-	-	-	-	195 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1177	-	484 672
Stage 1	-	-	-	-	696 -
Stage 2	-	-	-	-	838 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1175	-	481 671
Mov Cap-2 Maneuver	-	-	-	-	481 -
Stage 1	-	-	-	-	695 -
Stage 2	-	-	-	-	835 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	481	-	-	1175	-
HCM Lane V/C Ratio	0.043	-	-	0.002	-
HCM Control Delay (s)	12.8	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	0	8	0	9	11	23	114	0	4	36	7
Future Vol, veh/h	21	0	8	0	9	11	23	114	0	4	36	7
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	55	55	55	68	68	68	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	0	18	0	16	20	34	168	0	6	55	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	330	316	63	323	321	174	68	0	0	173	0	0
Stage 1	75	75	-	241	241	-	-	-	-	-	-	-
Stage 2	255	241	-	82	80	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	623	600	1002	630	596	869	1533	-	-	1404	-	-
Stage 1	934	833	-	762	706	-	-	-	-	-	-	-
Stage 2	749	706	-	926	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	581	578	1000	602	575	864	1530	-	-	1397	-	-
Mov Cap-2 Maneuver	581	578	-	602	575	-	-	-	-	-	-	-
Stage 1	909	828	-	739	685	-	-	-	-	-	-	-
Stage 2	696	685	-	906	823	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.1		10.4		1.2		0.6	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1530	-	-	657	705	1397	-
HCM Lane V/C Ratio	0.022	-	-	0.098	0.052	0.004	-
HCM Control Delay (s)	7.4	0	-	11.1	10.4	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-

HCM 6th TWSC AM
4: Serravista Ave. & Driveway

11/07/2022

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	133	49	125	20	6	42
Future Vol, veh/h	133	49	125	20	6	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	145	53	136	22	7	46

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	158	0	-	0	490
Stage 1	-	-	-	-	147
Stage 2	-	-	-	-	343
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1422	-	-	-	537
Stage 1	-	-	-	-	880
Stage 2	-	-	-	-	719
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1422	-	-	-	481
Mov Cap-2 Maneuver	-	-	-	-	481
Stage 1	-	-	-	-	788
Stage 2	-	-	-	-	719

Approach	EB	WB	SB
HCM Control Delay, s	5.7	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1422	-	-	-	812
HCM Lane V/C Ratio	0.102	-	-	-	0.064
HCM Control Delay (s)	7.8	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.2

HCM 6th Signalized Intersection Summary AM

5: Junipero Serra Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷			↶	↷	↶	↷		↶	↷	↷
Traffic Volume (veh/h)	324	583	174	53	388	552	146	581	131	427	312	236
Future Volume (veh/h)	324	583	174	53	388	552	146	581	131	427	312	236
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	381	686	0	58	422	0	159	632	0	480	351	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	1496		187	1167		504	1421		375	1421	
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	965	3741	0	220	2917	1585	1030	3647	0	795	3554	1585
Grp Volume(v), veh/h	381	686	0	242	238	0	159	632	0	480	351	0
Grp Sat Flow(s),veh/h/ln	965	1870	0	1520	1617	1585	1030	1777	0	795	1777	1585
Q Serve(g_s), s	13.3	6.1	0.0	0.1	4.7	0.0	5.5	5.8	0.0	12.2	3.0	0.0
Cycle Q Clear(g_c), s	18.0	6.1	0.0	6.1	4.7	0.0	8.4	5.8	0.0	18.0	3.0	0.0
Prop In Lane	1.00		0.00	0.24		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	446	1496		707	647		504	1421		375	1421	
V/C Ratio(X)	0.85	0.46		0.34	0.37		0.32	0.44		1.28	0.25	
Avail Cap(c_a), veh/h	446	1496		707	647		504	1421		375	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.5	9.9	0.0	9.3	9.5	0.0	11.8	9.9	0.0	19.0	9.0	0.0
Incr Delay (d2), s/veh	14.9	0.2	0.0	0.3	0.3	0.0	0.4	0.2	0.0	145.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	1.9	0.0	1.3	1.3	0.0	1.0	1.6	0.0	18.6	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	10.1	0.0	9.6	9.8	0.0	12.1	10.1	0.0	164.4	9.1	0.0
LnGrp LOS	C	B		A	A		B	B		F	A	
Approach Vol, veh/h		1067			480			791			831	
Approach Delay, s/veh		18.1			9.7			10.5			98.8	
Approach LOS		B			A			B			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		10.4		20.0		20.0		8.1				
Green Ext Time (p_c), s		2.8		0.0		0.0		2.1				

Intersection Summary

HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↕		↰	↕		↰	↕	↰		↕	↰
Traffic Volume (veh/h)	130	760	153	114	544	49	600	54	462	163	168	4
Future Volume (veh/h)	130	760	153	114	544	49	600	54	462	163	168	4
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	149	874	0	134	640	50	701	0	274	172	177	1
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	1086		164	986	77	783	0	348	177	182	312
Arrive On Green	0.10	0.31	0.00	0.09	0.30	0.30	0.22	0.00	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3340	261	3563	0	1585	900	926	1585
Grp Volume(v), veh/h	149	874	0	134	340	350	701	0	274	349	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1823	1781	0	1585	1825	0	1585
Q Serve(g_s), s	7.9	22.0	0.0	7.2	16.2	16.2	18.5	0.0	15.8	18.4	0.0	0.0
Cycle Q Clear(g_c), s	7.9	22.0	0.0	7.2	16.2	16.2	18.5	0.0	15.8	18.4	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.14	1.00		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	182	1086		164	525	538	783	0	348	360	0	312
V/C Ratio(X)	0.82	0.80		0.82	0.65	0.65	0.90	0.00	0.79	0.97	0.00	0.00
Avail Cap(c_a), veh/h	270	1522		167	658	675	820	0	365	360	0	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.6	31.0	0.0	43.2	29.8	29.8	36.7	0.0	35.7	38.6	0.0	31.3
Incr Delay (d2), s/veh	11.6	2.2	0.0	25.9	1.5	1.5	12.1	0.0	10.5	39.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	9.4	0.0	4.3	6.9	7.1	8.9	0.0	6.9	12.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.2	33.2	0.0	69.1	31.3	31.3	48.8	0.0	46.2	78.0	0.0	31.3
LnGrp LOS	D	C		E	C	C	D	A	D	E	A	C
Approach Vol, veh/h		1023			824			975				350
Approach Delay, s/veh		36.3			37.4			48.1				77.9
Approach LOS		D			D			D				E
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.8	13.4	34.1		23.6	14.4	33.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.3	9.1	41.5		19.1	14.7	35.9				
Max Q Clear Time (g_c+I1), s		20.5	9.2	24.0		20.4	9.9	18.2				
Green Ext Time (p_c), s		0.8	0.0	5.7		0.0	0.1	3.9				

Intersection Summary

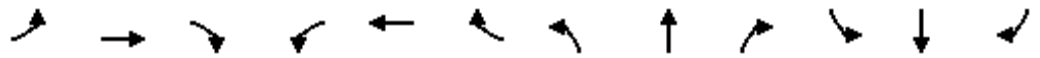
HCM 6th Ctrl Delay	44.8
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM
7: I-280 SB Ramps & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	460	994	206	912	0	0	0	0	604	2	383
Future Volume (veh/h)	0	460	994	206	912	0	0	0	0	604	2	383
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	500	0	224	991	0				787	0	278
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	896		383	1672	0				1120	0	498
Arrive On Green	0.00	0.25	0.00	0.11	0.47	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	500	0	224	991	0				787	0	278
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	5.1	0.0	2.6	8.6	0.0				8.1	0.0	6.1
Cycle Q Clear(g_c), s	0.0	5.1	0.0	2.6	8.6	0.0				8.1	0.0	6.1
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	896		383	1672	0				1120	0	498
V/C Ratio(X)	0.00	0.56		0.59	0.59	0.00				0.70	0.00	0.56
Avail Cap(c_a), veh/h	0	3017		901	4325	0				1712	0	762
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.6	0.0	17.7	8.1	0.0				12.6	0.0	11.9
Incr Delay (d2), s/veh	0.0	0.5	0.0	1.4	0.3	0.0				0.8	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.0	0.9	2.2	0.0				2.3	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.2	0.0	19.1	8.5	0.0				13.4	0.0	12.9
LnGrp LOS	A	B		B	A	A				B	A	B
Approach Vol, veh/h		500			1215						1065	
Approach Delay, s/veh		14.2			10.4						13.3	
Approach LOS		B			B						B	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			9.1	15.0		17.6			24.2			
Change Period (Y+Rc), s			4.5	4.5		4.5			4.5			
Max Green Setting (Gmax), s			10.9	35.5		20.1			50.9			
Max Q Clear Time (g_c+I1), s			4.6	7.1		10.1			10.6			
Green Ext Time (p_c), s			0.4	3.4		3.0			8.5			
Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC AM
8: Driveway & Hickey Blvd.

11/07/2022

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1399	59	179	998	0	62
Future Vol, veh/h	1399	59	179	998	0	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1521	64	195	1085	0	67

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	793
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	331
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	331
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	18.6
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	331	-	-
HCM Lane V/C Ratio	0.204	-	-
HCM Control Delay (s)	18.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.8	-	-

HCM 6th Signalized Intersection Summary AM

9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	726	48	327	319	417	59	459	287	423	213	90
Future Volume (veh/h)	89	726	48	327	319	417	59	459	287	423	213	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	106	864	39	363	354	87	68	528	140	492	248	8
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	944	415	444	1130	503	367	770	320	638	335	282
Arrive On Green	0.08	0.27	0.27	0.13	0.32	0.32	0.21	0.21	0.21	0.18	0.18	0.18
Sat Flow, veh/h	1781	3554	1561	3456	3554	1582	1781	3741	1553	3563	1870	1572
Grp Volume(v), veh/h	106	864	39	363	354	87	68	528	140	492	248	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1728	1777	1582	1781	1870	1553	1781	1870	1572
Q Serve(g_s), s	4.8	19.2	1.5	8.3	6.1	3.2	2.6	10.6	6.4	10.7	10.2	0.3
Cycle Q Clear(g_c), s	4.8	19.2	1.5	8.3	6.1	3.2	2.6	10.6	6.4	10.7	10.2	0.3
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	135	944	415	444	1130	503	367	770	320	638	335	282
V/C Ratio(X)	0.78	0.92	0.09	0.82	0.31	0.17	0.19	0.69	0.44	0.77	0.74	0.03
Avail Cap(c_a), veh/h	199	956	420	479	1130	503	674	1415	587	787	413	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	29.0	22.5	34.6	21.0	20.0	26.7	29.9	28.2	31.8	31.6	27.6
Incr Delay (d2), s/veh	11.5	13.1	0.1	10.0	0.2	0.2	0.2	1.1	0.9	3.8	5.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	9.4	0.6	4.0	2.4	1.2	1.1	4.8	2.4	4.8	5.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.4	42.1	22.6	44.5	21.2	20.2	26.9	31.0	29.2	35.6	37.1	27.6
LnGrp LOS	D	D	C	D	C	C	C	C	C	D	D	C
Approach Vol, veh/h		1009			804			736			748	
Approach Delay, s/veh		42.0			31.6			30.3			36.0	
Approach LOS		D			C			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.3	15.0	26.1		19.1	10.7	30.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.8	11.3	21.9		18.0	9.1	24.1				
Max Q Clear Time (g_c+I1), s		12.6	10.3	21.2		12.7	6.8	8.1				
Green Ext Time (p_c), s		4.1	0.1	0.4		1.7	0.0	2.2				

Intersection Summary

HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary AM
 10: Callan Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	188	750	53	17	383	59	86	313	34	55	130	172
Future Volume (veh/h)	188	750	53	17	383	59	86	313	34	55	130	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	204	815	58	19	426	66	91	333	36	60	141	187
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	254	1094	78	41	635	98	124	428	46	98	178	236
Arrive On Green	0.14	0.33	0.33	0.02	0.21	0.21	0.07	0.26	0.26	0.06	0.24	0.24
Sat Flow, veh/h	1781	3358	239	1781	3084	475	1781	1658	179	1781	728	966
Grp Volume(v), veh/h	204	431	442	19	244	248	91	0	369	60	0	328
Grp Sat Flow(s),veh/h/ln	1781	1777	1820	1781	1777	1782	1781	0	1838	1781	0	1694
Q Serve(g_s), s	5.9	11.5	11.5	0.6	6.7	6.8	2.7	0.0	9.9	1.8	0.0	9.7
Cycle Q Clear(g_c), s	5.9	11.5	11.5	0.6	6.7	6.8	2.7	0.0	9.9	1.8	0.0	9.7
Prop In Lane	1.00		0.13	1.00		0.27	1.00		0.10	1.00		0.57
Lane Grp Cap(c), veh/h	254	579	593	41	366	367	124	0	474	98	0	413
V/C Ratio(X)	0.80	0.75	0.75	0.46	0.67	0.68	0.74	0.00	0.78	0.61	0.00	0.79
Avail Cap(c_a), veh/h	318	751	769	167	600	602	184	0	666	174	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	16.0	16.0	25.7	19.5	19.5	24.3	0.0	18.3	24.6	0.0	18.9
Incr Delay (d2), s/veh	11.2	2.9	2.9	7.9	2.1	2.2	8.2	0.0	3.9	6.0	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.4	4.5	0.3	2.7	2.7	1.3	0.0	4.2	0.9	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	18.9	18.9	33.6	21.6	21.7	32.5	0.0	22.2	30.6	0.0	23.4
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1077			511			460				388
Approach Delay, s/veh		21.6			22.1			24.2				24.5
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	18.2	5.7	21.8	8.2	17.5	12.1	15.5				
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	5.2	19.3	5.0	22.5	5.5	19.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	3.8	11.9	2.6	13.5	4.7	11.7	7.9	8.8				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.6	0.0	1.2	0.1	1.9				

Intersection Summary

HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary AM

11: Hickey Blvd. & Campus Dr.

11/07/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	263	206	958	565	155
Future Volume (veh/h)	62	263	206	958	565	155
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
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	87	370	234	1089	628	172
Peak Hour Factor	0.71	0.71	0.88	0.88	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	97	414	247	1836	809	221
Arrive On Green	0.32	0.32	0.14	0.52	0.30	0.30
Sat Flow, veh/h	307	1304	1781	3647	2833	749
Grp Volume(v), veh/h	458	0	234	1089	407	393
Grp Sat Flow(s),veh/h/ln	1614	0	1781	1777	1777	1712
Q Serve(g_s), s	14.7	0.0	7.1	11.6	11.3	11.4
Cycle Q Clear(g_c), s	14.7	0.0	7.1	11.6	11.3	11.4
Prop In Lane	0.19	0.81	1.00			0.44
Lane Grp Cap(c), veh/h	512	0	247	1836	525	506
V/C Ratio(X)	0.89	0.00	0.95	0.59	0.78	0.78
Avail Cap(c_a), veh/h	581	0	247	2066	639	616
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	17.6	0.0	23.2	9.1	17.5	17.5
Incr Delay (d2), s/veh	15.1	0.0	43.3	0.4	4.9	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	5.6	3.4	4.7	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.7	0.0	66.5	9.5	22.3	22.6
LnGrp LOS	C	A	E	A	C	C
Approach Vol, veh/h	458			1323	800	
Approach Delay, s/veh	32.7			19.6	22.4	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		32.5		21.7	12.0	20.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5		19.5	7.5	19.5
Max Q Clear Time (g_c+I1), s		13.6		16.7	9.1	13.4
Green Ext Time (p_c), s		7.4		0.5	0.0	2.5

Intersection Summary

HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis AM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	721	433	170	71	178	323	112	963	106	293	502	330	
Future Volume (vph)	721	433	170	71	178	323	112	963	106	293	502	330	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1747	1583		3489	1556	1770	3539	1561	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.68	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1747	1583		2411	1556	1770	3539	1561	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	743	446	175	83	207	376	129	1107	122	329	564	371	
RTOR Reduction (vph)	0	0	68	0	0	159	0	0	66	0	0	258	
Lane Group Flow (vph)	587	602	107	0	290	217	129	1107	56	329	564	113	
Confl. Peds. (#/hr)	2						2		1	1			
Confl. Bikes (#/hr)							1						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases			4	8		8			2			6	
Actuated Green, G (s)	34.5	34.5	34.5		17.6	17.6	13.2	37.0	37.0	12.5	36.3	36.3	
Effective Green, g (s)	34.5	34.5	34.5		17.6	17.6	13.2	37.0	37.0	12.5	36.3	36.3	
Actuated g/C Ratio	0.29	0.29	0.29		0.15	0.15	0.11	0.31	0.31	0.10	0.30	0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	484	503	456		354	228	195	1094	482	184	1074	480	
v/s Ratio Prot	c0.35	0.34					0.07	c0.31		c0.19	0.16		
v/s Ratio Perm			0.07		0.12	c0.14			0.04			0.07	
v/c Ratio	1.21	1.20	0.24		0.82	0.95	0.66	1.01	0.12	1.79	0.53	0.23	
Uniform Delay, d1	42.5	42.5	32.5		49.5	50.6	51.1	41.3	29.6	53.5	34.5	31.2	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	113.6	106.6	0.3		13.7	45.0	8.2	30.2	0.1	375.6	0.5	0.3	
Delay (s)	156.2	149.2	32.8		63.2	95.6	59.2	71.5	29.7	429.1	35.0	31.5	
Level of Service	F	F	C		E	F	E	E	C	F	C	C	
Approach Delay (s)		137.3			81.5			66.6			136.5		
Approach LOS		F			F			E			F		
Intersection Summary													
HCM 2000 Control Delay			108.4		HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.16										
Actuated Cycle Length (s)			119.6		Sum of lost time (s)				18.0				
Intersection Capacity Utilization			96.7%		ICU Level of Service				F				
Analysis Period (min)			15										

c Critical Lane Group

Intersection

Intersection Delay, s/veh 28.8

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	167	17	17	11	23	56	24	415	20	24	237	87
Future Vol, veh/h	167	17	17	11	23	56	24	415	20	24	237	87
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.86	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	194	20	20	15	31	75	28	483	23	29	289	106
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.6	12.7	41.5	24.1
HCM LOS	C	B	E	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	83%	12%	7%
Vol Thru, %	90%	8%	26%	68%
Vol Right, %	4%	8%	62%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	459	201	90	348
LT Vol	24	167	11	24
Through Vol	415	17	23	237
RT Vol	20	17	56	87
Lane Flow Rate	534	234	120	424
Geometry Grp	1	1	1	1
Degree of Util (X)	0.901	0.469	0.244	0.727
Departure Headway (Hd)	6.075	7.229	7.331	6.163
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	592	495	493	581
Service Time	4.149	5.322	5.331	4.243
HCM Lane V/C Ratio	0.902	0.473	0.243	0.73
HCM Control Delay	41.5	16.6	12.7	24.1
HCM Lane LOS	E	C	B	C
HCM 95th-tile Q	10.9	2.5	0.9	6.1

HCM 6th Signalized Intersection Summary AM

14: Gellert Blvd. & Serramonte Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	66	461	254	489	273	198	247	162	480	143	199	15
Future Volume (veh/h)	66	461	254	489	273	198	247	162	480	143	199	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	69	480	265	569	317	0	284	186	552	177	246	19
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	787	512	593	627		364	399	1216	282	330	26
Arrive On Green	0.06	0.22	0.22	0.17	0.34	0.00	0.10	0.21	0.21	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1579	3456	1870	2790	3563	1870	3148	3456	1712	132
Grp Volume(v), veh/h	69	480	265	569	317	0	284	186	552	177	0	265
Grp Sat Flow(s),veh/h/ln	1781	1777	1579	1728	1870	1395	1781	1870	1574	1728	0	1844
Q Serve(g_s), s	2.2	7.0	7.9	9.4	7.8	0.0	4.5	5.0	7.5	2.9	0.0	7.8
Cycle Q Clear(g_c), s	2.2	7.0	7.9	9.4	7.8	0.0	4.5	5.0	7.5	2.9	0.0	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	103	787	512	593	627		364	399	1216	282	0	356
V/C Ratio(X)	0.67	0.61	0.52	0.96	0.51		0.78	0.47	0.45	0.63	0.00	0.75
Avail Cap(c_a), veh/h	179	1108	654	593	716		364	616	1580	305	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	20.2	15.9	23.7	15.4	0.0	25.3	19.8	13.2	25.7	0.0	22.0
Incr Delay (d2), s/veh	7.2	0.8	0.8	27.2	0.6	0.0	10.4	0.8	0.3	3.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.8	2.6	5.8	3.1	0.0	2.3	2.1	2.4	1.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	21.0	16.7	50.9	16.0	0.0	35.7	20.7	13.5	29.3	0.0	25.1
LnGrp LOS	C	C	B	D	B		D	C	B	C	A	C
Approach Vol, veh/h		814			886			1022				442
Approach Delay, s/veh		20.7			38.4			21.0				26.7
Approach LOS		C			D			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	16.8	14.4	17.3	10.4	15.6	7.8	23.8				
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	5.1	19.0	9.9	18.0	5.9	18.2	5.8	22.1				
Max Q Clear Time (g_c+I1), s	4.9	9.5	11.4	9.9	6.5	9.8	4.2	9.8				
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	0.9	0.0	1.4				

Intersection Summary

HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

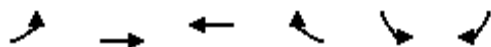
Notes

- User approved volume balancing among the lanes for turning movement.
- Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM

15: Serramonte Blvd. & I-280 SB Ramps

11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1059	491	0	968	515
Future Volume (veh/h)	0	1059	491	0	968	515
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1246	552	0	1166	620
Peak Hour Factor	0.85	0.85	0.89	0.89	0.83	0.83
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1279	1838	0	1590	1283
Arrive On Green	0.00	0.36	0.36	0.00	0.46	0.46
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1246	552	0	1166	620
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	17.3	3.9	0.0	13.7	7.7
Cycle Q Clear(g_c), s	0.0	17.3	3.9	0.0	13.7	7.7
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1279	1838	0	1590	1283
V/C Ratio(X)	0.00	0.97	0.30	0.00	0.73	0.48
Avail Cap(c_a), veh/h	0	1279	1838	0	1590	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.8	11.5	0.0	11.0	9.4
Incr Delay (d2), s/veh	0.0	19.2	0.1	0.0	3.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.1	1.3	0.0	4.1	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	34.9	11.6	0.0	14.0	10.7
LnGrp LOS	A	C	B	A	B	B
Approach Vol, veh/h		1246	552		1786	
Approach Delay, s/veh		34.9	11.6		12.9	
Approach LOS		C	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				22.5	27.5	22.5
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s				19.3	15.7	5.9
Green Ext Time (p_c), s				0.0	4.3	3.0
Intersection Summary						
HCM 6th Ctrl Delay			20.3			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Summary AM

16: Serramonte Blvd. & I-280 NB Ramps

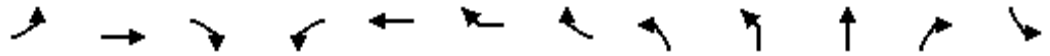
11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶↶	↶↶	↶↶			
Traffic Volume (veh/h)	485	1549	489	4	0	0
Future Volume (veh/h)	485	1549	489	4	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	584	1866	604	5		
Peak Hour Factor	0.83	0.83	0.81	0.81		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	853	3027	1649	14		
Arrive On Green	0.25	0.85	0.46	0.46		
Sat Flow, veh/h	3456	3647	3705	30		
Grp Volume(v), veh/h	584	1866	297	312		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1865		
Q Serve(g_s), s	4.6	5.0	3.3	3.3		
Cycle Q Clear(g_c), s	4.6	5.0	3.3	3.3		
Prop In Lane	1.00			0.02		
Lane Grp Cap(c), veh/h	853	3027	811	852		
V/C Ratio(X)	0.68	0.62	0.37	0.37		
Avail Cap(c_a), veh/h	1196	4157	1200	1260		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.4	0.7	5.4	5.4		
Incr Delay (d2), s/veh	1.0	0.2	0.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.7	0.7		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.3	0.9	5.7	5.6		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2450	609			
Approach Delay, s/veh		3.4	5.7			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				30.3	12.0	18.4
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	10.5	20.5
Max Q Clear Time (g_c+I1), s				7.0	6.6	5.3
Green Ext Time (p_c), s				18.9	0.9	3.3
Intersection Summary						
HCM 6th Ctrl Delay			3.8			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	345	863	338	221	270	373	130	162	494	514	366	152
Future Volume (vph)	345	863	338	221	270	373	130	162	494	514	366	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	1770	3146	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	1770	3146	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	375	938	367	240	293	405	141	176	537	559	398	165
RTOR Reduction (vph)	0	0	233	0	0	125	0	0	0	0	157	0
Lane Group Flow (vph)	375	938	134	240	564	150	0	0	713	559	241	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1022	457	142	908	416			232	925	414	142
v/s Ratio Prot	0.11	c0.27		c0.14	0.18					c0.16		0.09
v/s Ratio Perm			0.08			0.10			c0.27		0.15	
v/c Ratio	1.36	0.92	0.29	1.69	0.62	0.36			3.07	0.60	0.58	1.16
Uniform Delay, d1	28.6	21.4	17.2	28.6	19.2	17.6			28.4	20.2	20.0	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	185.3	12.6	0.4	339.0	1.3	0.5			944.3	1.1	2.1	125.6
Delay (s)	214.0	34.0	17.6	367.7	20.5	18.1			972.7	21.3	22.1	154.3
Level of Service	F	C	B	F	C	B			F	C	C	F
Approach Delay (s)		70.6			97.1					427.7		
Approach LOS		E			F					F		

Intersection Summary

HCM 2000 Control Delay	184.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

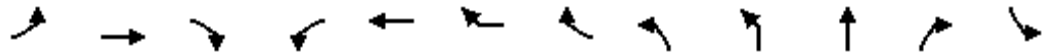
11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	333	106	222
Future Volume (vph)	333	106	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3411		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3411		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	362	115	241
RTOR Reduction (vph)	0	0	180
Lane Group Flow (vph)	477	0	61
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.8		15.8
Effective Green, g (s)	15.8		15.8
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	865		401
v/s Ratio Prot	0.14		
v/s Ratio Perm			0.04
v/c Ratio	0.55		0.15
Uniform Delay, d1	20.2		18.1
Progression Factor	1.00		1.00
Incremental Delay, d2	0.8		0.2
Delay (s)	20.9		18.2
Level of Service	C		B
Approach Delay (s)	45.1		
Approach LOS	D		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	345	863	338	221	270	373	130	162	494	514	366	152
Future Volume (vph)	345	863	338	221	270	373	130	162	494	514	366	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	3433	3146	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	3433	3146	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	375	938	367	240	293	405	141	176	537	559	398	165
RTOR Reduction (vph)	0	0	233	0	0	125	0	0	0	0	157	0
Lane Group Flow (vph)	375	938	134	240	564	150	0	0	713	559	241	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1022	457	275	908	416			232	925	414	142
v/s Ratio Prot	c0.11	c0.27		0.07	0.18					c0.16		0.09
v/s Ratio Perm			0.08			0.10			c0.27		0.15	
v/c Ratio	1.36	0.92	0.29	0.87	0.62	0.36			3.07	0.60	0.58	1.16
Uniform Delay, d1	28.6	21.4	17.2	28.3	19.2	17.6			28.4	20.2	20.0	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	185.3	12.6	0.4	24.8	1.3	0.5			944.3	1.1	2.1	125.6
Delay (s)	214.0	34.0	17.6	53.1	20.5	18.1			972.7	21.3	22.1	154.3
Level of Service	F	C	B	D	C	B			F	C	C	F
Approach Delay (s)		70.6			27.2					427.7		
Approach LOS		E			C					F		

Intersection Summary

HCM 2000 Control Delay	169.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis AM

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	333	106	222
Future Volume (vph)	333	106	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.96		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3411		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3411		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	362	115	241
RTOR Reduction (vph)	0	0	180
Lane Group Flow (vph)	477	0	61
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.8		15.8
Effective Green, g (s)	15.8		15.8
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	865		401
v/s Ratio Prot	0.14		
v/s Ratio Perm			0.04
v/c Ratio	0.55		0.15
Uniform Delay, d1	20.2		18.1
Progression Factor	1.00		1.00
Incremental Delay, d2	0.8		0.2
Delay (s)	20.9		18.2
Level of Service	C		B
Approach Delay (s)	45.1		
Approach LOS	D		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis AM

12: Skyline Blvd. & Hickey Blvd. MITIGATION

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	721	433	170	71	178	323	112	963	106	293	502	330	
Future Volume (vph)	721	433	170	71	178	323	112	963	106	293	502	330	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	0.91	0.91			0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.98			0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1610	3241			3489	1554	1770	3539	1560	1770	3539	1583	
Flt Permitted	0.95	0.98			0.60	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1610	3241			2140	1554	1770	3539	1560	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	743	446	175	83	207	376	129	1107	122	329	564	371	
RTOR Reduction (vph)	0	13	0	0	0	184	0	0	53	0	0	239	
Lane Group Flow (vph)	453	898	0	0	290	192	129	1107	69	329	564	132	
Confl. Peds. (#/hr)	2					2			1	1			
Confl. Bikes (#/hr)						1							
Turn Type	Split	NA		Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases				8		8			2			6	
Actuated Green, G (s)	44.6	44.6			18.0	18.0	15.5	45.0	45.0	23.5	53.0	53.0	
Effective Green, g (s)	44.6	44.6			18.0	18.0	15.5	45.0	45.0	23.5	53.0	53.0	
Actuated g/C Ratio	0.30	0.30			0.12	0.12	0.10	0.30	0.30	0.16	0.36	0.36	
Clearance Time (s)	4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	481	969			258	187	184	1068	470	278	1257	562	
v/s Ratio Prot	c0.28	0.28					0.07	c0.31		c0.19	0.16		
v/s Ratio Perm					c0.14	0.12			0.04			0.08	
v/c Ratio	0.94	0.93			1.24dl	1.03	0.70	1.04	0.15	1.18	0.45	0.23	
Uniform Delay, d1	51.0	50.7			65.5	65.5	64.6	52.0	38.0	62.8	36.8	33.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.0	14.3			93.5	73.3	11.4	37.4	0.1	113.1	0.3	0.2	
Delay (s)	78.0	65.0			159.1	138.9	76.0	89.5	38.2	175.9	37.1	34.0	
Level of Service	E	E			F	F	E	F	D	F	D	C	
Approach Delay (s)		69.3			147.7			83.6			72.3		
Approach LOS		E			F			F			E		
Intersection Summary													
HCM 2000 Control Delay			85.5		HCM 2000 Level of Service				F				
HCM 2000 Volume to Capacity ratio			1.04										
Actuated Cycle Length (s)			149.1		Sum of lost time (s)				18.0				
Intersection Capacity Utilization			90.9%		ICU Level of Service				E				
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													

HCM 6th TWSC PM
1: Gellert Blvd. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	8	219	485	14	201	741
Future Vol, veh/h	8	219	485	14	201	741
Conflicting Peds, #/hr	5	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	274	522	15	218	805

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1774	528	0	0	543	0
Stage 1	528	-	-	-	-	-
Stage 2	1246	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	91	550	-	-	1026	-
Stage 1	592	-	-	-	-	-
Stage 2	271	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	71	547	-	-	1020	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	212	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.6	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	-	71	547	1020	-
HCM Lane V/C Ratio	-	-	0.141	0.5	0.214	-
HCM Control Delay (s)	-	-	63.8	18	9.5	-
HCM Lane LOS	-	-	F	C	A	-
HCM 95th %tile Q(veh)	-	-	0.5	2.8	0.8	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	185	10	2	191	0	4
Future Vol, veh/h	185	10	2	191	0	4
Conflicting Peds, #/hr	0	1	1	0	4	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	206	11	3	242	0	5

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	218	0	465	218
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1352	-	556	822
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1351	-	552	817
Mov Cap-2 Maneuver	-	-	-	-	552	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	817	-	-	1351	-
HCM Lane V/C Ratio	0.007	-	-	0.002	-
HCM Control Delay (s)	9.4	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	1	17	0	0	19	7	48	1	59	38	24
Future Vol, veh/h	9	1	17	0	0	19	7	48	1	59	38	24
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	2	2	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	84	84	84	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	1	21	0	0	38	8	57	1	66	43	27

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	287	270	63	277	283	60	75	0	0	60	0	0
Stage 1	194	194	-	76	76	-	-	-	-	-	-	-
Stage 2	93	76	-	201	207	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	665	636	1002	675	626	1005	1524	-	-	1544	-	-
Stage 1	808	740	-	933	832	-	-	-	-	-	-	-
Stage 2	914	832	-	801	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	612	600	996	632	591	1003	1517	-	-	1541	-	-
Mov Cap-2 Maneuver	612	600	-	632	591	-	-	-	-	-	-	-
Stage 1	800	703	-	926	826	-	-	-	-	-	-	-
Stage 2	875	826	-	747	694	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.7		8.7		0.9		3.6	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1517	-	-	807 1003	1541	-	-
HCM Lane V/C Ratio	0.005	-	-	0.042 0.038 0.043	-	-	-
HCM Control Delay (s)	7.4	0	-	9.7 8.7 7.4	0	-	-
HCM Lane LOS	A	A	-	A A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1 0.1 0.1	-	-	-

HCM 6th TWSC PM
4: Serravista Ave. & Driveway

11/07/2022

Intersection

Int Delay, s/veh 5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	59	102	71	9	22	171
Future Vol, veh/h	59	102	71	9	22	171
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	111	77	10	24	186

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	87	0	-	0	321 82
Stage 1	-	-	-	-	82 -
Stage 2	-	-	-	-	239 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1509	-	-	-	673 978
Stage 1	-	-	-	-	941 -
Stage 2	-	-	-	-	801 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1509	-	-	-	643 978
Mov Cap-2 Maneuver	-	-	-	-	643 -
Stage 1	-	-	-	-	899 -
Stage 2	-	-	-	-	801 -

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1509	-	-	-	923
HCM Lane V/C Ratio	0.042	-	-	-	0.227
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

HCM 6th Signalized Intersection Summary PM

5: Junipero Serra Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	893	273	139	557	825	150	406	117	386	454	226
Future Volume (veh/h)	283	893	273	139	557	825	150	406	117	386	454	226
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	292	921	0	148	593	0	165	446	0	424	499	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	1598		277	691		412	1454		437	1454	
Arrive On Green	0.43	0.43	0.00	0.43	0.43	0.00	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	824	3741	0	341	1617	1585	898	3647	0	943	3554	1585
Grp Volume(v), veh/h	292	921	0	148	593	0	165	446	0	424	499	0
Grp Sat Flow(s),veh/h/ln	824	1870	0	341	1617	1585	898	1777	0	943	1777	1585
Q Serve(g_s), s	5.3	10.3	0.0	13.2	18.2	0.0	8.5	4.7	0.0	17.8	5.3	0.0
Cycle Q Clear(g_c), s	23.5	10.3	0.0	23.5	18.2	0.0	13.8	4.7	0.0	22.5	5.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	210	1598		277	691		412	1454		437	1454	
V/C Ratio(X)	1.39	0.58		0.53	0.86		0.40	0.31		0.97	0.34	
Avail Cap(c_a), veh/h	210	1598		277	691		412	1454		437	1454	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.5	12.0	0.0	21.0	14.2	0.0	15.9	11.0	0.0	21.1	11.2	0.0
Incr Delay (d2), s/veh	203.2	0.5	0.0	2.0	10.5	0.0	0.6	0.1	0.0	35.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	3.6	0.0	1.8	7.3	0.0	1.5	1.5	0.0	9.3	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	229.7	12.5	0.0	23.0	24.8	0.0	16.6	11.1	0.0	56.5	11.3	0.0
LnGrp LOS	F	B		C	C		B	B		E	B	
Approach Vol, veh/h		1213			741			611			923	
Approach Delay, s/veh		64.8			24.4			12.6			32.1	
Approach LOS		E			C			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		28.0		27.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		23.5		22.5		23.5				
Max Q Clear Time (g_c+I1), s		15.8		25.5		24.5		25.5				
Green Ext Time (p_c), s		2.0		0.0		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷	↷		↷	↷
Traffic Volume (veh/h)	195	813	207	213	767	53	869	75	423	134	91	3
Future Volume (veh/h)	195	813	207	213	767	53	869	75	423	134	91	3
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		0.99	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	884	0	222	799	51	1004	0	209	147	100	0
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	993		236	944	60	1070	0	476	156	106	229
Arrive On Green	0.13	0.28	0.00	0.13	0.28	0.28	0.30	0.00	0.30	0.14	0.14	0.00
Sat Flow, veh/h	1781	3647	0	1781	3390	216	3563	0	1585	1081	735	1585
Grp Volume(v), veh/h	212	884	0	222	419	431	1004	0	209	247	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1830	1781	0	1585	1816	0	1585
Q Serve(g_s), s	14.7	29.9	0.0	15.5	27.9	27.9	34.4	0.0	13.3	16.9	0.0	0.0
Cycle Q Clear(g_c), s	14.7	29.9	0.0	15.5	27.9	27.9	34.4	0.0	13.3	16.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	0.60		1.00
Lane Grp Cap(c), veh/h	237	993		236	495	510	1070	0	476	262	0	229
V/C Ratio(X)	0.89	0.89		0.94	0.85	0.85	0.94	0.00	0.44	0.94	0.00	0.00
Avail Cap(c_a), veh/h	246	1091		236	536	552	1102	0	490	262	0	229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.5	43.3	0.0	53.9	42.7	42.7	42.7	0.0	35.4	53.1	0.0	0.0
Incr Delay (d2), s/veh	30.4	8.8	0.0	42.6	11.3	11.0	14.5	0.0	0.6	40.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	14.2	0.0	9.7	13.6	14.0	16.7	0.0	5.2	10.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	52.1	0.0	96.5	54.0	53.7	57.2	0.0	36.0	93.2	0.0	0.0
LnGrp LOS	F	D		F	D	D	E	A	D	F	A	A
Approach Vol, veh/h		1096			1072			1213			247	
Approach Delay, s/veh		58.3			62.7			53.5			93.2	
Approach LOS		E			E			D			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		42.2	21.1	39.5		22.6	21.2	39.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		36.4	17.5	31.9		18.9	16.7	29.9				
Green Ext Time (p_c), s		1.2	0.0	3.1		0.0	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	60.4
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

7: I-280 SB Ramps & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	599	847	180	1432	0	0	0	0	665	5	391
Future Volume (veh/h)	0	599	847	180	1432	0	0	0	0	665	5	391
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	697	0	188	1492	0				867	0	288
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1370		298	1950	0				1061	0	472
Arrive On Green	0.00	0.39	0.00	0.09	0.55	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	697	0	188	1492	0				867	0	288
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	8.8	0.0	3.1	19.1	0.0				13.2	0.0	9.1
Cycle Q Clear(g_c), s	0.0	8.8	0.0	3.1	19.1	0.0				13.2	0.0	9.1
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1370		298	1950	0				1061	0	472
V/C Ratio(X)	0.00	0.51		0.63	0.77	0.00				0.82	0.00	0.61
Avail Cap(c_a), veh/h	0	1607		560	2456	0				1246	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.8	0.0	25.9	10.3	0.0				19.1	0.0	17.7
Incr Delay (d2), s/veh	0.0	0.3	0.0	2.2	1.1	0.0				3.8	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	0.0	1.3	5.8	0.0				5.1	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.1	0.0	28.1	11.4	0.0				22.9	0.0	19.1
LnGrp LOS	A	B		C	B	A				C	A	B
Approach Vol, veh/h		697			1680						1155	
Approach Delay, s/veh		14.1			13.3						21.9	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			9.6	27.1		21.9			36.6			
Change Period (Y+Rc), s			4.5	4.5		4.5			4.5			
Max Green Setting (Gmax), s			9.5	26.5		20.5			40.5			
Max Q Clear Time (g_c+I1), s			5.1	10.8		15.2			21.1			
Green Ext Time (p_c), s			0.2	4.2		2.2			11.0			
Intersection Summary												
HCM 6th Ctrl Delay			16.3									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC PM
8: Driveway & Hickey Blvd.

11/07/2022

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1158	26	80	1663	0	256
Future Vol, veh/h	1158	26	80	1663	0	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1259	28	87	1808	0	278

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	644
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	416
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	416
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	29.5
HCM LOS		D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	416	-	-
HCM Lane V/C Ratio	0.669	-	-
HCM Control Delay (s)	29.5	-	-
HCM Lane LOS	D	-	-
HCM 95th %tile Q(veh)	4.8	-	-

HCM 6th Signalized Intersection Summary PM

9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗↗	↘	↘↘	↗↗	↘	↘	↗↗	↘	↘	↗↗	↘
Traffic Volume (veh/h)	118	415	41	489	426	783	144	422	193	573	413	240
Future Volume (veh/h)	118	415	41	489	426	783	144	422	193	573	413	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	149	525	20	537	468	485	158	464	59	637	459	33
Peak Hour Factor	0.79	0.79	0.79	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	802	348	620	1115	492	307	644	265	763	401	331
Arrive On Green	0.09	0.23	0.23	0.18	0.31	0.31	0.17	0.17	0.17	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1540	3456	3554	1567	1781	3741	1538	3563	1870	1547
Grp Volume(v), veh/h	149	525	20	537	468	485	158	464	59	637	459	33
Grp Sat Flow(s),veh/h/ln	1781	1777	1540	1728	1777	1567	1781	1870	1538	1781	1870	1547
Q Serve(g_s), s	7.2	11.6	0.9	13.0	9.0	26.6	7.0	10.1	2.9	14.8	18.5	1.5
Cycle Q Clear(g_c), s	7.2	11.6	0.9	13.0	9.0	26.6	7.0	10.1	2.9	14.8	18.5	1.5
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	163	802	348	620	1115	492	307	644	265	763	401	331
V/C Ratio(X)	0.91	0.65	0.06	0.87	0.42	0.99	0.51	0.72	0.22	0.83	1.15	0.10
Avail Cap(c_a), veh/h	163	802	348	680	1115	492	381	801	329	763	401	331
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	30.4	26.2	34.4	23.4	29.5	32.5	33.8	30.8	32.5	33.9	27.3
Incr Delay (d2), s/veh	46.4	1.9	0.1	10.7	0.3	37.0	1.3	2.4	0.4	8.0	91.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	5.0	0.3	6.2	3.6	14.4	3.1	4.7	1.1	7.0	18.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.3	32.3	26.3	45.1	23.7	66.5	33.8	36.2	31.2	40.5	125.0	27.4
LnGrp LOS	F	C	C	D	C	E	C	D	C	D	F	C
Approach Vol, veh/h		694			1490			681			1129	
Approach Delay, s/veh		43.5			45.3			35.2			74.5	
Approach LOS		D			D			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.4	20.0	24.0		23.0	12.4	31.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.0	18.0		18.5	7.9	27.1				
Max Q Clear Time (g_c+I1), s		12.1	15.0	13.6		20.5	9.2	28.6				
Green Ext Time (p_c), s		2.0	0.5	1.4		0.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	51.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary PM
10: Callan Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	158	465	99	69	645	133	42	183	34	40	192	241
Future Volume (veh/h)	158	465	99	69	645	133	42	183	34	40	192	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	180	528	112	76	709	146	49	215	40	43	204	256
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.85	0.85	0.85	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	973	205	100	780	161	79	460	86	73	222	279
Arrive On Green	0.12	0.33	0.33	0.06	0.27	0.27	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	1781	2914	615	1781	2928	603	1781	1529	284	1781	746	936
Grp Volume(v), veh/h	180	321	319	76	430	425	49	0	255	43	0	460
Grp Sat Flow(s),veh/h/ln	1781	1777	1753	1781	1777	1754	1781	0	1813	1781	0	1682
Q Serve(g_s), s	6.6	9.9	10.0	2.8	15.8	15.8	1.8	0.0	7.7	1.6	0.0	17.8
Cycle Q Clear(g_c), s	6.6	9.9	10.0	2.8	15.8	15.8	1.8	0.0	7.7	1.6	0.0	17.8
Prop In Lane	1.00		0.35	1.00		0.34	1.00		0.16	1.00		0.56
Lane Grp Cap(c), veh/h	221	593	585	100	473	467	79	0	546	73	0	501
V/C Ratio(X)	0.82	0.54	0.55	0.76	0.91	0.91	0.62	0.00	0.47	0.59	0.00	0.92
Avail Cap(c_a), veh/h	225	593	585	191	476	469	132	0	550	135	0	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.7	18.2	18.2	31.3	23.9	23.9	31.6	0.0	19.1	31.7	0.0	22.8
Incr Delay (d2), s/veh	20.0	1.0	1.1	11.0	21.2	21.6	7.6	0.0	0.6	7.3	0.0	21.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	3.8	3.8	1.5	8.8	8.7	0.9	0.0	3.1	0.8	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	19.2	19.3	42.2	45.1	45.4	39.1	0.0	19.7	39.0	0.0	44.3
LnGrp LOS	D	B	B	D	D	D	D	A	B	D	A	D
Approach Vol, veh/h		820			931			304				503
Approach Delay, s/veh		25.7			45.0			22.9				43.9
Approach LOS		C			D			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	24.7	8.3	26.9	7.5	24.5	12.8	22.4				
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	5.1	20.4	7.2	19.3	5.0	20.5	8.5	18.0				
Max Q Clear Time (g_c+I1), s	3.6	9.7	4.8	12.0	3.8	19.8	8.6	17.8				
Green Ext Time (p_c), s	0.0	1.0	0.0	2.3	0.0	0.2	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay				36.0								
HCM 6th LOS				D								

HCM 6th Signalized Intersection Summary PM
 11: Hickey Blvd. & Campus Dr.

11/07/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	131	148	805	922	108
Future Volume (veh/h)	101	131	148	805	922	108
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.99
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	128	166	159	866	1013	119
Peak Hour Factor	0.79	0.79	0.93	0.93	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	162	210	196	2067	1199	141
Arrive On Green	0.22	0.22	0.11	0.58	0.37	0.37
Sat Flow, veh/h	720	933	1781	3647	3293	376
Grp Volume(v), veh/h	295	0	159	866	562	570
Grp Sat Flow(s),veh/h/ln	1659	0	1781	1777	1777	1798
Q Serve(g_s), s	7.8	0.0	4.1	6.3	13.4	13.5
Cycle Q Clear(g_c), s	7.8	0.0	4.1	6.3	13.4	13.5
Prop In Lane	0.43	0.56	1.00			0.21
Lane Grp Cap(c), veh/h	372	0	196	2067	666	674
V/C Ratio(X)	0.79	0.00	0.81	0.42	0.84	0.85
Avail Cap(c_a), veh/h	643	0	196	2143	704	713
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	17.0	0.0	20.2	5.4	13.3	13.3
Incr Delay (d2), s/veh	3.8	0.0	22.3	0.1	8.9	8.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	2.7	1.3	5.7	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	0.0	42.5	5.5	22.2	22.1
LnGrp LOS	C	A	D	A	C	C
Approach Vol, veh/h	295			1025	1132	
Approach Delay, s/veh	20.8			11.2	22.2	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		31.5		14.9	9.6	21.9
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.1	18.4
Max Q Clear Time (g_c+I1), s		8.3		9.8	6.1	15.5
Green Ext Time (p_c), s		5.9		0.6	0.0	1.9

Intersection Summary

HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis PM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	290	140	153	375	327	177	625	101	230	656	655
Future Volume (vph)	384	290	140	153	375	327	177	625	101	230	656	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1756	1583		3489	1548	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.74	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1756	1583		2616	1548	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	417	315	152	161	395	344	186	658	106	242	691	689
RTOR Reduction (vph)	0	0	101	0	0	200	0	0	83	0	0	362
Lane Group Flow (vph)	359	373	51	0	556	144	186	658	23	242	691	327
Confl. Peds. (#/hr)	7					7						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	18.5	18.5	18.5		21.1	21.1	10.1	19.6	19.6	11.9	21.4	21.4
Effective Green, g (s)	18.5	18.5	18.5		21.1	21.1	10.1	19.6	19.6	11.9	21.4	21.4
Actuated g/C Ratio	0.21	0.21	0.21		0.24	0.24	0.11	0.22	0.22	0.13	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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
Lane Grp Cap (vph)	349	364	328		619	366	200	778	348	236	849	380
v/s Ratio Prot	c0.21	0.21					0.11	0.19		c0.14	0.20	
v/s Ratio Perm			0.03		c0.21	0.09			0.01			c0.21
v/c Ratio	1.03	1.02	0.16		0.90	0.39	0.93	0.85	0.07	1.03	0.81	0.86
Uniform Delay, d1	35.3	35.3	28.9		33.0	28.6	39.1	33.3	27.5	38.6	32.0	32.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	55.7	53.6	0.2		15.7	0.7	44.2	8.4	0.1	65.3	6.0	17.8
Delay (s)	91.0	88.9	29.1		48.7	29.3	83.3	41.7	27.6	103.9	38.0	50.2
Level of Service	F	F	C		D	C	F	D	C	F	D	D
Approach Delay (s)		79.5			41.3			48.3			53.0	
Approach LOS		E			D			D			D	

Intersection Summary		
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.96	D
Actuated Cycle Length (s)	89.1	Sum of lost time (s)
Intersection Capacity Utilization	78.1%	18.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		D

Intersection

Intersection Delay, s/veh 33

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	102	14	19	24	14	25	35	241	15	22	438	160
Future Vol, veh/h	102	14	19	24	14	25	35	241	15	22	438	160
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.87	0.87	0.87	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	126	17	23	29	17	30	40	277	17	24	476	174
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.1	11.2	15.6	49
HCM LOS	B	B	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	76%	38%	4%
Vol Thru, %	83%	10%	22%	71%
Vol Right, %	5%	14%	40%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	135	63	620
LT Vol	35	102	24	22
Through Vol	241	14	14	438
RT Vol	15	19	25	160
Lane Flow Rate	334	167	77	674
Geometry Grp	1	1	1	1
Degree of Util (X)	0.544	0.318	0.149	0.966
Departure Headway (Hd)	5.855	6.878	6.976	5.162
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	619	525	516	694
Service Time	3.855	4.898	5	3.256
HCM Lane V/C Ratio	0.54	0.318	0.149	0.971
HCM Control Delay	15.6	13.1	11.2	49
HCM Lane LOS	C	B	B	E
HCM 95th-tile Q	3.3	1.4	0.5	14.4

HCM 6th Signalized Intersection Summary PM

14: Gellert Blvd. & Serramonte Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	458	282	667	484	711	393	356	731	492	371	65
Future Volume (veh/h)	64	458	282	667	484	711	393	356	731	492	371	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	526	324	681	494	0	427	387	795	523	395	69
Peak Hour Factor	0.87	0.87	0.87	0.98	0.98	0.98	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	95	705	531	673	636		496	434	1315	602	412	72
Arrive On Green	0.05	0.20	0.20	0.19	0.34	0.00	0.14	0.23	0.23	0.17	0.27	0.27
Sat Flow, veh/h	1781	3554	1563	3456	1870	2790	3563	1870	3006	3456	1543	270
Grp Volume(v), veh/h	74	526	324	681	494	0	427	387	795	523	0	464
Grp Sat Flow(s),veh/h/ln	1781	1777	1563	1728	1870	1395	1781	1870	1503	1728	0	1813
Q Serve(g_s), s	3.7	12.5	15.6	17.5	21.3	0.0	10.5	18.0	18.5	13.2	0.0	22.6
Cycle Q Clear(g_c), s	3.7	12.5	15.6	17.5	21.3	0.0	10.5	18.0	18.5	13.2	0.0	22.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	95	705	531	673	636		496	434	1315	602	0	484
V/C Ratio(X)	0.78	0.75	0.61	1.01	0.78		0.86	0.89	0.60	0.87	0.00	0.96
Avail Cap(c_a), veh/h	131	712	534	673	636		496	434	1315	658	0	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	33.9	24.9	36.2	26.6	0.0	37.8	33.4	20.1	36.1	0.0	32.4
Incr Delay (d2), s/veh	17.9	4.3	2.0	37.6	6.1	0.0	14.4	20.1	0.8	11.2	0.0	30.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.7	5.9	10.7	10.2	0.0	5.5	10.4	6.3	6.4	0.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	38.1	26.9	73.8	32.6	0.0	52.2	53.5	20.9	47.3	0.0	62.8
LnGrp LOS	E	D	C	F	C		D	D	C	D	A	E
Approach Vol, veh/h		924			1175			1609			987	
Approach Delay, s/veh		35.9			56.5			37.0			54.6	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.2	25.3	22.0	22.3	17.0	28.5	9.3	35.0				
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	17.1	19.4	17.5	18.0	12.5	24.0	6.6	28.9				
Max Q Clear Time (g_c+I1), s	15.2	20.5	19.5	17.6	12.5	24.6	5.7	23.3				
Green Ext Time (p_c), s	0.4	0.0	0.0	0.2	0.0	0.0	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	45.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

15: Serramonte Blvd. & I-280 SB Ramps

11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1714	947	0	820	987
Future Volume (veh/h)	0	1714	947	0	820	987
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1804	1041	0	863	1039
Peak Hour Factor	0.95	0.95	0.91	0.91	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1688	2425	0	1296	1046
Arrive On Green	0.00	0.47	0.47	0.00	0.38	0.38
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1804	1041	0	863	1039
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	28.5	8.1	0.0	12.5	22.3
Cycle Q Clear(g_c), s	0.0	28.5	8.1	0.0	12.5	22.3
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1688	2425	0	1296	1046
V/C Ratio(X)	0.00	1.07	0.43	0.00	0.67	0.99
Avail Cap(c_a), veh/h	0	1688	2425	0	1296	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	10.4	0.0	15.6	18.7
Incr Delay (d2), s/veh	0.0	42.9	0.1	0.0	2.7	26.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	19.5	2.6	0.0	4.4	9.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	58.6	10.5	0.0	18.3	44.9
LnGrp LOS	A	F	B	A	B	D
Approach Vol, veh/h		1804	1041		1902	
Approach Delay, s/veh		58.6	10.5		32.9	
Approach LOS		E	B		C	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				33.0	27.0	33.0
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				28.5	22.5	28.5
Max Q Clear Time (g_c+I1), s				30.5	24.3	10.1
Green Ext Time (p_c), s				0.0	0.0	7.2
Intersection Summary						
HCM 6th Ctrl Delay			37.8			
HCM 6th LOS			D			

HCM 6th Signalized Intersection Summary PM

16: Serramonte Blvd. & I-280 NB Ramps

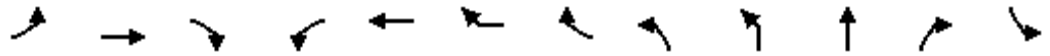
11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	747	1791	958	15	0	0
Future Volume (veh/h)	747	1791	958	15	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	770	1846	1053	16		
Peak Hour Factor	0.97	0.97	0.91	0.91		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1031	3071	1541	23		
Arrive On Green	0.30	0.86	0.43	0.43		
Sat Flow, veh/h	3456	3647	3675	54		
Grp Volume(v), veh/h	770	1846	522	547		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1859		
Q Serve(g_s), s	6.7	4.9	7.9	7.9		
Cycle Q Clear(g_c), s	6.7	4.9	7.9	7.9		
Prop In Lane	1.00			0.03		
Lane Grp Cap(c), veh/h	1031	3071	765	800		
V/C Ratio(X)	0.75	0.60	0.68	0.68		
Avail Cap(c_a), veh/h	1302	3804	991	1037		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.5	0.6	7.6	7.6		
Incr Delay (d2), s/veh	1.8	0.2	1.3	1.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.0	0.1	2.0	2.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.3	0.8	8.9	8.9		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2616	1069			
Approach Delay, s/veh		4.2	8.9			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				33.2	14.4	18.8
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	12.5	18.5
Max Q Clear Time (g_c+I1), s				6.9	8.7	9.9
Green Ext Time (p_c), s				18.7	1.2	4.4
Intersection Summary						
HCM 6th Ctrl Delay			5.6			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	520	937	295	399	620	540	130	162	520	529	296	177
Future Volume (vph)	520	937	295	399	620	540	130	162	520	529	296	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	1770	3223	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	1770	3223	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	571	1030	324	443	689	600	144	178	571	581	325	190
RTOR Reduction (vph)	0	0	216	0	0	125	0	0	0	0	151	0
Lane Group Flow (vph)	571	1030	108	443	989	319	0	0	749	581	174	190
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.7	16.7	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.7	16.7	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.27	0.27	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	1015	446	141	925	407			230	942	414	141
v/s Ratio Prot	0.17	0.29		c0.25	c0.31					0.16		0.11
v/s Ratio Perm			0.07			0.22			c0.28		0.11	
v/c Ratio	2.09	1.01	0.24	3.14	1.07	0.78			3.26	0.62	0.42	1.35
Uniform Delay, d1	28.9	22.4	17.1	28.9	22.4	20.6			28.6	20.2	19.0	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	503.5	32.0	0.3	982.2	49.9	9.5			1026.6	1.2	0.7	195.9
Delay (s)	532.4	54.3	17.4	1011.1	72.2	30.0			1055.2	21.4	19.7	224.7
Level of Service	F	D	B	F	E	C			F	C	B	F
Approach Delay (s)		189.9			283.9					488.9		
Approach LOS		F			F					F		
Intersection Summary												
HCM 2000 Control Delay			272.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.43									
Actuated Cycle Length (s)			62.7			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			98.6%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022

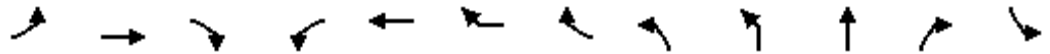


Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	372	184	222
Future Volume (vph)	372	184	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3349		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3349		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	400	198	239
RTOR Reduction (vph)	0	0	173
Lane Group Flow (vph)	598	0	66
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	16.2		16.2
Effective Green, g (s)	16.2		16.2
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	865		403
v/s Ratio Prot	c0.18		
v/s Ratio Perm			0.04
v/c Ratio	0.69		0.16
Uniform Delay, d1	21.0		18.0
Progression Factor	1.00		1.00
Incremental Delay, d2	2.4		0.2
Delay (s)	23.4		18.2
Level of Service	C		B
Approach Delay (s)	59.4		
Approach LOS	E		
Intersection Summary			

HCM Signalized Intersection Capacity Analysis PM

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	520	937	295	399	620	540	130	162	520	529	296	177
Future Volume (vph)	520	937	295	399	620	540	130	162	520	529	296	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	3433	3223	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	3433	3223	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	571	1030	324	443	689	600	144	178	571	581	325	190
RTOR Reduction (vph)	0	0	216	0	0	125	0	0	0	0	151	0
Lane Group Flow (vph)	571	1030	108	443	989	319	0	0	749	581	174	190
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.7	16.7	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.7	16.7	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.27	0.27	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	273	1015	446	273	925	407			230	942	414	141
v/s Ratio Prot	c0.17	0.29		0.13	c0.31					0.16		0.11
v/s Ratio Perm			0.07			0.22			c0.28		0.11	
v/c Ratio	2.09	1.01	0.24	1.62	1.07	0.78			3.26	0.62	0.42	1.35
Uniform Delay, d1	28.9	22.4	17.1	28.9	22.4	20.6			28.6	20.2	19.0	28.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	503.5	32.0	0.3	296.5	49.9	9.5			1026.6	1.2	0.7	195.9
Delay (s)	532.4	54.3	17.4	325.3	72.2	30.0			1055.2	21.4	19.7	224.7
Level of Service	F	D	B	F	E	C			F	C	B	F
Approach Delay (s)		189.9			122.0					488.9		
Approach LOS		F			F					F		
Intersection Summary												
HCM 2000 Control Delay			225.9			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.31									
Actuated Cycle Length (s)			62.7			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			93.1%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis PM

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	372	184	222
Future Volume (vph)	372	184	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3349		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3349		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	400	198	239
RTOR Reduction (vph)	0	0	173
Lane Group Flow (vph)	598	0	66
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	16.2		16.2
Effective Green, g (s)	16.2		16.2
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	865		403
v/s Ratio Prot	c0.18		
v/s Ratio Perm			0.04
v/c Ratio	0.69		0.16
Uniform Delay, d1	21.0		18.0
Progression Factor	1.00		1.00
Incremental Delay, d2	2.4		0.2
Delay (s)	23.4		18.2
Level of Service	C		B
Approach Delay (s)	59.4		
Approach LOS	E		
Intersection Summary			

HCM 6th Signalized Intersection Summary PM
6: I-280 NB Ramps & Hickey Blvd. MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	195	813	207	213	767	53	869	75	423	134	91	3
Future Volume (veh/h)	195	813	207	213	767	53	869	75	423	134	91	3
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		0.99	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	884	0	222	799	51	1004	0	209	124	133	0
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	1037		251	1006	64	1107	0	492	168	176	149
Arrive On Green	0.14	0.29	0.00	0.14	0.30	0.30	0.31	0.00	0.31	0.09	0.09	0.00
Sat Flow, veh/h	1781	3647	0	1781	3391	216	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	212	884	0	222	419	431	1004	0	209	124	133	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1830	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	12.9	26.0	0.0	13.5	24.0	24.0	29.9	0.0	11.6	7.5	7.7	0.0
Cycle Q Clear(g_c), s	12.9	26.0	0.0	13.5	24.0	24.0	29.9	0.0	11.6	7.5	7.7	0.0
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	242	1037		251	527	543	1107	0	492	168	176	149
V/C Ratio(X)	0.88	0.85		0.88	0.79	0.79	0.91	0.00	0.42	0.74	0.76	0.00
Avail Cap(c_a), veh/h	278	1236		267	607	625	1207	0	537	312	328	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.9	37.0	0.0	46.7	35.8	35.8	36.6	0.0	30.3	48.8	48.9	0.0
Incr Delay (d2), s/veh	23.2	5.2	0.0	26.7	6.3	6.2	9.5	0.0	0.6	6.3	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	11.7	0.0	7.8	11.1	11.4	13.8	0.0	4.4	3.6	3.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.2	42.1	0.0	73.4	42.1	42.0	46.2	0.0	30.9	55.1	55.3	0.0
LnGrp LOS	E	D		E	D	D	D	A	C	E	E	A
Approach Vol, veh/h		1096			1072			1213			257	
Approach Delay, s/veh		47.5			48.5			43.5			55.2	
Approach LOS		D			D			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		38.9	20.1	36.8		14.9	19.5	37.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		37.5	16.6	38.5		19.4	17.3	37.8				
Max Q Clear Time (g_c+I1), s		31.9	15.5	28.0		9.7	14.9	26.0				
Green Ext Time (p_c), s		2.4	0.1	4.3		0.7	0.1	4.1				

Intersection Summary

HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

**Appendix G – Cumulative plus Project Alternative 2 Conditions
Intersection Level of Service Worksheets**

HCM 6th TWSC AM
1: Gellert Blvd. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	9	137	698	17	162	311
Future Vol, veh/h	9	137	698	17	162	311
Conflicting Peds, #/hr	5	2	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	73	73	91	91	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	188	767	19	180	346

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1481	772	0	0	789
Stage 1	770	-	-	-	-
Stage 2	711	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	138	400	-	-	831
Stage 1	457	-	-	-	-
Stage 2	487	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	107	398	-	-	829
Mov Cap-2 Maneuver	107	-	-	-	-
Stage 1	456	-	-	-	-
Stage 2	379	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.2	0	3.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	107	398	829	-
HCM Lane V/C Ratio	-	-	0.115	0.472	0.217	-
HCM Control Delay (s)	-	-	43	21.9	10.5	-
HCM Lane LOS	-	-	E	C	B	-
HCM 95th %tile Q(veh)	-	-	0.4	2.4	0.8	-

HCM 6th TWSC AM
2: Marbly Ave. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	174	9	2	132	14	0
Future Vol, veh/h	174	9	2	132	14	0
Conflicting Peds, #/hr	0	2	2	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	80	80	67	67
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	285	15	3	165	21	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	302	0	467 295
Stage 1	-	-	-	-	295 -
Stage 2	-	-	-	-	172 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1259	-	554 744
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	858 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1257	-	551 743
Mov Cap-2 Maneuver	-	-	-	-	551 -
Stage 1	-	-	-	-	753 -
Stage 2	-	-	-	-	855 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	551	-	-	1257	-
HCM Lane V/C Ratio	0.038	-	-	0.002	-
HCM Control Delay (s)	11.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	0	8	0	9	11	23	114	0	4	36	4
Future Vol, veh/h	16	0	8	0	9	11	23	114	0	4	36	4
Conflicting Peds, #/hr	1	0	0	0	0	1	2	0	5	5	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	45	45	45	55	55	55	68	68	68	65	65	65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	0	18	0	16	20	34	168	0	6	55	6

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	327	313	60	320	316	174	63	0	0	173	0	0
Stage 1	72	72	-	241	241	-	-	-	-	-	-	-
Stage 2	255	241	-	79	75	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	626	602	1005	633	600	869	1540	-	-	1404	-	-
Stage 1	938	835	-	762	706	-	-	-	-	-	-	-
Stage 2	749	706	-	930	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	584	581	1003	606	579	864	1537	-	-	1397	-	-
Mov Cap-2 Maneuver	584	581	-	606	579	-	-	-	-	-	-	-
Stage 1	914	830	-	740	686	-	-	-	-	-	-	-
Stage 2	696	686	-	910	828	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.8		10.4		1.2		0.7	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1537	-	-	678	707	1397	-
HCM Lane V/C Ratio	0.022	-	-	0.079	0.051	0.004	-
HCM Control Delay (s)	7.4	0	-	10.8	10.4	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-

HCM 6th TWSC AM
4: Serravista Ave. & Driveway

11/07/2022

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	95	49	125	14	2	17
Future Vol, veh/h	95	49	125	14	2	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	53	136	15	2	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	151	0	0	403	144
Stage 1	-	-	-	144	-
Stage 2	-	-	-	259	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1430	-	-	603	903
Stage 1	-	-	-	883	-
Stage 2	-	-	-	784	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1430	-	-	558	903
Mov Cap-2 Maneuver	-	-	-	558	-
Stage 1	-	-	-	818	-
Stage 2	-	-	-	784	-

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1430	-	-	-	848
HCM Lane V/C Ratio	0.072	-	-	-	0.024
HCM Control Delay (s)	7.7	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

HCM 6th Signalized Intersection Summary AM

5: Junipero Serra Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↔			↕	↗	↰	↕		↰	↕	↗
Traffic Volume (veh/h)	324	576	167	53	377	552	135	581	131	427	312	236
Future Volume (veh/h)	324	576	167	53	377	552	135	581	131	427	312	236
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	381	678	0	58	410	0	147	632	0	480	351	0
Peak Hour Factor	0.85	0.85	0.85	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	1496		190	1158		504	1421		375	1421	
Arrive On Green	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00
Sat Flow, veh/h	976	3741	0	226	2896	1585	1030	3647	0	795	3554	1585
Grp Volume(v), veh/h	381	678	0	235	233	0	147	632	0	480	351	0
Grp Sat Flow(s),veh/h/ln	976	1870	0	1505	1617	1585	1030	1777	0	795	1777	1585
Q Serve(g_s), s	13.5	6.0	0.0	0.1	4.5	0.0	5.0	5.8	0.0	12.2	3.0	0.0
Cycle Q Clear(g_c), s	18.0	6.0	0.0	6.0	4.5	0.0	7.9	5.8	0.0	18.0	3.0	0.0
Prop In Lane	1.00		0.00	0.25		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	452	1496		702	647		504	1421		375	1421	
V/C Ratio(X)	0.84	0.45		0.34	0.36		0.29	0.44		1.28	0.25	
Avail Cap(c_a), veh/h	452	1496		702	647		504	1421		375	1421	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.3	9.9	0.0	9.3	9.5	0.0	11.6	9.9	0.0	19.0	9.0	0.0
Incr Delay (d2), s/veh	13.5	0.2	0.0	0.3	0.3	0.0	0.3	0.2	0.0	145.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	1.9	0.0	1.2	1.2	0.0	0.9	1.6	0.0	18.6	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.9	10.1	0.0	9.5	9.8	0.0	11.9	10.1	0.0	164.4	9.1	0.0
LnGrp LOS	C	B		A	A		B	B		F	A	
Approach Vol, veh/h		1059			468			779			831	
Approach Delay, s/veh		17.6			9.7			10.4			98.8	
Approach LOS		B			A			B			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.5		22.5		22.5		22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		9.9		20.0		20.0		8.0				
Green Ext Time (p_c), s		2.9		0.0		0.0		2.0				

Intersection Summary

HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM

6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	753	139	114	522	49	572	54	462	163	168	4
Future Volume (veh/h)	130	753	139	114	522	49	572	54	462	163	168	4
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	149	866	0	134	614	50	671	0	274	172	177	1
Peak Hour Factor	0.87	0.87	0.87	0.85	0.85	0.85	0.91	0.91	0.91	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	1082		164	979	80	766	0	341	180	185	317
Arrive On Green	0.10	0.30	0.00	0.09	0.29	0.29	0.22	0.00	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3328	271	3563	0	1585	900	926	1585
Grp Volume(v), veh/h	149	866	0	134	327	337	671	0	274	349	0	1
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1822	1781	0	1585	1825	0	1585
Q Serve(g_s), s	7.8	21.4	0.0	7.1	15.2	15.3	17.4	0.0	15.7	18.1	0.0	0.0
Cycle Q Clear(g_c), s	7.8	21.4	0.0	7.1	15.2	15.3	17.4	0.0	15.7	18.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.15	1.00		1.00	0.49		1.00
Lane Grp Cap(c), veh/h	182	1082		164	523	536	766	0	341	365	0	317
V/C Ratio(X)	0.82	0.80		0.82	0.63	0.63	0.88	0.00	0.80	0.96	0.00	0.00
Avail Cap(c_a), veh/h	274	1544		170	668	685	832	0	370	365	0	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	30.5	0.0	42.6	29.2	29.2	36.3	0.0	35.6	37.8	0.0	30.6
Incr Delay (d2), s/veh	11.0	2.0	0.0	25.1	1.2	1.2	9.8	0.0	11.4	35.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	9.1	0.0	4.2	6.5	6.6	8.2	0.0	6.9	11.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	32.6	0.0	67.7	30.4	30.4	46.1	0.0	47.0	73.4	0.0	30.6
LnGrp LOS	D	C		E	C	C	D	A	D	E	A	C
Approach Vol, veh/h		1015			798			945			350	
Approach Delay, s/veh		35.6			36.7			46.3			73.3	
Approach LOS		D			D			D			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	13.3	33.6		23.6	14.3	32.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		22.3	9.1	41.5		19.1	14.7	35.9				
Max Q Clear Time (g_c+I1), s		19.4	9.1	23.4		20.1	9.8	17.3				
Green Ext Time (p_c), s		1.1	0.0	5.7		0.0	0.1	3.8				

Intersection Summary

HCM 6th Ctrl Delay	43.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM

7: I-280 SB Ramps & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	432	978	206	863	0	0	0	0	604	2	359
Future Volume (veh/h)	0	432	978	206	863	0	0	0	0	604	2	359
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	470	0	224	938	0				779	0	261
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	863		390	1655	0				1118	0	497
Arrive On Green	0.00	0.24	0.00	0.11	0.47	0.00				0.31	0.00	0.31
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	470	0	224	938	0				779	0	261
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	4.7	0.0	2.5	7.8	0.0				7.8	0.0	5.5
Cycle Q Clear(g_c), s	0.0	4.7	0.0	2.5	7.8	0.0				7.8	0.0	5.5
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	863		390	1655	0				1118	0	497
V/C Ratio(X)	0.00	0.54		0.57	0.57	0.00				0.70	0.00	0.52
Avail Cap(c_a), veh/h	0	3089		922	4429	0				1753	0	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.5	0.0	17.2	7.9	0.0				12.3	0.0	11.5
Incr Delay (d2), s/veh	0.0	0.5	0.0	1.3	0.3	0.0				0.8	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	1.6	0.0	0.9	2.0	0.0				2.2	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.0	0.0	18.5	8.2	0.0				13.1	0.0	12.4
LnGrp LOS	A	B		B	A	A				B	A	B
Approach Vol, veh/h		470			1162						1040	
Approach Delay, s/veh		14.0			10.2						12.9	
Approach LOS		B			B						B	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			9.1	14.4		17.3		23.5				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			10.9	35.5		20.1		50.9				
Max Q Clear Time (g_c+I1), s			4.5	6.7		9.8		9.8				
Green Ext Time (p_c), s			0.4	3.2		3.0		7.9				
Intersection Summary												
HCM 6th Ctrl Delay			11.9									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC AM
8: Driveway & Hickey Blvd.

11/07/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1393	42	129	998	0	25
Future Vol, veh/h	1393	42	129	998	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1514	46	140	1085	0	27

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	780
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	338
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	338
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB		NB	
HCM Control Delay, s	0		16.6	
HCM LOS			C	

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	338	-	-
HCM Lane V/C Ratio	0.08	-	-
HCM Control Delay (s)	16.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

HCM 6th Signalized Intersection Summary AM
 9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (veh/h)	89	715	37	304	319	417	46	454	281	418	210	90
Future Volume (veh/h)	89	715	37	304	319	417	46	454	281	418	210	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	106	851	26	338	354	87	53	522	133	486	244	8
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	948	416	425	1114	496	365	767	318	639	335	282
Arrive On Green	0.08	0.27	0.27	0.12	0.31	0.31	0.21	0.21	0.21	0.18	0.18	0.18
Sat Flow, veh/h	1781	3554	1561	3456	3554	1582	1781	3741	1553	3563	1870	1572
Grp Volume(v), veh/h	106	851	26	338	354	87	53	522	133	486	244	8
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1728	1777	1582	1781	1870	1553	1781	1870	1572
Q Serve(g_s), s	4.7	18.4	1.0	7.6	6.0	3.2	1.9	10.3	5.9	10.3	9.8	0.3
Cycle Q Clear(g_c), s	4.7	18.4	1.0	7.6	6.0	3.2	1.9	10.3	5.9	10.3	9.8	0.3
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	136	948	416	425	1114	496	365	767	318	639	335	282
V/C Ratio(X)	0.78	0.90	0.06	0.80	0.32	0.18	0.15	0.68	0.42	0.76	0.73	0.03
Avail Cap(c_a), veh/h	204	977	429	490	1114	496	689	1447	601	805	423	355
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	28.2	21.8	33.9	20.8	19.9	25.9	29.2	27.5	31.1	30.8	27.0
Incr Delay (d2), s/veh	10.7	10.8	0.1	7.8	0.2	0.2	0.2	1.1	0.9	3.3	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.7	0.4	3.5	2.4	1.1	0.8	4.6	2.2	4.6	4.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	38.9	21.8	41.7	21.0	20.0	26.1	30.3	28.4	34.4	35.5	27.0
LnGrp LOS	D	D	C	D	C	C	C	C	C	C	D	C
Approach Vol, veh/h		983			779			708			738	
Approach Delay, s/veh		39.3			29.9			29.6			34.7	
Approach LOS		D			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.8	14.3	25.7		18.8	10.6	29.5				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		30.8	11.3	21.9		18.0	9.1	24.1				
Max Q Clear Time (g_c+I1), s		12.3	9.6	20.4		12.3	6.7	8.0				
Green Ext Time (p_c), s		4.0	0.2	0.9		1.7	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay				33.8								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

HCM 6th Signalized Intersection Summary AM

10: Callan Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	188	728	53	17	370	59	86	313	34	55	130	172
Future Volume (veh/h)	188	728	53	17	370	59	86	313	34	55	130	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	204	791	58	19	411	66	91	333	36	60	141	187
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.94	0.94	0.94	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	255	1079	79	41	620	99	124	429	46	99	178	236
Arrive On Green	0.14	0.32	0.32	0.02	0.20	0.20	0.07	0.26	0.26	0.06	0.24	0.24
Sat Flow, veh/h	1781	3350	246	1781	3067	489	1781	1658	179	1781	728	966
Grp Volume(v), veh/h	204	419	430	19	237	240	91	0	369	60	0	328
Grp Sat Flow(s),veh/h/ln	1781	1777	1819	1781	1777	1779	1781	0	1838	1781	0	1694
Q Serve(g_s), s	5.9	11.1	11.1	0.6	6.5	6.6	2.6	0.0	9.8	1.7	0.0	9.6
Cycle Q Clear(g_c), s	5.9	11.1	11.1	0.6	6.5	6.6	2.6	0.0	9.8	1.7	0.0	9.6
Prop In Lane	1.00		0.14	1.00		0.27	1.00		0.10	1.00		0.57
Lane Grp Cap(c), veh/h	255	572	586	41	359	360	124	0	476	99	0	414
V/C Ratio(X)	0.80	0.73	0.73	0.46	0.66	0.67	0.73	0.00	0.78	0.61	0.00	0.79
Avail Cap(c_a), veh/h	320	757	775	169	605	606	185	0	671	175	0	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	15.9	15.9	25.5	19.4	19.4	24.1	0.0	18.2	24.4	0.0	18.7
Incr Delay (d2), s/veh	10.9	2.5	2.5	7.9	2.1	2.1	8.0	0.0	3.7	5.9	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	4.2	4.3	0.3	2.6	2.6	1.3	0.0	4.2	0.8	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	18.4	18.4	33.4	21.5	21.6	32.1	0.0	21.9	30.3	0.0	23.1
LnGrp LOS	C	B	B	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1053			496			460				388
Approach Delay, s/veh		21.2			22.0			23.9				24.2
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	18.2	5.7	21.5	8.2	17.4	12.1	15.2				
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	5.2	19.3	5.0	22.5	5.5	19.0	9.5	18.0				
Max Q Clear Time (g_c+I1), s	3.7	11.8	2.6	13.1	4.6	11.6	7.9	8.6				
Green Ext Time (p_c), s	0.0	1.3	0.0	3.6	0.0	1.2	0.1	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				22.4								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary AM
11: Hickey Blvd. & Campus Dr.

11/07/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	62	263	206	936	552	155
Future Volume (veh/h)	62	263	206	936	552	155
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
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	87	370	234	1064	613	172
Peak Hour Factor	0.71	0.71	0.88	0.88	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	97	414	248	1832	797	223
Arrive On Green	0.32	0.32	0.14	0.52	0.29	0.29
Sat Flow, veh/h	307	1304	1781	3647	2817	762
Grp Volume(v), veh/h	458	0	234	1064	400	385
Grp Sat Flow(s),veh/h/ln	1614	0	1781	1777	1777	1709
Q Serve(g_s), s	14.6	0.0	7.0	11.2	11.1	11.1
Cycle Q Clear(g_c), s	14.6	0.0	7.0	11.2	11.1	11.1
Prop In Lane	0.19	0.81	1.00			0.45
Lane Grp Cap(c), veh/h	513	0	248	1832	520	500
V/C Ratio(X)	0.89	0.00	0.94	0.58	0.77	0.77
Avail Cap(c_a), veh/h	584	0	248	2078	643	618
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	17.5	0.0	23.0	9.0	17.4	17.4
Incr Delay (d2), s/veh	14.8	0.0	41.8	0.3	4.5	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	5.5	3.2	4.5	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.4	0.0	64.8	9.3	21.9	22.1
LnGrp LOS	C	A	E	A	C	C
Approach Vol, veh/h	458			1298	785	
Approach Delay, s/veh	32.4			19.4	22.0	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		32.3		21.6	12.0	20.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		31.5		19.5	7.5	19.5
Max Q Clear Time (g_c+I1), s		13.2		16.6	9.0	13.1
Green Ext Time (p_c), s		7.3		0.5	0.0	2.6

Intersection Summary

HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

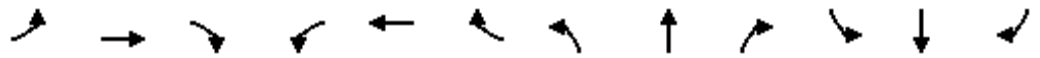
Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis AM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	721	433	170	64	178	316	112	963	95	282	502	330	
Future Volume (vph)	721	433	170	64	178	316	112	963	95	282	502	330	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
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	
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1681	1747	1583		3493	1556	1770	3539	1561	1770	3539	1583	
Flt Permitted	0.95	0.99	1.00		0.69	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1681	1747	1583		2450	1556	1770	3539	1561	1770	3539	1583	
Peak-hour factor, PHF	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89	
Adj. Flow (vph)	743	446	175	74	207	367	129	1107	109	317	564	371	
RTOR Reduction (vph)	0	0	68	0	0	160	0	0	66	0	0	258	
Lane Group Flow (vph)	587	602	107	0	281	207	129	1107	43	317	564	113	
Confl. Peds. (#/hr)	2					2			1	1			
Confl. Bikes (#/hr)						1							
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4	4			8		5	2		1	6		
Permitted Phases			4	8		8			2			6	
Actuated Green, G (s)	34.5	34.5	34.5		17.2	17.2	13.2	37.0	37.0	12.5	36.3	36.3	
Effective Green, g (s)	34.5	34.5	34.5		17.2	17.2	13.2	37.0	37.0	12.5	36.3	36.3	
Actuated g/C Ratio	0.29	0.29	0.29		0.14	0.14	0.11	0.31	0.31	0.10	0.30	0.30	
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
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	
Lane Grp Cap (vph)	486	505	458		353	224	196	1098	484	185	1077	482	
v/s Ratio Prot	c0.35	0.34					0.07	c0.31		c0.18	0.16		
v/s Ratio Perm			0.07		0.11	c0.13			0.03			0.07	
v/c Ratio	1.21	1.19	0.23		0.80	0.92	0.66	1.01	0.09	1.71	0.52	0.23	
Uniform Delay, d1	42.4	42.4	32.3		49.3	50.4	50.8	41.1	29.2	53.4	34.3	31.0	
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	111.6	104.7	0.3		11.7	39.5	7.7	29.2	0.1	343.0	0.5	0.3	
Delay (s)	153.9	147.0	32.6		61.1	89.9	58.6	70.3	29.2	396.3	34.8	31.3	
Level of Service	F	F	C		E	F	E	E	C	F	C	C	
Approach Delay (s)		135.3			77.4			65.8			125.3		
Approach LOS		F			E			E			F		
Intersection Summary													
HCM 2000 Control Delay			104.2									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.15										
Actuated Cycle Length (s)			119.2									Sum of lost time (s)	18.0
Intersection Capacity Utilization			95.9%									ICU Level of Service	F
Analysis Period (min)			15										

c Critical Lane Group

Intersection

Intersection Delay, s/veh27.5

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	167	17	17	8	23	56	24	415	14	24	237	87
Future Vol, veh/h	167	17	17	8	23	56	24	415	14	24	237	87
Peak Hour Factor	0.86	0.86	0.86	0.75	0.75	0.75	0.86	0.86	0.86	0.82	0.82	0.82
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	194	20	20	11	31	75	28	483	16	29	289	106
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.4	12.4	39	23.5
HCM LOS	C	B	E	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	83%	9%	7%
Vol Thru, %	92%	8%	26%	68%
Vol Right, %	3%	8%	64%	25%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	453	201	87	348
LT Vol	24	167	8	24
Through Vol	415	17	23	237
RT Vol	14	17	56	87
Lane Flow Rate	527	234	116	424
Geometry Grp	1	1	1	1
Degree of Util (X)	0.885	0.466	0.231	0.721
Departure Headway (Hd)	6.049	7.176	7.162	6.116
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	595	500	498	590
Service Time	4.113	5.257	5.262	4.185
HCM Lane V/C Ratio	0.886	0.468	0.233	0.719
HCM Control Delay	39	16.4	12.4	23.5
HCM Lane LOS	E	C	B	C
HCM 95th-tile Q	10.4	2.4	0.9	6

HCM 6th Signalized Intersection Summary AM

14: Gellert Blvd. & Serramonte Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	461	254	480	273	198	247	162	482	143	199	15
Future Volume (veh/h)	66	461	254	480	273	198	247	162	482	143	199	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	69	480	265	558	317	0	284	186	554	177	246	19
Peak Hour Factor	0.96	0.96	0.96	0.86	0.86	0.86	0.87	0.87	0.87	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	787	511	592	626		364	400	1217	282	331	26
Arrive On Green	0.06	0.22	0.22	0.17	0.33	0.00	0.10	0.21	0.21	0.08	0.19	0.19
Sat Flow, veh/h	1781	3554	1579	3456	1870	2790	3563	1870	3148	3456	1712	132
Grp Volume(v), veh/h	69	480	265	558	317	0	284	186	554	177	0	265
Grp Sat Flow(s),veh/h/ln	1781	1777	1579	1728	1870	1395	1781	1870	1574	1728	0	1844
Q Serve(g_s), s	2.2	7.0	7.9	9.2	7.8	0.0	4.5	5.0	7.6	2.9	0.0	7.8
Cycle Q Clear(g_c), s	2.2	7.0	7.9	9.2	7.8	0.0	4.5	5.0	7.6	2.9	0.0	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	103	787	511	592	626		364	400	1217	282	0	357
V/C Ratio(X)	0.67	0.61	0.52	0.94	0.51		0.78	0.46	0.46	0.63	0.00	0.74
Avail Cap(c_a), veh/h	179	1107	654	592	716		364	615	1579	305	0	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.7	20.2	15.9	23.6	15.4	0.0	25.3	19.8	13.2	25.7	0.0	21.9
Incr Delay (d2), s/veh	7.2	0.8	0.8	23.6	0.6	0.0	10.4	0.8	0.3	3.6	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.8	2.6	5.4	3.1	0.0	2.3	2.1	2.4	1.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	21.0	16.7	47.2	16.0	0.0	35.7	20.7	13.5	29.3	0.0	25.0
LnGrp LOS	C	C	B	D	B		D	C	B	C	A	C
Approach Vol, veh/h		814			875			1024			442	
Approach Delay, s/veh		20.7			35.9			21.0			26.7	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	16.9	14.4	17.3	10.4	15.7	7.8	23.8				
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	5.1	19.0	9.9	18.0	5.9	18.2	5.8	22.1				
Max Q Clear Time (g_c+I1), s	4.9	9.6	11.2	9.9	6.5	9.8	4.2	9.8				
Green Ext Time (p_c), s	0.0	2.5	0.0	2.6	0.0	0.9	0.0	1.4				

Intersection Summary

HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

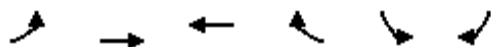
Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary AM

15: Serramonte Blvd. & I-280 SB Ramps

11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↑↑	↑↑
Traffic Volume (veh/h)	0	1054	486	0	968	512
Future Volume (veh/h)	0	1054	486	0	968	512
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	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1240	546	0	1166	617
Peak Hour Factor	0.85	0.85	0.89	0.89	0.83	0.83
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1279	1838	0	1590	1283
Arrive On Green	0.00	0.36	0.36	0.00	0.46	0.46
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1240	546	0	1166	617
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	17.2	3.8	0.0	13.7	7.7
Cycle Q Clear(g_c), s	0.0	17.2	3.8	0.0	13.7	7.7
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1279	1838	0	1590	1283
V/C Ratio(X)	0.00	0.97	0.30	0.00	0.73	0.48
Avail Cap(c_a), veh/h	0	1279	1838	0	1590	1283
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	11.5	0.0	11.0	9.4
Incr Delay (d2), s/veh	0.0	18.2	0.1	0.0	3.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	1.2	0.0	4.1	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	34.0	11.6	0.0	14.0	10.7
LnGrp LOS	A	C	B	A	B	B
Approach Vol, veh/h		1240	546		1783	
Approach Delay, s/veh		34.0	11.6		12.9	
Approach LOS		C	B		B	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				22.5	27.5	22.5
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				18.0	23.0	18.0
Max Q Clear Time (g_c+I1), s				19.2	15.7	5.8
Green Ext Time (p_c), s				0.0	4.3	2.9
Intersection Summary						
HCM 6th Ctrl Delay			20.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Summary AM
 16: Serramonte Blvd. & I-280 NB Ramps

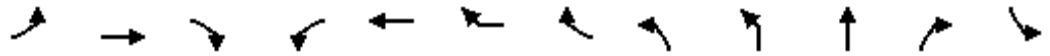
11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖↖	↗↗	↗↗			
Traffic Volume (veh/h)	483	1546	484	4	0	0
Future Volume (veh/h)	483	1546	484	4	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	582	1863	598	5		
Peak Hour Factor	0.83	0.83	0.81	0.81		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	852	3026	1649	14		
Arrive On Green	0.25	0.85	0.46	0.46		
Sat Flow, veh/h	3456	3647	3705	30		
Grp Volume(v), veh/h	582	1863	294	309		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1865		
Q Serve(g_s), s	4.6	5.0	3.3	3.3		
Cycle Q Clear(g_c), s	4.6	5.0	3.3	3.3		
Prop In Lane	1.00			0.02		
Lane Grp Cap(c), veh/h	852	3026	811	852		
V/C Ratio(X)	0.68	0.62	0.36	0.36		
Avail Cap(c_a), veh/h	1197	4163	1202	1262		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.3	0.7	5.4	5.4		
Incr Delay (d2), s/veh	1.0	0.2	0.3	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	0.1	0.7	0.7		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.3	0.9	5.6	5.6		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2445	603			
Approach Delay, s/veh		3.4	5.6			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				30.3	12.0	18.3
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	10.5	20.5
Max Q Clear Time (g_c+I1), s				7.0	6.6	5.3
Green Ext Time (p_c), s				18.8	0.9	3.3
Intersection Summary						
HCM 6th Ctrl Delay			3.8			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	342	863	338	221	270	373	130	162	494	514	366	152
Future Volume (vph)	342	863	338	221	270	373	130	162	494	514	366	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1583	1770	3146	1441			3433	3539	1583	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1583	1770	3146	1441			2628	3539	1583	1770
Peak-hour factor, PHF	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)	372	938	367	240	293	405	141	176	537	559	398	165
RTOR Reduction (vph)	0	0	233	0	0	125	0	0	0	0	157	0
Lane Group Flow (vph)	372	938	134	240	564	150	0	0	713	559	241	165
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.3	16.3	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.26	0.26	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	275	1022	457	142	908	416			232	925	414	142
v/s Ratio Prot	0.11	c0.27		c0.14	0.18					c0.16		0.09
v/s Ratio Perm			0.08			0.10			c0.27		0.15	
v/c Ratio	1.35	0.92	0.29	1.69	0.62	0.36			3.07	0.60	0.58	1.16
Uniform Delay, d1	28.6	21.4	17.2	28.6	19.2	17.6			28.4	20.2	20.0	28.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	180.8	12.6	0.4	339.0	1.3	0.5			944.3	1.1	2.1	125.6
Delay (s)	209.4	34.0	17.6	367.7	20.5	18.1			972.7	21.3	22.1	154.3
Level of Service	F	C	B	F	C	B			F	C	C	F
Approach Delay (s)		69.3			97.1					427.7		
Approach LOS		E			F					F		

Intersection Summary

HCM 2000 Control Delay	183.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis AM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	333	101	222
Future Volume (vph)	333	101	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frt	0.97		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3415		1583
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3415		1583
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	362	110	241
RTOR Reduction (vph)	0	0	180
Lane Group Flow (vph)	472	0	61
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	15.8		15.8
Effective Green, g (s)	15.8		15.8
Actuated g/C Ratio	0.25		0.25
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	866		401
v/s Ratio Prot	0.14		
v/s Ratio Perm			0.04
v/c Ratio	0.55		0.15
Uniform Delay, d1	20.1		18.1
Progression Factor	1.00		1.00
Incremental Delay, d2	0.7		0.2
Delay (s)	20.8		18.2
Level of Service	C		B
Approach Delay (s)	45.2		
Approach LOS	D		
Intersection Summary			

HCM 6th Signalized Intersection Summary AM
 12: Skyline Blvd. & Hickey Blvd. MITIGATION

12/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	721	433	170	64	178	316	112	963	95	282	502	330
Future Volume (veh/h)	721	433	170	64	178	316	112	963	95	282	502	330
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	455	850	175	74	207	0	129	1107	109	317	564	0
Peak Hour Factor	0.97	0.97	0.97	0.86	0.86	0.86	0.87	0.87	0.87	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	543	918	189	89	268		153	1101	491	288	1372	
Arrive On Green	0.31	0.31	0.31	0.10	0.10	0.00	0.09	0.31	0.31	0.16	0.39	0.00
Sat Flow, veh/h	1781	3008	619	901	2701	1585	1781	3554	1584	1781	3554	1585
Grp Volume(v), veh/h	455	528	497	150	131	0	129	1107	109	317	564	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1757	1825	1777	1585	1781	1777	1584	1781	1777	1585
Q Serve(g_s), s	34.6	39.7	39.7	11.7	10.4	0.0	10.4	45.0	7.4	23.5	16.8	0.0
Cycle Q Clear(g_c), s	34.6	39.7	39.7	11.7	10.4	0.0	10.4	45.0	7.4	23.5	16.8	0.0
Prop In Lane	1.00		0.35	0.49		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	543	571	536	181	176		153	1101	491	288	1372	
V/C Ratio(X)	0.84	0.93	0.93	0.83	0.74		0.84	1.01	0.22	1.10	0.41	
Avail Cap(c_a), veh/h	558	586	551	226	220		234	1101	491	288	1372	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.1	48.9	48.9	64.2	63.6	0.0	65.4	50.1	37.1	60.9	32.5	0.0
Incr Delay (d2), s/veh	10.6	20.6	21.6	18.2	10.0	0.0	15.5	28.4	0.2	82.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.8	21.6	20.5	6.3	5.2	0.0	5.3	23.7	2.9	17.0	7.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.7	69.5	70.5	82.3	73.6	0.0	81.0	78.5	37.4	143.2	32.7	0.0
LnGrp LOS	E	E	E	F	E		F	F	D	F	C	
Approach Vol, veh/h		1480			281			1345			881	
Approach Delay, s/veh		66.2			78.3			75.4			72.5	
Approach LOS		E			E			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.0	49.5		48.8	16.9	60.6		18.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	45.0		45.5	19.1	49.4		18.0				
Max Q Clear Time (g_c+I1), s	25.5	47.0		41.7	12.4	18.8		13.7				
Green Ext Time (p_c), s	0.0	0.0		2.6	0.1	3.7		0.6				

Intersection Summary

HCM 6th Ctrl Delay	71.5
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th TWSC PM
1: Gellert Blvd. & Serravista Ave.

11/07/2022

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗	↘	↑
Traffic Vol, veh/h	8	151	485	14	160	741
Future Vol, veh/h	8	151	485	14	160	741
Conflicting Peds, #/hr	5	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	100	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	189	522	15	174	805

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1686	528	0	0	543	0
Stage 1	528	-	-	-	-	-
Stage 2	1158	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	103	550	-	-	1026	-
Stage 1	592	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	84	547	-	-	1020	-
Mov Cap-2 Maneuver	84	-	-	-	-	-
Stage 1	588	-	-	-	-	-
Stage 2	247	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.9	0	1.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	84	547	1020
HCM Lane V/C Ratio	-	-	0.119	0.345	0.171
HCM Control Delay (s)	-	-	53.6	15	9.3
HCM Lane LOS	-	-	F	C	A
HCM 95th %tile Q(veh)	-	-	0.4	1.5	0.6

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	131	10	2	140	0	4
Future Vol, veh/h	131	10	2	140	0	4
Conflicting Peds, #/hr	0	1	1	0	4	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	79	79	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	11	3	177	0	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	158	0	340
Stage 1	-	-	-	-	153
Stage 2	-	-	-	-	187
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1422	-	656
Stage 1	-	-	-	-	875
Stage 2	-	-	-	-	845
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1421	-	651
Mov Cap-2 Maneuver	-	-	-	-	651
Stage 1	-	-	-	-	874
Stage 2	-	-	-	-	840

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	882	-	-	1421	-
HCM Lane V/C Ratio	0.006	-	-	0.002	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	17	0	0	19	7	48	1	59	38	15
Future Vol, veh/h	3	1	17	0	0	19	7	48	1	59	38	15
Conflicting Peds, #/hr	0	0	1	1	0	0	5	0	2	2	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	84	84	84	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	21	0	0	38	8	57	1	66	43	17

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	282	265	58	272	273	60	65	0	0	60	0	0
Stage 1	189	189	-	76	76	-	-	-	-	-	-	-
Stage 2	93	76	-	196	197	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	670	640	1008	680	634	1005	1537	-	-	1544	-	-
Stage 1	813	744	-	933	832	-	-	-	-	-	-	-
Stage 2	914	832	-	806	738	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	618	605	1002	638	599	1003	1530	-	-	1541	-	-
Mov Cap-2 Maneuver	618	605	-	638	599	-	-	-	-	-	-	-
Stage 1	805	708	-	926	826	-	-	-	-	-	-	-
Stage 2	875	826	-	752	702	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		8.7		0.9		3.9	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1530	-	-	895	1003	1541	-
HCM Lane V/C Ratio	0.005	-	-	0.029	0.038	0.043	-
HCM Control Delay (s)	7.4	0	-	9.1	8.7	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-

HCM 6th TWSC PM
4: Serravista Ave. & Driveway

11/07/2022

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	18	102	71	3	14	103
Future Vol, veh/h	18	102	71	3	14	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	111	77	3	15	112

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	80	0	-	0	230 79
Stage 1	-	-	-	-	79 -
Stage 2	-	-	-	-	151 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1518	-	-	-	758 981
Stage 1	-	-	-	-	944 -
Stage 2	-	-	-	-	877 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1518	-	-	-	747 981
Mov Cap-2 Maneuver	-	-	-	-	747 -
Stage 1	-	-	-	-	931 -
Stage 2	-	-	-	-	877 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1518	-	-	-	946
HCM Lane V/C Ratio	0.013	-	-	-	0.134
HCM Control Delay (s)	7.4	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5

HCM 6th Signalized Intersection Summary PM

5: Junipero Serra Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	283	875	255	139	545	825	138	406	117	386	454	226
Future Volume (veh/h)	283	875	255	139	545	825	138	406	117	386	454	226
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	292	902	0	148	580	0	152	446	0	424	499	0
Peak Hour Factor	0.97	0.97	0.97	0.94	0.94	0.94	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	1598		282	691		412	1454		437	1454	
Arrive On Green	0.43	0.43	0.00	0.43	0.43	0.00	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	834	3741	0	355	1617	1585	898	3647	0	943	3554	1585
Grp Volume(v), veh/h	292	902	0	148	580	0	152	446	0	424	499	0
Grp Sat Flow(s),veh/h/ln	834	1870	0	355	1617	1585	898	1777	0	943	1777	1585
Q Serve(g_s), s	5.9	10.0	0.0	13.1	17.6	0.0	7.7	4.7	0.0	17.8	5.3	0.0
Cycle Q Clear(g_c), s	23.5	10.0	0.0	23.1	17.6	0.0	13.0	4.7	0.0	22.5	5.3	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	1598		282	691		412	1454		437	1454	
V/C Ratio(X)	1.33	0.56		0.52	0.84		0.37	0.31		0.97	0.34	
Avail Cap(c_a), veh/h	220	1598		282	691		412	1454		437	1454	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.3	11.9	0.0	20.6	14.1	0.0	15.6	11.0	0.0	21.1	11.2	0.0
Incr Delay (d2), s/veh	174.9	0.5	0.0	1.8	9.1	0.0	0.6	0.1	0.0	35.4	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	3.4	0.0	1.8	6.8	0.0	1.4	1.5	0.0	9.3	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	201.3	12.3	0.0	22.4	23.1	0.0	16.2	11.1	0.0	56.5	11.3	0.0
LnGrp LOS	F	B		C	C		B	B		E	B	
Approach Vol, veh/h		1194			728			598			923	
Approach Delay, s/veh		58.5			23.0			12.4			32.1	
Approach LOS		E			C			B			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.0		28.0		27.0		28.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		22.5		23.5		22.5		23.5				
Max Q Clear Time (g_c+I1), s		15.0		25.5		24.5		25.1				
Green Ext Time (p_c), s		2.1		0.0		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	35.9
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM
6: I-280 NB Ramps & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↕		↰	↕		↰	↕	↰		↕	↰
Traffic Volume (veh/h)	195	795	168	213	742	53	838	75	423	134	91	3
Future Volume (veh/h)	195	795	168	213	742	53	838	75	423	134	91	3
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		0.99	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	864	0	222	773	51	970	0	209	147	100	0
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	983		240	940	62	1053	0	469	159	108	233
Arrive On Green	0.13	0.28	0.00	0.13	0.28	0.28	0.30	0.00	0.30	0.15	0.15	0.00
Sat Flow, veh/h	1781	3647	0	1781	3383	223	3563	0	1585	1081	735	1585
Grp Volume(v), veh/h	212	864	0	222	406	418	970	0	209	247	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1829	1781	0	1585	1816	0	1585
Q Serve(g_s), s	14.4	28.6	0.0	15.2	26.4	26.4	32.5	0.0	13.2	16.6	0.0	0.0
Cycle Q Clear(g_c), s	14.4	28.6	0.0	15.2	26.4	26.4	32.5	0.0	13.2	16.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	0.60		1.00
Lane Grp Cap(c), veh/h	238	983		240	494	508	1053	0	469	267	0	233
V/C Ratio(X)	0.89	0.88		0.93	0.82	0.82	0.92	0.00	0.45	0.93	0.00	0.00
Avail Cap(c_a), veh/h	250	1110		240	545	561	1121	0	499	267	0	233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	52.5	42.6	0.0	52.7	41.7	41.7	42.0	0.0	35.2	51.9	0.0	0.0
Incr Delay (d2), s/veh	29.4	7.6	0.0	38.4	9.1	8.9	11.8	0.0	0.7	35.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	13.4	0.0	9.3	12.6	13.0	15.4	0.0	5.1	10.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.9	50.2	0.0	91.1	50.8	50.6	53.8	0.0	35.9	87.8	0.0	0.0
LnGrp LOS	F	D		F	D	D	D	A	D	F	A	A
Approach Vol, veh/h		1076			1046			1179			247	
Approach Delay, s/veh		56.4			59.2			50.6			87.8	
Approach LOS		E			E			D			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		40.9	21.1	38.6		22.6	21.0	38.7				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		34.5	17.2	30.6		18.6	16.4	28.4				
Green Ext Time (p_c), s		2.0	0.0	3.5		0.0	0.1	3.5				

Intersection Summary

HCM 6th Ctrl Delay	57.5
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM

7: I-280 SB Ramps & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑					↑	↑↓	↑
Traffic Volume (veh/h)	0	524	802	180	1377	0	0	0	0	665	5	364
Future Volume (veh/h)	0	524	802	180	1377	0	0	0	0	665	5	364
Initial Q (Qb), veh	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
Parking Bus, Adj	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	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	609	0	188	1434	0				857	0	268
Peak Hour Factor	0.86	0.86	0.86	0.96	0.96	0.96				0.91	0.91	0.91
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1331		301	1924	0				1066	0	474
Arrive On Green	0.00	0.37	0.00	0.09	0.54	0.00				0.30	0.00	0.30
Sat Flow, veh/h	0	3741	0	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	609	0	188	1434	0				857	0	268
Grp Sat Flow(s),veh/h/ln	0	1777	0	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	7.3	0.0	3.0	17.5	0.0				12.5	0.0	8.0
Cycle Q Clear(g_c), s	0.0	7.3	0.0	3.0	17.5	0.0				12.5	0.0	8.0
Prop In Lane	0.00		0.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1331		301	1924	0				1066	0	474
V/C Ratio(X)	0.00	0.46		0.62	0.75	0.00				0.80	0.00	0.57
Avail Cap(c_a), veh/h	0	1668		582	2550	0				1294	0	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	0.0	24.9	10.0	0.0				18.3	0.0	16.7
Incr Delay (d2), s/veh	0.0	0.2	0.0	2.1	0.9	0.0				3.1	0.0	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
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	1.2	5.1	0.0				4.6	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.6	0.0	27.0	10.8	0.0				21.4	0.0	17.7
LnGrp LOS	A	B		C	B	A				C	A	B
Approach Vol, veh/h		609			1622						1125	
Approach Delay, s/veh		13.6			12.7						20.5	
Approach LOS		B			B						C	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			9.4	25.6		21.4		35.1				
Change Period (Y+Rc), s			4.5	4.5		4.5		4.5				
Max Green Setting (Gmax), s			9.5	26.5		20.5		40.5				
Max Q Clear Time (g_c+I1), s			5.0	9.3		14.5		19.5				
Green Ext Time (p_c), s			0.2	3.7		2.4		11.0				
Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC PM
8: Driveway & Hickey Blvd.

11/07/2022

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘			↗
Traffic Vol, veh/h	1140	8	24	1663	0	154
Future Vol, veh/h	1140	8	24	1663	0	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1239	9	26	1808	0	167

Major/Minor	Major1		Minor1	
Conflicting Flow All	0	0	-	624
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	-	3.32
Pot Cap-1 Maneuver	-	-	0	428
Stage 1	-	-	0	-
Stage 2	-	-	0	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	428
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	NB
HCM Control Delay, s	0	18.7
HCM LOS		C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR
Capacity (veh/h)	428	-	-
HCM Lane V/C Ratio	0.391	-	-
HCM Control Delay (s)	18.7	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.8	-	-

HCM 6th Signalized Intersection Summary PM

9: Gellert Blvd. & Hickey Blvd.

11/09/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↑↑	↵	↵↵	↑↑	↵	↵	↑↑	↵	↵	↑↑	↵
Traffic Volume (veh/h)	118	403	29	464	426	783	108	407	175	567	409	240
Future Volume (veh/h)	118	403	29	464	426	783	108	407	175	567	409	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.99	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	149	510	5	510	468	485	119	447	39	630	454	33
Peak Hour Factor	0.79	0.79	0.79	0.91	0.91	0.91	0.91	0.91	0.91	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	832	361	598	1120	494	300	629	258	767	403	333
Arrive On Green	0.09	0.23	0.23	0.17	0.32	0.32	0.17	0.17	0.17	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1541	3456	3554	1567	1781	3741	1537	3563	1870	1547
Grp Volume(v), veh/h	149	510	5	510	468	485	119	447	39	630	454	33
Grp Sat Flow(s),veh/h/ln	1781	1777	1541	1728	1777	1567	1781	1870	1537	1781	1870	1547
Q Serve(g_s), s	7.1	11.0	0.2	12.3	8.9	26.4	5.1	9.7	1.9	14.5	18.5	1.5
Cycle Q Clear(g_c), s	7.1	11.0	0.2	12.3	8.9	26.4	5.1	9.7	1.9	14.5	18.5	1.5
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	164	832	361	598	1120	494	300	629	258	767	403	333
V/C Ratio(X)	0.91	0.61	0.01	0.85	0.42	0.98	0.40	0.71	0.15	0.82	1.13	0.10
Avail Cap(c_a), veh/h	164	832	361	683	1120	494	383	805	331	767	403	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	29.4	25.3	34.5	23.2	29.2	31.9	33.8	30.5	32.2	33.7	27.0
Incr Delay (d2), s/veh	45.2	1.3	0.0	9.2	0.2	35.6	0.9	2.1	0.3	7.2	84.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.7	0.1	5.7	3.6	14.2	2.2	4.5	0.7	6.8	17.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.9	30.8	25.3	43.7	23.5	64.8	32.7	35.9	30.8	39.3	118.1	27.2
LnGrp LOS	F	C	C	D	C	E	C	D	C	D	F	C
Approach Vol, veh/h		664			1463			605			1117	
Approach Delay, s/veh		42.6			44.2			34.9			71.0	
Approach LOS		D			D			C			E	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	19.4	24.6		23.0	12.4	31.6				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5	17.0	18.0		18.5	7.9	27.1				
Max Q Clear Time (g_c+I1), s		11.7	14.3	13.0		20.5	9.1	28.4				
Green Ext Time (p_c), s		1.9	0.6	1.4		0.0	0.0	0.0				

Intersection Summary

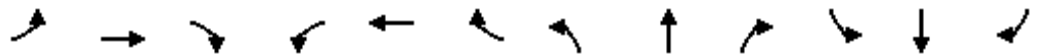
HCM 6th Ctrl Delay	50.3
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 6th Signalized Intersection Summary PM
 10: Callan Blvd. & Hickey Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕		↖	↕		↖	↕		↖	↕	
Traffic Volume (veh/h)	158	440	99	69	609	133	42	183	34	40	192	241
Future Volume (veh/h)	158	440	99	69	609	133	42	183	34	40	192	241
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	180	500	112	76	669	146	49	215	40	43	204	256
Peak Hour Factor	0.88	0.88	0.88	0.91	0.91	0.91	0.85	0.85	0.85	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	950	212	101	760	166	80	462	86	73	223	279
Arrive On Green	0.12	0.33	0.33	0.06	0.26	0.26	0.04	0.30	0.30	0.04	0.30	0.30
Sat Flow, veh/h	1781	2883	642	1781	2894	631	1781	1529	284	1781	746	936
Grp Volume(v), veh/h	180	307	305	76	410	405	49	0	255	43	0	460
Grp Sat Flow(s),veh/h/ln	1781	1777	1748	1781	1777	1748	1781	0	1813	1781	0	1682
Q Serve(g_s), s	6.6	9.3	9.4	2.8	14.8	14.8	1.8	0.0	7.6	1.6	0.0	17.6
Cycle Q Clear(g_c), s	6.6	9.3	9.4	2.8	14.8	14.8	1.8	0.0	7.6	1.6	0.0	17.6
Prop In Lane	1.00		0.37	1.00		0.36	1.00		0.16	1.00		0.56
Lane Grp Cap(c), veh/h	221	586	576	101	466	459	80	0	548	73	0	502
V/C Ratio(X)	0.82	0.52	0.53	0.75	0.88	0.88	0.61	0.00	0.47	0.59	0.00	0.92
Avail Cap(c_a), veh/h	227	586	576	193	480	473	134	0	556	136	0	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	18.1	18.1	30.9	23.5	23.6	31.2	0.0	18.9	31.4	0.0	22.5
Incr Delay (d2), s/veh	19.6	0.9	0.9	10.7	16.7	17.1	7.5	0.0	0.6	7.2	0.0	20.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.6	3.6	1.4	7.8	7.7	0.9	0.0	3.1	0.8	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	18.9	19.0	41.6	40.2	40.7	38.7	0.0	19.5	38.6	0.0	43.3
LnGrp LOS	D	B	B	D	D	D	D	A	B	D	A	D
Approach Vol, veh/h		792			891			304				503
Approach Delay, s/veh		25.6			40.6			22.6				42.9
Approach LOS		C			D			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.2	24.6	8.3	26.5	7.5	24.4	12.8	22.0				
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	5.1	20.4	7.2	19.3	5.0	20.5	8.5	18.0				
Max Q Clear Time (g_c+I1), s	3.6	9.6	4.8	11.4	3.8	19.6	8.6	16.8				
Green Ext Time (p_c), s	0.0	1.0	0.0	2.2	0.0	0.3	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay												34.1
HCM 6th LOS												C

HCM 6th Signalized Intersection Summary PM

11: Hickey Blvd. & Campus Dr.

11/07/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	131	148	780	886	108
Future Volume (veh/h)	101	131	148	780	886	108
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00			0.99
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	128	166	159	839	974	119
Peak Hour Factor	0.79	0.79	0.93	0.93	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	162	210	197	2060	1181	144
Arrive On Green	0.22	0.22	0.11	0.58	0.37	0.37
Sat Flow, veh/h	720	934	1781	3647	3277	389
Grp Volume(v), veh/h	295	0	159	839	543	550
Grp Sat Flow(s),veh/h/ln	1659	0	1781	1777	1777	1795
Q Serve(g_s), s	7.7	0.0	4.0	6.0	12.8	12.8
Cycle Q Clear(g_c), s	7.7	0.0	4.0	6.0	12.8	12.8
Prop In Lane	0.43	0.56	1.00			0.22
Lane Grp Cap(c), veh/h	373	0	197	2060	659	666
V/C Ratio(X)	0.79	0.00	0.81	0.41	0.82	0.83
Avail Cap(c_a), veh/h	649	0	197	2162	710	718
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	16.8	0.0	20.0	5.3	13.1	13.1
Incr Delay (d2), s/veh	3.8	0.0	21.1	0.1	7.4	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	2.6	1.3	5.2	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.6	0.0	41.1	5.5	20.5	20.5
LnGrp LOS	C	A	D	A	C	C
Approach Vol, veh/h	295			998	1093	
Approach Delay, s/veh	20.6			11.1	20.5	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		31.2		14.8	9.6	21.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		28.0		18.0	5.1	18.4
Max Q Clear Time (g_c+I1), s		8.0		9.7	6.0	14.8
Green Ext Time (p_c), s		5.7		0.6	0.0	2.2

Intersection Summary

HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B
























Notes

User approved volume balancing among the lanes for turning movement.

HCM Signalized Intersection Capacity Analysis PM

12: Skyline Blvd. & Hickey Blvd.

11/07/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	290	140	135	375	309	177	625	89	218	656	655
Future Volume (vph)	384	290	140	135	375	309	177	625	89	218	656	655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Lane Util. Factor	0.95	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.98	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1756	1583		3493	1548	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	0.99	1.00		0.75	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1756	1583		2657	1548	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	417	315	152	142	395	325	186	658	94	229	691	689
RTOR Reduction (vph)	0	0	101	0	0	201	0	0	73	0	0	361
Lane Group Flow (vph)	359	373	51	0	537	124	186	658	21	229	691	328
Confl. Peds. (#/hr)	7					7						
Turn Type	Split	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4			8		5	2		1	6	
Permitted Phases			4	8		8			2			6
Actuated Green, G (s)	18.5	18.5	18.5		20.7	20.7	10.1	19.6	19.6	11.9	21.4	21.4
Effective Green, g (s)	18.5	18.5	18.5		20.7	20.7	10.1	19.6	19.6	11.9	21.4	21.4
Actuated g/C Ratio	0.21	0.21	0.21		0.23	0.23	0.11	0.22	0.22	0.13	0.24	0.24
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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
Lane Grp Cap (vph)	350	366	330		620	361	201	782	349	237	853	381
v/s Ratio Prot	c0.21	0.21					0.11	0.19		c0.13	0.20	
v/s Ratio Perm			0.03		c0.20	0.08			0.01			c0.21
v/c Ratio	1.03	1.02	0.16		0.87	0.34	0.93	0.84	0.06	0.97	0.81	0.86
Uniform Delay, d1	35.1	35.1	28.7		32.7	28.3	38.9	33.1	27.3	38.2	31.7	32.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.8	52.0	0.2		12.1	0.6	42.7	8.2	0.1	48.5	5.9	17.6
Delay (s)	89.9	87.1	28.9		44.8	28.9	81.6	41.2	27.3	86.7	37.6	49.9
Level of Service	F	F	C		D	C	F	D	C	F	D	D
Approach Delay (s)		78.3			38.8			47.8			49.8	
Approach LOS		E			D			D			D	
Intersection Summary												
HCM 2000 Control Delay			53.0		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			88.7		Sum of lost time (s)					18.0		
Intersection Capacity Utilization			77.0%		ICU Level of Service					D		
Analysis Period (min)			15									
c Critical Lane Group												

Intersection

Intersection Delay, s/veh31.4

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	102	14	19	15	14	25	35	241	9	22	438	160
Future Vol, veh/h	102	14	19	15	14	25	35	241	9	22	438	160
Peak Hour Factor	0.81	0.81	0.81	0.82	0.82	0.82	0.87	0.87	0.87	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	126	17	23	18	17	30	40	277	10	24	476	174
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	12.8	10.8	14.8	46
HCM LOS	B	B	B	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	76%	28%	4%
Vol Thru, %	85%	10%	26%	71%
Vol Right, %	3%	14%	46%	26%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	135	54	620
LT Vol	35	102	15	22
Through Vol	241	14	14	438
RT Vol	9	19	25	160
Lane Flow Rate	328	167	66	674
Geometry Grp	1	1	1	1
Degree of Util (X)	0.518	0.31	0.125	0.954
Departure Headway (Hd)	5.697	6.696	6.854	5.097
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	629	533	526	708
Service Time	3.777	4.791	4.854	3.16
HCM Lane V/C Ratio	0.521	0.313	0.125	0.952
HCM Control Delay	14.8	12.8	10.8	46
HCM Lane LOS	B	B	B	E
HCM 95th-tile Q	3	1.3	0.4	13.9

HCM 6th Signalized Intersection Summary PM

14: Gellert Blvd. & Serramonte Blvd.

11/07/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	458	282	657	484	711	393	356	746	492	371	65
Future Volume (veh/h)	64	458	282	657	484	711	393	356	746	492	371	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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	74	526	324	670	494	0	427	387	811	523	395	69
Peak Hour Factor	0.87	0.87	0.87	0.98	0.98	0.98	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	95	705	531	673	636		496	434	1315	602	412	72
Arrive On Green	0.05	0.20	0.20	0.19	0.34	0.00	0.14	0.23	0.23	0.17	0.27	0.27
Sat Flow, veh/h	1781	3554	1563	3456	1870	2790	3563	1870	3006	3456	1543	270
Grp Volume(v), veh/h	74	526	324	670	494	0	427	387	811	523	0	464
Grp Sat Flow(s),veh/h/ln	1781	1777	1563	1728	1870	1395	1781	1870	1503	1728	0	1813
Q Serve(g_s), s	3.7	12.5	15.6	17.4	21.3	0.0	10.5	18.0	19.0	13.2	0.0	22.6
Cycle Q Clear(g_c), s	3.7	12.5	15.6	17.4	21.3	0.0	10.5	18.0	19.0	13.2	0.0	22.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	95	705	531	673	636		496	434	1315	602	0	484
V/C Ratio(X)	0.78	0.75	0.61	1.00	0.78		0.86	0.89	0.62	0.87	0.00	0.96
Avail Cap(c_a), veh/h	131	712	534	673	636		496	434	1315	658	0	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.0	33.9	24.9	36.1	26.6	0.0	37.8	33.4	20.2	36.1	0.0	32.4
Incr Delay (d2), s/veh	17.9	4.3	2.0	33.4	6.1	0.0	14.4	20.1	0.9	11.2	0.0	30.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	5.7	5.9	10.3	10.2	0.0	5.5	10.4	6.5	6.4	0.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	38.1	26.9	69.5	32.6	0.0	52.2	53.5	21.1	47.3	0.0	62.8
LnGrp LOS	E	D	C	E	C		D	D	C	D	A	E
Approach Vol, veh/h		924			1164			1625			987	
Approach Delay, s/veh		35.9			53.9			37.0			54.6	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.2	25.3	22.0	22.3	17.0	28.5	9.3	35.0				
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	17.1	19.4	17.5	18.0	12.5	24.0	6.6	28.9				
Max Q Clear Time (g_c+I1), s	15.2	21.0	19.4	17.6	12.5	24.6	5.7	23.3				
Green Ext Time (p_c), s	0.4	0.0	0.0	0.2	0.0	0.0	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Notes

- User approved volume balancing among the lanes for turning movement.
- Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary PM
 15: Serramonte Blvd. & I-280 SB Ramps

11/07/2022

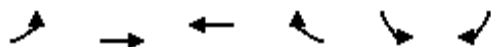


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑		↘↘	↘↘
Traffic Volume (veh/h)	0	1699	941	0	820	983
Future Volume (veh/h)	0	1699	941	0	820	983
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1788	1034	0	863	1035
Peak Hour Factor	0.95	0.95	0.91	0.91	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1688	2425	0	1296	1046
Arrive On Green	0.00	0.47	0.47	0.00	0.38	0.38
Sat Flow, veh/h	0	3741	5443	0	3456	2790
Grp Volume(v), veh/h	0	1788	1034	0	863	1035
Grp Sat Flow(s),veh/h/ln	0	1777	1702	0	1728	1395
Q Serve(g_s), s	0.0	28.5	8.0	0.0	12.5	22.1
Cycle Q Clear(g_c), s	0.0	28.5	8.0	0.0	12.5	22.1
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1688	2425	0	1296	1046
V/C Ratio(X)	0.00	1.06	0.43	0.00	0.67	0.99
Avail Cap(c_a), veh/h	0	1688	2425	0	1296	1046
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	10.4	0.0	15.6	18.6
Incr Delay (d2), s/veh	0.0	39.5	0.1	0.0	2.7	25.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	18.7	2.6	0.0	4.4	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	55.3	10.5	0.0	18.3	44.0
LnGrp LOS	A	F	B	A	B	D
Approach Vol, veh/h		1788	1034		1898	
Approach Delay, s/veh		55.3	10.5		32.3	
Approach LOS		E	B		C	
Timer - Assigned Phs				4	6	8
Phs Duration (G+Y+Rc), s				33.0	27.0	33.0
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				28.5	22.5	28.5
Max Q Clear Time (g_c+I1), s				30.5	24.1	10.0
Green Ext Time (p_c), s				0.0	0.0	7.2
Intersection Summary						
HCM 6th Ctrl Delay			36.2			
HCM 6th LOS			D			

HCM 6th Signalized Intersection Summary PM

16: Serramonte Blvd. & I-280 NB Ramps

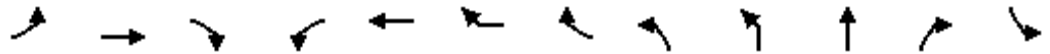
11/07/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	742	1782	952	15	0	0
Future Volume (veh/h)	742	1782	952	15	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			0.98		
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach		No	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870		
Adj Flow Rate, veh/h	765	1837	1046	16		
Peak Hour Factor	0.97	0.97	0.91	0.91		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1028	3069	1539	24		
Arrive On Green	0.30	0.86	0.43	0.43		
Sat Flow, veh/h	3456	3647	3675	55		
Grp Volume(v), veh/h	765	1837	519	543		
Grp Sat Flow(s),veh/h/ln	1728	1777	1777	1859		
Q Serve(g_s), s	6.6	4.8	7.8	7.8		
Cycle Q Clear(g_c), s	6.6	4.8	7.8	7.8		
Prop In Lane	1.00			0.03		
Lane Grp Cap(c), veh/h	1028	3069	763	799		
V/C Ratio(X)	0.74	0.60	0.68	0.68		
Avail Cap(c_a), veh/h	1309	3823	996	1042		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	10.5	0.6	7.6	7.6		
Incr Delay (d2), s/veh	1.7	0.2	1.2	1.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.0	0.1	2.0	2.1		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.2	0.8	8.8	8.8		
LnGrp LOS	B	A	A	A		
Approach Vol, veh/h		2602	1062			
Approach Delay, s/veh		4.2	8.8			
Approach LOS		A	A			
Timer - Assigned Phs				4	7	8
Phs Duration (G+Y+Rc), s				33.0	14.3	18.7
Change Period (Y+Rc), s				4.5	4.5	4.5
Max Green Setting (Gmax), s				35.5	12.5	18.5
Max Q Clear Time (g_c+I1), s				6.8	8.6	9.8
Green Ext Time (p_c), s				18.6	1.2	4.4
Intersection Summary						
HCM 6th Ctrl Delay			5.5			
HCM 6th LOS			A			

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL	
Lane Configurations													
Traffic Volume (vph)	511	937	295	399	620	540	130	162	520	529	296	177	
Future Volume (vph)	511	937	295	399	620	540	130	162	520	529	296	177	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	0.91			0.97	0.95	1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.95	0.85			1.00	1.00	0.85	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95	
Satd. Flow (prot)	3433	3539	1555	1770	3223	1421			3433	3539	1555	1770	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95	
Satd. Flow (perm)	3433	3539	1555	1770	3223	1421			2628	3539	1555	1770	
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93	
Adj. Flow (vph)	562	1030	324	443	689	600	144	178	571	581	325	190	
RTOR Reduction (vph)	0	0	216	0	0	125	0	0	0	0	151	0	
Lane Group Flow (vph)	562	1030	108	443	989	319	0	0	749	581	174	190	
Confl. Peds. (#/hr)			5	5							6	6	
Confl. Bikes (#/hr)			1			1	1						
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot	
Protected Phases	7	4		3	8				5	2		1	
Permitted Phases			4			8		5			2		
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.6	16.6	5.0	
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.6	16.6	5.0	
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.27	0.27	0.08	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	274	1017	447	141	926	408			230	938	412	141	
v/s Ratio Prot	0.16	0.29		c0.25	c0.31					0.16		0.11	
v/s Ratio Perm			0.07			0.22			c0.28		0.11		
v/c Ratio	2.05	1.01	0.24	3.14	1.07	0.78			3.26	0.62	0.42	1.35	
Uniform Delay, d1	28.8	22.3	17.1	28.8	22.3	20.5			28.6	20.2	19.0	28.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	485.5	31.4	0.3	982.2	49.5	9.4			1026.6	1.2	0.7	195.9	
Delay (s)	514.3	53.7	17.4	1011.0	71.8	29.9			1055.2	21.5	19.7	224.7	
Level of Service	F	D	B	F	E	C			F	C	B	F	
Approach Delay (s)		182.7			283.7					488.9			
Approach LOS		F			F					F			
Intersection Summary													
HCM 2000 Control Delay			270.9									HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.43										
Actuated Cycle Length (s)			62.6									Sum of lost time (s)	18.0
Intersection Capacity Utilization			98.4%									ICU Level of Service	F
Analysis Period (min)			15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	372	178	222
Future Volume (vph)	372	178	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3354		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3354		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	400	191	239
RTOR Reduction (vph)	0	0	173
Lane Group Flow (vph)	591	0	66
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	16.1		16.1
Effective Green, g (s)	16.1		16.1
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	862		401
v/s Ratio Prot	c0.18		
v/s Ratio Perm			0.04
v/c Ratio	0.69		0.16
Uniform Delay, d1	21.0		18.0
Progression Factor	1.00		1.00
Incremental Delay, d2	2.3		0.2
Delay (s)	23.2		18.2
Level of Service	C		B
Approach Delay (s)	59.6		
Approach LOS	E		
Intersection Summary			

HCM 6th Signalized Intersection Summary PM
6: I-280 NB Ramps & Hickey Blvd. MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗↘		↗	↗↘		↗	↗	↗	↗	↗	↗
Traffic Volume (veh/h)	195	795	168	213	742	53	838	75	423	134	91	3
Future Volume (veh/h)	195	795	168	213	742	53	838	75	423	134	91	3
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		0.99	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	864	0	222	773	51	970	0	209	124	133	0
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	1028		252	996	66	1096	0	487	168	177	150
Arrive On Green	0.14	0.29	0.00	0.14	0.29	0.29	0.31	0.00	0.31	0.09	0.09	0.00
Sat Flow, veh/h	1781	3647	0	1781	3383	223	3563	0	1585	1781	1870	1585
Grp Volume(v), veh/h	212	864	0	222	406	418	970	0	209	124	133	0
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1829	1781	0	1585	1781	1870	1585
Q Serve(g_s), s	12.6	24.6	0.0	13.2	22.5	22.5	27.9	0.0	11.3	7.3	7.5	0.0
Cycle Q Clear(g_c), s	12.6	24.6	0.0	13.2	22.5	22.5	27.9	0.0	11.3	7.3	7.5	0.0
Prop In Lane	1.00		0.00	1.00		0.12	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1028		252	523	538	1096	0	487	168	177	150
V/C Ratio(X)	0.87	0.84		0.88	0.78	0.78	0.89	0.00	0.43	0.74	0.75	0.00
Avail Cap(c_a), veh/h	286	1272		275	624	643	1285	0	572	300	315	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.5	35.9	0.0	45.3	34.7	34.7	35.4	0.0	29.7	47.4	47.5	0.0
Incr Delay (d2), s/veh	21.7	4.3	0.0	25.1	5.1	5.0	6.9	0.0	0.6	6.2	6.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	11.0	0.0	7.5	10.2	10.5	12.5	0.0	4.3	3.5	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.3	40.2	0.0	70.4	39.8	39.7	42.3	0.0	30.3	53.6	53.9	0.0
LnGrp LOS	E	D		E	D	D	D	A	C	D	D	A
Approach Vol, veh/h		1076			1046			1179			257	
Approach Delay, s/veh		45.6			46.3			40.2			53.7	
Approach LOS		D			D			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.6	19.7	35.6		14.7	19.2	36.2				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		38.8	16.6	38.5		18.1	17.3	37.8				
Max Q Clear Time (g_c+I1), s		29.9	15.2	26.6		9.5	14.6	24.5				
Green Ext Time (p_c), s		3.2	0.1	4.6		0.7	0.2	4.2				

Intersection Summary

HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

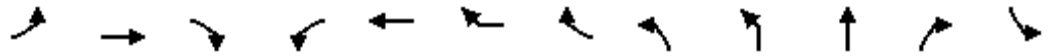
Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM Signalized Intersection Capacity Analysis PM

17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	511	937	295	399	620	540	130	162	520	529	296	177
Future Volume (vph)	511	937	295	399	620	540	130	162	520	529	296	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	0.91			0.97	0.95	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99			1.00	1.00	0.98	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.95	0.85			1.00	1.00	0.85	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00			0.95	1.00	1.00	0.95
Satd. Flow (prot)	3433	3539	1555	3433	3223	1421			3433	3539	1555	1770
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00			0.73	1.00	1.00	0.95
Satd. Flow (perm)	3433	3539	1555	3433	3223	1421			2628	3539	1555	1770
Peak-hour factor, PHF	0.91	0.91	0.91	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.93
Adj. Flow (vph)	562	1030	324	443	689	600	144	178	571	581	325	190
RTOR Reduction (vph)	0	0	216	0	0	125	0	0	0	0	151	0
Lane Group Flow (vph)	562	1030	108	443	989	319	0	0	749	581	174	190
Confl. Peds. (#/hr)			5	5							6	6
Confl. Bikes (#/hr)			1			1	1					
Turn Type	Prot	NA	Perm	Prot	NA	Perm		custom	Prot	NA	Perm	Prot
Protected Phases	7	4		3	8				5	2		1
Permitted Phases			4			8		5			2	
Actuated Green, G (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.6	16.6	5.0
Effective Green, g (s)	5.0	18.0	18.0	5.0	18.0	18.0			5.5	16.6	16.6	5.0
Actuated g/C Ratio	0.08	0.29	0.29	0.08	0.29	0.29			0.09	0.27	0.27	0.08
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5			4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	1017	447	274	926	408			230	938	412	141
v/s Ratio Prot	c0.16	0.29		0.13	c0.31					0.16		0.11
v/s Ratio Perm			0.07			0.22			c0.28		0.11	
v/c Ratio	2.05	1.01	0.24	1.62	1.07	0.78			3.26	0.62	0.42	1.35
Uniform Delay, d1	28.8	22.3	17.1	28.8	22.3	20.5			28.6	20.2	19.0	28.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00	1.00
Incremental Delay, d2	485.5	31.4	0.3	293.8	49.5	9.4			1026.6	1.2	0.7	195.9
Delay (s)	514.3	53.7	17.4	322.6	71.8	29.9			1055.2	21.5	19.7	224.7
Level of Service	F	D	B	F	E	C			F	C	B	F
Approach Delay (s)		182.7			121.1					488.9		
Approach LOS		F			F					F		
Intersection Summary												
HCM 2000 Control Delay			223.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.31									
Actuated Cycle Length (s)			62.6			Sum of lost time (s)			18.0			
Intersection Capacity Utilization			92.7%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis PM
 17: Junipero Serra Blvd. & Serramonte Blvd. & 280 NB Ramps MITIGATED

11/21/2022



Movement	SBT	SBR	SBR2
Lane Configurations	↑↑		↗
Traffic Volume (vph)	372	178	222
Future Volume (vph)	372	178	222
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	4.5		4.5
Lane Util. Factor	0.95		1.00
Frbp, ped/bikes	1.00		0.99
Flpb, ped/bikes	1.00		1.00
Frt	0.95		0.85
Flt Protected	1.00		1.00
Satd. Flow (prot)	3354		1563
Flt Permitted	1.00		1.00
Satd. Flow (perm)	3354		1563
Peak-hour factor, PHF	0.93	0.93	0.93
Adj. Flow (vph)	400	191	239
RTOR Reduction (vph)	0	0	173
Lane Group Flow (vph)	591	0	66
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)		1	1
Turn Type	NA		Perm
Protected Phases	6		
Permitted Phases			6
Actuated Green, G (s)	16.1		16.1
Effective Green, g (s)	16.1		16.1
Actuated g/C Ratio	0.26		0.26
Clearance Time (s)	4.5		4.5
Vehicle Extension (s)	3.0		3.0
Lane Grp Cap (vph)	862		401
v/s Ratio Prot	c0.18		
v/s Ratio Perm			0.04
v/c Ratio	0.69		0.16
Uniform Delay, d1	21.0		18.0
Progression Factor	1.00		1.00
Incremental Delay, d2	2.3		0.2
Delay (s)	23.2		18.2
Level of Service	C		B
Approach Delay (s)	59.6		
Approach LOS	E		
Intersection Summary			

Appendix H – C/CAG VMT Estimation Tool Output

Project Details

Timestamp of Analysis: October 28, 2022, 01:38:06 PM

Project Name: 455 Hickey Blvd

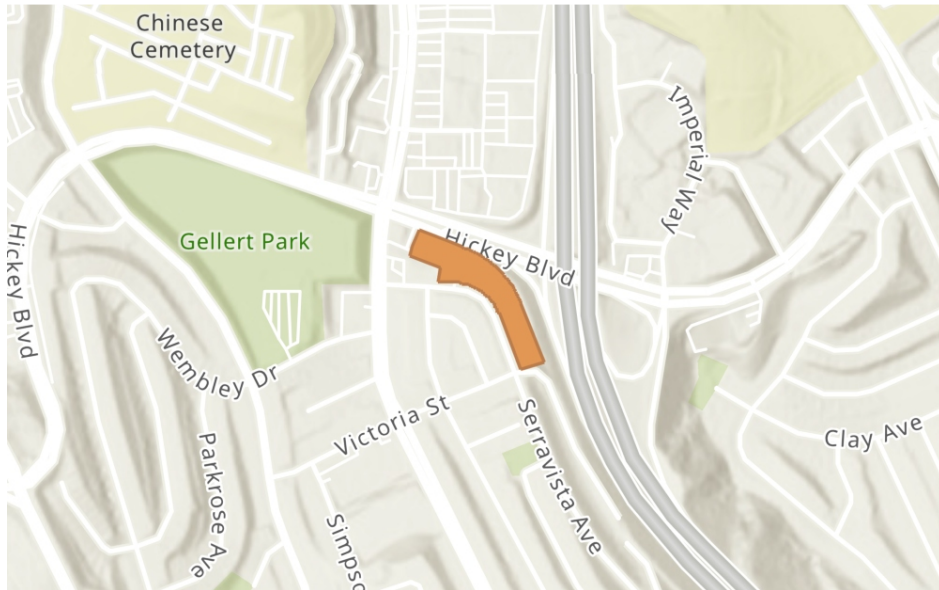
Project Description: Office project in Daly City

Project Location

jurisdiction:	apn	TAZ
Daly City	091341140	1918

Inside a TPA?

Yes (Pass)



Analysis Details

Data Version: C/CAG Travel Model

Analysis Methodology: TAZ

Baseline Year: 2015

Project Land Use

Residential:

Single Family DU:

Multifamily DU:

Total DUs: 0

Non-Residential:

Office KSF:

Local Serving Retail KSF:

Industrial KSF:

Residential Affordability (percent of all units):

Extremely Low Income: 0 %

Very Low Income: 0 %

Low Income: 0 %

Parking:

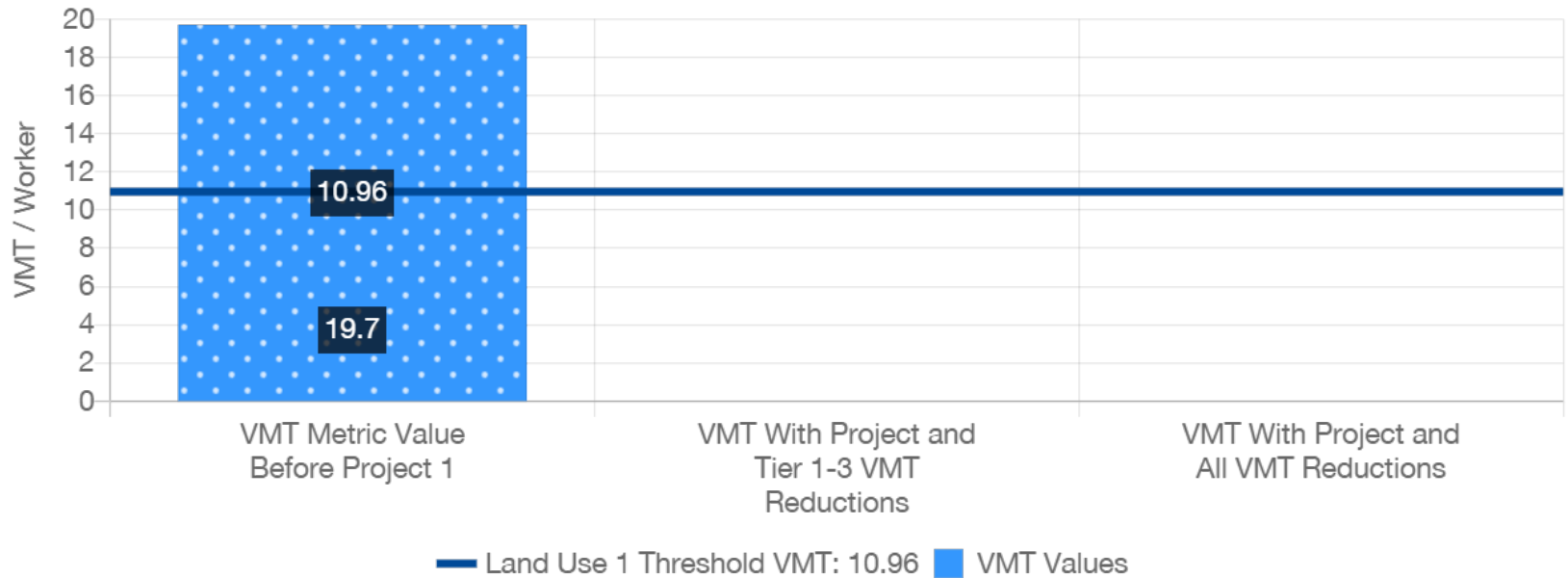
Motor Vehicle Parking:

Bicycle Parking:

Office Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 1:	Office
VMT Without Project 1:	Home-Based Work VMT per Employee
VMT Baseline Description 1:	City Average
VMT Baseline Value 1:	12.9
VMT Threshold Description 1:	-15%
Land Use 1 has been Pre-Screened by the Local Jurisdiction:	N/A

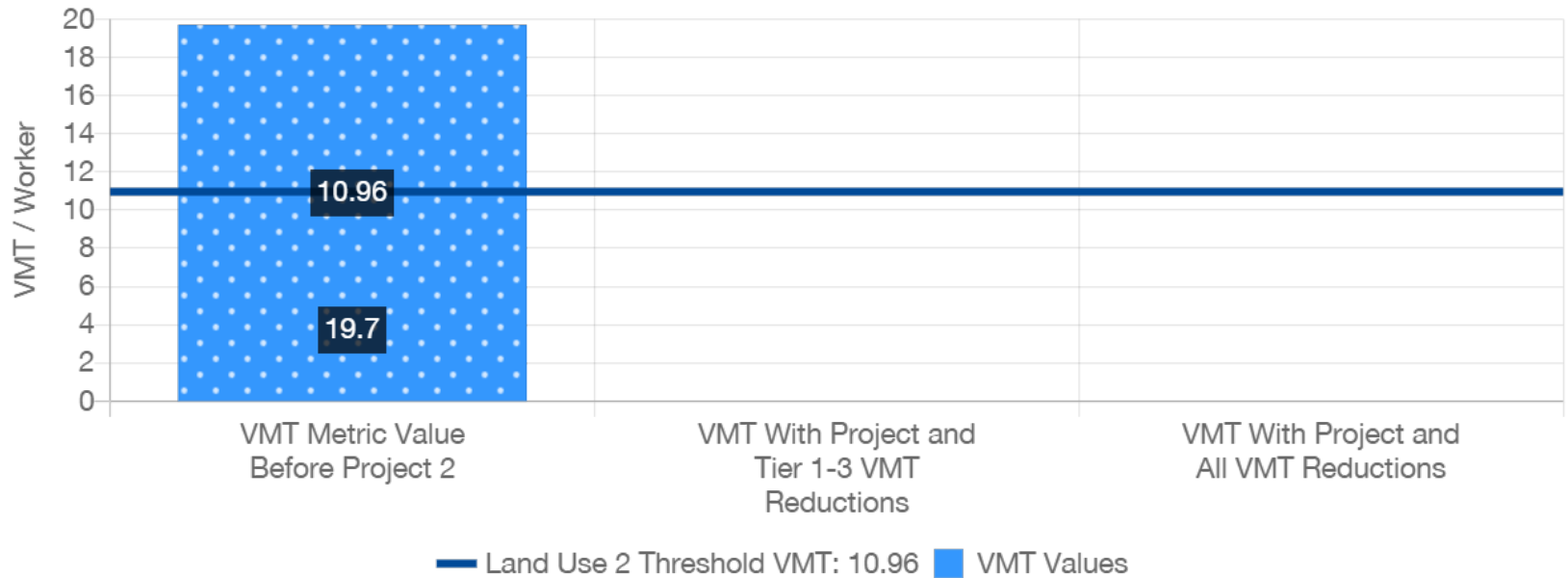
	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	19.7	null	null
Low VMT Screening Analysis	No (Fail)	null	null



Industrial Vehicle Miles Traveled (VMT) Screening Results

Land Use Type 2:	Industrial
VMT Without Project 2:	Home-Based Work VMT per Employee
VMT Baseline Description 2:	City Average
VMT Baseline Value 2:	12.9
VMT Threshold Description 2:	-15%
Land Use 2 has been Pre-Screened by the Local Jurisdiction:	N/A

	Without Project	With Project & Tier 1-3 VMT Reductions	With Project & All VMT Reductions
Project Generated Vehicle Miles Traveled (VMT) Rate	19.7	null	null
Low VMT Screening Analysis	No (Fail)	null	null



Appendix I – C/CAG TDM Checklist

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. [Read more at ccagtdm.org](http://ccagtdm.org)

? Questions?
support@ccagtdm.org

A Applicant Information

Project Address		Contact First and Last Name
<input type="text"/>		<input type="text"/>
Parcel Number	Application Date	Contact Phone Address
<input type="text"/>	<input type="text"/>	<input type="text"/>
Project Jurisdiction		Contact Email Address
<input type="text"/>		<input type="text"/>

B Trip Reduction Target

Select one option based on your project's distance to high quality transit

Read more about high quality transit at ccagtdm.org/high-quality-transit

Identify your project type

<input type="checkbox"/> TOD Less than 1/2-mile from high quality transit service 25% Trip Reduction Required	<input type="checkbox"/> Transit Proximate 1/2 to 3 miles from high quality transit service 35% Trip Reduction Required	<input type="checkbox"/> Non-Transit Proximate More than 3 miles from high quality transit service 35% Trip Reduction Required
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C Required Measures

You must select all measures that apply for your project type

[Click on each measure's title for more information](#)

Measure	Project Types	Percentage	Yes
1 <u>M1 - Free/Preferential Parking for Carpools</u> Provide free or preferential parking, including reserved spaces or spaces near an entrance or other desirable location, to incentivize ridesharing.	ALL	1%	<input type="checkbox"/>
2 <u>M3 - TDM Coordinator/Contact Person</u> Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	ALL	0.5%	<input type="checkbox"/>
3 <u>M4 - Actively Participate in Commute.org or Transportation Management Association (TMA) Equivalent</u> Obtain certification of registration from Commute.org or equivalent TMA incorporation documents. Select only one based on Project Type	TOD & Non-transit Proximate Transit Proximate	6.5% 16.5%	<input type="checkbox"/> <input type="checkbox"/>
4 <u>M5 - Carpool or Vanpool Program</u> Establish carpool/vanpool program for tenants and register program with Commute.org.	ALL	2%	<input type="checkbox"/>
5 <u>M6 - Transit or Ridesharing Passes/Subsidies</u> Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or \$50 - whichever is lower.	ALL	10%	<input type="checkbox"/>
6 <u>M7 - Pre-Tax Transportation Benefits</u> Offer option for tenants to participate in a pre-tax transit program to encourage the use of sustainable transportation modes and leverage pre-tax income to pay for commute trip costs.	ALL	1%	<input type="checkbox"/>
7 <u>M8 - Secure Bicycle Storage</u> Comply with CalGREEN minimum bicycle parking requirements.	ALL	1%	<input type="checkbox"/>
8 <u>M9 - Design Streets to Encourage Bike/Ped Access</u> Design adjacent streets or roadways to facilitate multimodal travel.	ALL	1%	<input type="checkbox"/>
9 <u>M25 - Showers, Lockers, and Changing Rooms for Cyclists</u> These amenities serve as end of trip facilities for employees arriving by bike or other active transportation forms.	ALL	2%	<input type="checkbox"/>
10	Total from Required Measures Sum percentages from each selected measure from rows 1-9		<input type="text"/> %

Form Continues on Page 2 →

D Additional Recommended Select enough to meet the trip reduction target from section B Click on each measure's title for more information

Measure	Project Types	Percentage	Yes
11 M12 - Flex Time, Compressed Work Week, Telecommute Flex time allows employees some flexibility in their daily work schedules. Compressed work week allows employees to work fewer but longer days. Telecommuting functions similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.	ALL	5%	<input type="checkbox"/>
12 M14 - Paid Parking at Market Rate Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	ALL	25%	<input type="checkbox"/>
13 M15 - Reduced Parking Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	ALL	10%	<input type="checkbox"/>
14 M16 - Short-Term Daily Parking Offer daily or hourly parking rates that are proportional to the monthly rate or approximately the cost of a transit fare.	ALL	2%	<input type="checkbox"/>
15 M17 - Developer TDM Fee/TDM Fund Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	ALL	4%	<input type="checkbox"/>
16 M18 - Car Share On-Site Provide on-site car share or vehicle fleets.	ALL	1%	<input type="checkbox"/>
17 M19 - Land Dedication or Capital Improvements for Transit Contribute space on, or adjacent to, the project site for transit improvements. Select one or more	ALL	Bus Pullout Space 1% <input type="checkbox"/> Bus Shelter 1% <input type="checkbox"/> Visual/Electrical Improvements (i.e., Lighting, Signage) 1% <input type="checkbox"/> Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% <input type="checkbox"/>	<input type="checkbox"/> % Total percentages selected
18 M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service Establish a shuttle service to regional transit hubs or commercial centers. Shuttle service should be provided free of charge to employees and guests.	Non-transit Proximate	10%	<input type="checkbox"/>
19 M21 - Bike/Scooter Share On-Site Allocate space for bike/scooter share parking.	All	1%	<input type="checkbox"/>
20 M22 - Active Transportation Subsidies Offer biking/walking incentives to tenants, such as gift card/product raffles.	All	2%	<input type="checkbox"/>
21 M23 - Gap Closure Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	All	7%	<input type="checkbox"/>
22 M24 - Bike Repair Station Offer on-site bike repair space/tools in visible, secure area.	All	0.5%	<input type="checkbox"/>
23 M26 - Pedestrian Oriented Uses & Amenities on Ground Floor Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	All	3%	<input type="checkbox"/>
24	Total from Additional Measures Sum percentages from each selected measure from rows 11 - 23		<input type="checkbox"/> %

E Project Totals

Percentage from Required Measures Section C Row 10 %

+ Percentage from Additional Measures Section D Row 24 %

Total Percentage from all Selected Measures Sum of required and additional measures %

Trip Reduction Target Copy from Section B %

Total Percentage from all selected measures must be greater than or equal to Trip Reduction Target

F Submit Checklist

See ccagtdm.org/submission for how to submit this form.

Questions?

Email Us support@ccagtdm.org

Visit Our Website ccagtdm.org

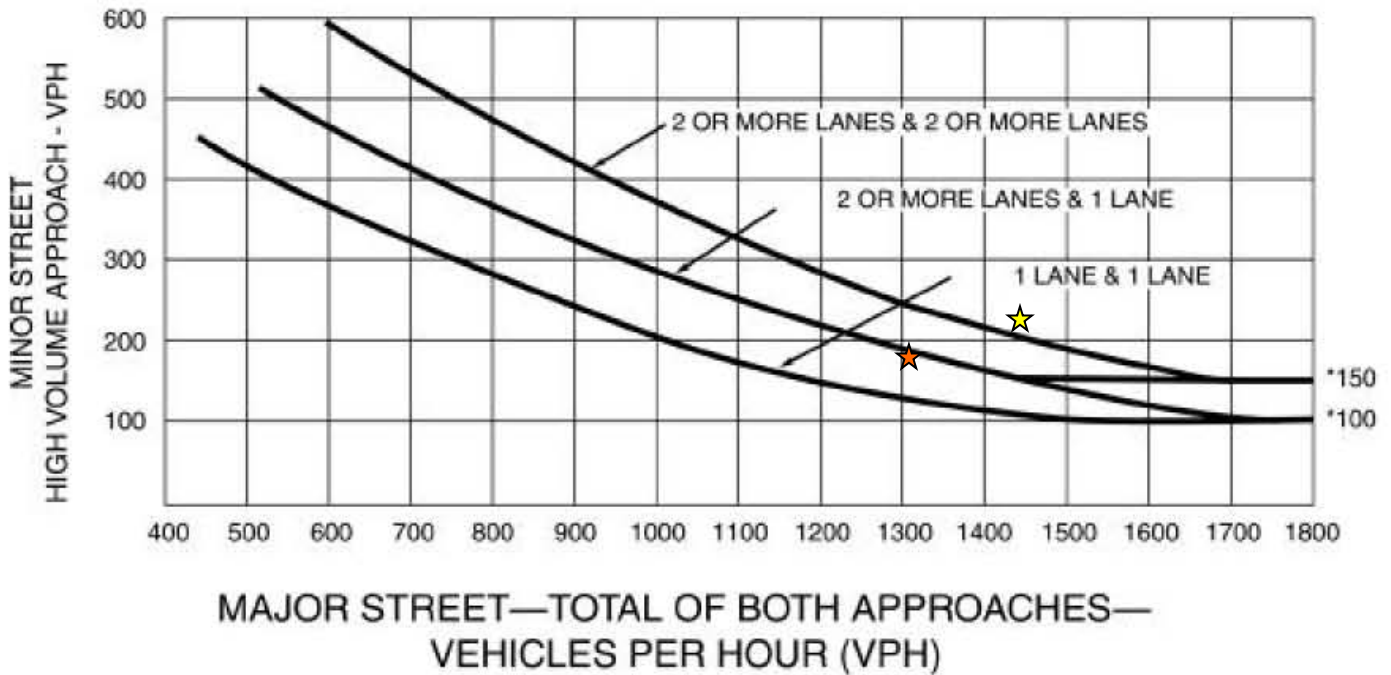
Appendix J – Signal Warrant Analysis Worksheet

Peak Hour Warrant (Urban Areas)

Intersection: #1 Serravista Avenue & Gellert Boulevard
Scenario: Existing + Project Alternative 1 Conditions

Figure 4C-3. Warrant 3, Peak Hour

Minor Street Volume = 185 (228) VPH



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Major Street Volume = 1312 (1446) VPH

★ *AM Peak Hour*

★ *PM Peak Hour*

A signal is WARRANTED in the a.m. Peak Hour
A signal is WARRANTED in the p.m. Peak Hour

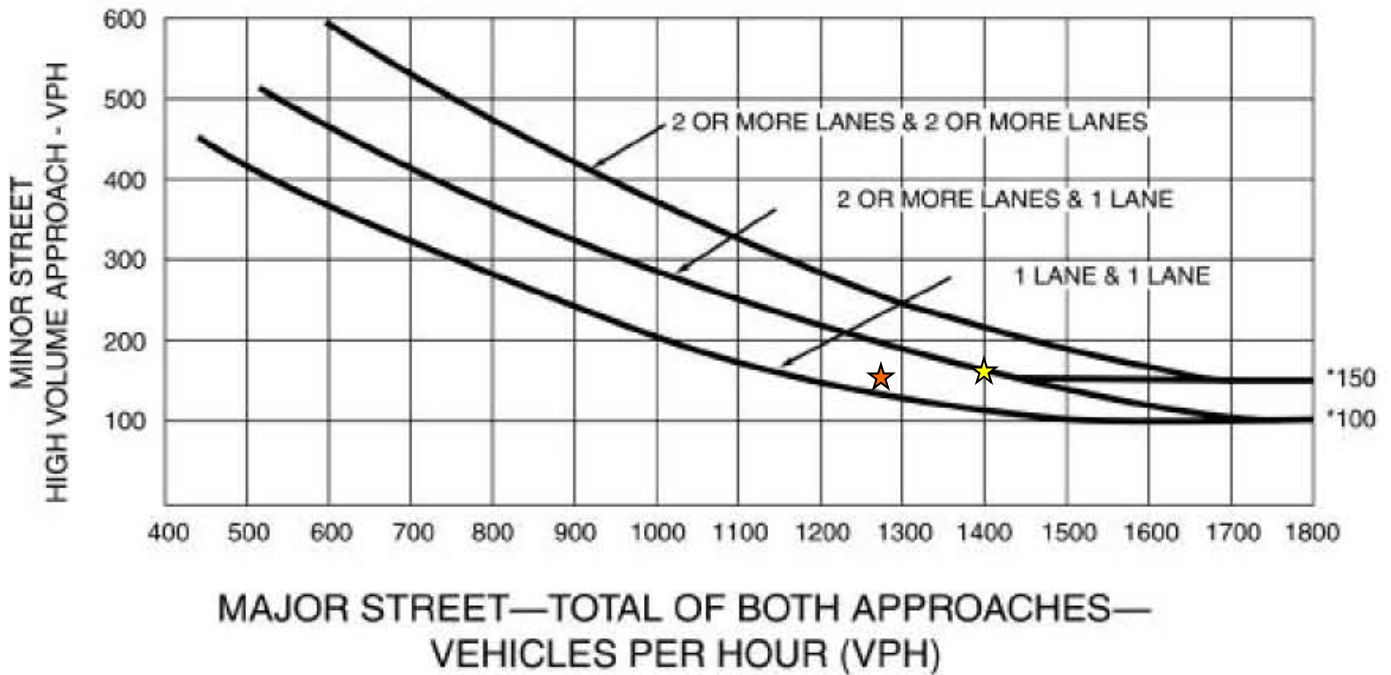
Source: CA MUTCD 2014, Chapter 4C – Traffic Control Signal Needs
Studies, Part 4 - Highway Traffic Signals, Figure 4C-3

Peak Hour Warrant (Urban Areas)

Intersection: #1 Serravista Avenue & Gellert Boulevard
 Scenario: Existing + Project Alternative 2 Conditions

Figure 4C-3. Warrant 3, Peak Hour

Minor Street Volume = 160 (160) VPH



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Major Street Volume = 1275 (1404) VPH

★ *AM Peak Hour*

★ *PM Peak Hour*

A signal is WARRANTED in the a.m. Peak Hour

A signal is WARRANTED in the p.m. Peak Hour

Source: CA MUTCD 2014, Chapter 4C – Traffic Control Signal Needs Studies, Part 4 - Highway Traffic Signals, Figure 4C-3